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Application Number	UNKNOWN
Filing Date	HEREWITH
First Named Inventor	JAMES M. CANTER ET AL.
Title	OPTICAL CHARACTER RECOGNITION OF VOTER SELECTIONS FOR CAST VOTE RECORDS
Art Unit	UNKNOWN
Examiner Name	UNKNOWN
Attorney Docket Number	HART:032C7

SIGNATURE of Applicant or Patent Practitioner

Signature	/Richard D. Egan/	Date (Optional)	
Name	Richard D. Egan	Registration Number	36788
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

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I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Hart Intercivic, Inc

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

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SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	/jc/	Date (Optional)	4/5/13
Name	James Canter		
Title	Vice President of Engineering		

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DECLARATION (37 CFR 1.63) FOR UTILITY APPLICATION USING APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention:

OPTICAL CHARACTER RECOGNITION OF VOTER SELECTIONS FOR CAST VOTE RECORDS

As the below named inventor, I hereby declare that:

- This Declaration is directed to:

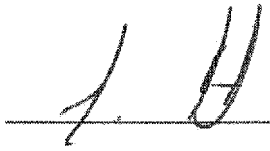
  ☒ The attached application, or
  ☐ United States application or PCT international application number filed on

- The above-identified application was made or authorized to be made by me.
- I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
- I further declare that I have reviewed and understand the contents of the above-identified application, including the claims.
- I acknowledge my duty to disclose to the United States Patent and Trademark Office (hereinafter "the Office") all information known to me to be material to patentability of the subject-matter which is claimed as defined in 37 C.F.R. §1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

LEGAL NAME OF INVENTOR

Inventor: James M. Canter Date: 1/3/2019

Signature 

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Page 3

DECLARATION (37 CFR 1.63) FOR UTILITY APPLICATION USING APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention:

OPTICAL CHARACTER RECOGNITION OF VOTER SELECTIONS FOR CAST VOTE RECORDS

As the below named inventor, I hereby declare that:

- This Declaration is directed to:

  ☒ The attached application, or
  ☐ United States application or PCT international application number filed on

- The above-identified application was made or authorized to be made by me.
- I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
- I further declare that I have reviewed and understand the contents of the above-identified application, including the claims.
- I acknowledge my duty to disclose to the United States Patent and Trademark Office (hereinafter "the Office") all information known to me to be material to patentability of the subject-matter which is claimed as defined in 37 C.F.R. §1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

LEGAL NAME OF INVENTOR

Inventor: Ievgen Konovalenko Date: 11/3/2019

Signature

Atty Dkt No.: HART:032

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DECLARATION (37 CFR 1.63) FOR UTILITY APPLICATION USING APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention:

OPTICAL CHARACTER RECOGNITION OF VOTER SELECTIONS FOR CAST VOTE RECORDS

As the below named inventor, I hereby declare that:

- This Declaration is directed to:

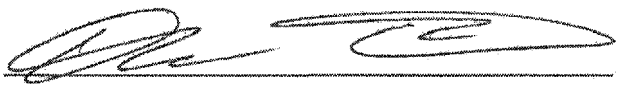
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  ☐ United States application or PCT international application number filed on

- The above-identified application was made or authorized to be made by me.
- I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
- I further declare that I have reviewed and understand the contents of the above-identified application, including the claims.
- I acknowledge my duty to disclose to the United States Patent and Trademark Office (hereinafter "the Office") all information known to me to be material to patentability of the subject-matter which is claimed as defined in 37 C.F.R. §1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

LEGAL NAME OF INVENTOR

Inventor: Drew E. Tinney Date: 11/3/2019

Signature 

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Patent Application for

Optical Character Recognition of Voter Selections for Cast Vote Records

Inventors: James M. Canter, Drew E. Tinney, Ievgen Konovalenko

BACKGROUND OF THE INVENTION

[0001] This application claims priority to Patent Application No. 17/483,627 filed September 23, 2021 which claims priority to Patent Application No. 17/225,357 filed April 8, 2021 which claims priority to Patent Application No. 16/919,267 filed July 2, 2020, now Patent No. 11,004,292, which claims priority to Patent Application No. 16/745,621 filed January 17, 2020, now Patent No. 10,950,078, which claims priority to Patent Application No. 16/560,222 filed September 4, 2019, now Patent No. 10,573,111, which claims priority to Patent Application No. 16/239,607 filed January 4, 2019, now Patent No. 10,445,966, which claims priority to Provisional Patent Application No. 62/711,212 filed July 27, 2018, the disclosures all of which are expressly incorporated herein by reference.

[0002] The present disclosure relates to the voting systems for elections. More specifically, it provides a system and method for providing paper records of voter selections and generating cast vote records from those paper records.

[0003] A variety of electronic voting systems are well known. Electronic systems include, for example, direct recording electronic (DRE) voting systems that electronically record votes to directly create an electronic cast vote record. Electronic systems also include, for example, systems in which paper vote records are generated based on a voter's electronic vote selections, with the paper vote record then being scanned for creation of the electronic cast vote record and electronic tabulation. As used herein, an electronic cast vote record is an electronic record that indicates the determined voter's choice or selection in a manner determined in accordance with the voting system. Thus, an

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electronic cast vote record is an electronic record of a voter's cast voting selections and may be used in the vote tabulation process.

[0004] The use of paper records in an electronic voting allows the creation of a paper trail of voter selections, for example for use by an elections office for audit purposes. Such voting systems have also been called "hybrid voting" as it is a cross between all electronic DRE voting and paper-based hand-marked ballots. Such hybrid systems provide an electronic voting system in which a printed vote record (PVR) is produced (allowing a paper record to be an official record), and then the PVR is scanned on a digital scanner for cast vote record creation. The PVR may be full sized sheets of paper (for example standard 8.5 x 11 inch or 8.25 x 14 inch paper stock) or may be other specialized sizes. Traditionally, the PVR contains a barcode that is encoded with the voter's vote selections. The barcode is then scanned with a scanner and decoded to generate the electronic cast vote record. It has been found though, that some voters may find such a process to lack transparency as the voter cannot readily review the barcode to confirm the encoded data matches the voter's vote selections.

[0005] It would be desirable to provide an electronic voting system that utilizes PVRs in a manner that provides better transparency to the voter.

SUMMARY OF THE INVENTION

[0006] In one embodiment, the present disclosure describes an electronic voting system that utilizes printed vote records (PVRs) in which a voter's vote selections are recorded in voter readable characters. Optical character recognition (OCR) techniques may then be utilized to scan the PVR to record the voter's selections. The OCR data is then utilized to generate the cast vote record. Thus, the electronic voting system directly interprets the voter selections from the PVR just as the voter sees the data. In this manner "what you see is what you get" printed vote record data is provided for a voter's viewing and that same data is used to generate the cast vote record.

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[0007] Further, the OCR process utilized accounts for and corrects for potential OCR errors. In one embodiment, an election dictionary is provided of the potential vote choices. Thus, for example, candidate names may be entered into the election dictionary and utilized for pattern matching to the OCR results. To further ensure accuracy (and address candidates which may have the same or similar names), the sequence number affiliated with a particular candidate may be utilized. Further, the line number (or even the contest title itself) on the PVR may also be utilized as a contest identifier. In one embodiment, the OCR'ed name and additional data may be utilized together as the key into the election dictionary. The additional data may be data related to a candidate, but being more than just the candidate name. For example, in some embodiments, the additional data may be the sequence number and/or line number data. Thus, for example, the OCR'ed name and sequence number, the OCR'ed name and line number, or the OCR'ed name, sequence number and line number may be utilized together as the key into the election dictionary. In addition, a long string matching algorithm may be utilized to provide error detection to the string. In one embodiment, the Levenshtein distance algorithm may be utilized for such string error detection. More specifically, the Levenshtein technique is used for error detection and the calculation of a "distance" between the OCR data and each key in the dictionary. If a calculated distance is below a defined threshold, then the data is matched to that dictionary entry. Then as described below, a hash check indicates if all of the matches were correct. In this manner, OCR data errors may be eliminated leading to a more robust OCR result which may be used for the subsequent generation of a cast vote record.

[0008] Further, to ensure the PVR is valid and/or has not been altered after printing, a barcode is also provided on the PVR. The barcode includes a single digitally signed hash that may be generated by using a secure hash function to indicate the PVR is valid and a one way hash of the voter's vote selections. As part of the scanning process, the optical character recognition results may be generated and then verified by use of another hash process. More specifically, a hash produced from the OCR generated characters may be compared to the hash provided in the barcode. Such techniques confirm that the PVR was printed from a known source and that the PVR has not been

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altered from its original state. In this manner, a counterfeit PVR or a PVR that has had its characters altered may be detected. Moreover, if the PVR was improperly or tampered with when printed this technique may detect such tampering.

[0009] To further ensure the accuracy of the OCR process, additional processing beyond traditional OCR processes may also be utilized for recognizing the characters presented on the PVR.

[0010] In one embodiment, a method for electronic voting using printed vote records is provided. The method comprises recording a voter's vote selections and generating a printed vote record of the voter's vote selections, the printed vote record containing voter readable text indicating the voter's vote selections. The method further comprises scanning the printed vote record, the scanning including scanning the voter readable text. The method also includes utilizing optical character recognition (OCR) on the scanned voter readable text to create a data set which identifies the voter's vote selections and generating a cast vote record from the data set so that voter selections in the cast vote record are based on the voter readable text.

[0011] In another embodiment, a method for electronic voting using printed vote records is provided. The method may comprise recording a voter's vote selection with a ballot marking device and generating a printed vote record of the voter's vote selections, the printed vote record containing voter readable text including a candidate name of a voter's vote selection. The method further comprises electronically scanning the printed vote record, the scanning including scanning the candidate name. The method also includes utilizing optical character recognition (OCR) on the scanned candidate name to create a first data set. The method further comprises comparing the first data set with an election dictionary and generating a cast vote record based on the comparing of the first data set with the election dictionary so that voter selections in the cast vote record are based on is based at least in part on the scanned candidate name.

[0012] In yet another embodiment, a method for electronic voting using printed vote records is provided. The method comprises recording a voter's vote selections and generating a printed vote record of the voter's vote selections, the printed vote record containing voter readable text indicating the voter's vote selections, the printed vote

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record further including a bar code. The method further comprises electronically scanning the printed vote record, the electronical scanning including scanning the voter readable text and scanning the bar code. The method also includes utilizing optical character recognition (OCR) on the scanned voter readable text to create a data set which identifies the voter's vote selections and generating a cast vote record from the data set so that voter selections in the cast vote record are based on the voter readable text.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] A more complete understanding of the present invention and advantages thereof may be acquired by referring to the following description taken in conjunction with the accompanying drawings, in which like reference numbers indicate like features. It is to be noted, however, that the accompanying drawings illustrate only exemplary embodiments of the disclosed concept and are therefore not to be considered limiting of its scope, for the disclosed concept may admit to other equally effective embodiments.

[0014] Figure 1 illustrates an exemplary voting system for utilizing the techniques described herein.

[0015] Figure 2 illustrates an exemplary ballot marking device for utilizing the techniques described herein.

[0016] Figure 3 illustrates an exemplary printed vote record generated by the ballot marking device.

[0017] Figure 4 illustrates an exemplary printed vote record process flow utilizing the techniques described herein.

[0018] Figure 5 illustrates an exemplary process flow for matching OCR data to ballot choices.

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DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] Figure 1 illustrates one exemplary embodiment of a voting system for utilizing the techniques described herein. It will be recognized, however, that the techniques described herein may be utilized in a wide range of other voting systems. As shown in Figure 1, a voting system 10 that may be located at a polling location includes a ballot marking device (BMD) 15, a scanner 20 and a computing device 25. In one embodiment of a voting process, a polling official and/or the voter may activate a voting session on the BMD 15 (in one example by providing an access code to a voter to access the BMD 15). After activation, the voter may then make voting selections on the BMD 15. When the voter has completed their selections, the BMD 15 may then print out a PVR of the voter's voting selections. As described above and explained in more detail below, the voter's selections may be indicated on the PVR using readable characters so that the voter may visually confirm their voting selections, thus providing voting transparency to the voter. The voter may then enter the PVR into a scanner 20 which provides a scanned image of the PVR. The scanner 20 may provide that scanned image of the PVR to a computing device 25 which is connected to the scanner 25. The computing device may then perform an OCR process on the scanned image. The computing device 25 may also provide improved accuracy and/or error correction of the OCR by utilizing data processing techniques that are described herein to enhance the conversion of the scanned image to usable data. The scanning hardware for the scanner 20 may be conventional scanning hardware. However, as described in more detail below, specialized data analysis of the scanned information may be provided to improve the integrity and reliability of the scan. Such data analysis may be accomplished with the computing device 25. The computing device may then generate an electronic cast vote record associated with the voter's selections. It will be recognized that the functionality of the computing device may alternatively be integrated within the scanner 20. The BMD 15, scanner 20 and computing device 25 may each be separate non-integrated devices. Alternatively, all or some of the functionality of these devices may be integrated together within one device.

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[0020] Figure 2 illustrates an exemplary BMD. However, it will be recognized that a wide range of other BMDs may be utilized while still achieving the advantages of the voting process described herein. The BMD 100 of Figure 2 includes a display 105, a voting processing unit 110 and a printer medium input tray 115. The voting processing unit 110 may include a variety of hardware and software, including a memory, processors, associated election software, input devices, etc., all as is known in the art. In operation, a voter may utilize the BMD 100 as part of the process of casting a vote in an election. The voter may be provided instructions and voting choices that are presented on the display 105 of the BMD 100. Various voter responses and election selections may be entered via the display (in the case of a touchscreen display) or may entered via other inputs such as a keypad, buttons, dials, etc. that may be part of the voting processing unit 110. The BMD 100 also includes an internal printer (not shown). The printer may be utilized to print a voter's selections on a PVR. In one embodiment, the printer may be a thermal printer and the PVR may be printed on thermal paper. In operation, a voter uses the BMD 100 to generate a PVR. The PVR may then be scanned and processed as described elsewhere herein to create an electronic cast vote record. As described herein, the PVR may be utilized not only as part of the cast vote record generation process, but also as a tool for the voter to inspect the generated vote selections prior to casting the voter selections through the scanning process.

[0021] As described herein, the BMD may be a hybrid voting device that combines electronic voting features with the production of a PVR. Such a technique allows voting transparency to the voter and provides the election officials a paper record which may be used for audit or other purposes. The PVR may be a full sheet of standard paper stock or may be other customized sizes. As described herein, OCR may be used to determine the voter selections with the add-on of additional data process techniques to ensure data accuracy of the OCR process and ensure validity of the PVR.

[0022] As mentioned, OCR techniques may be utilized to scan the PVR to record the voter's selections. The OCR data is then utilized to generate the cast vote record. Thus, the electronic voting system directly interprets the voter selections from the PVR just as the voter sees the data. In this manner "what you see is what you get" printed vote

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record data is provided for a voter's viewing and that same data is used to generate the cast vote record.

[0023] Further, the OCR process utilized accounts for and corrects for potential OCR errors. In one embodiment, an election dictionary is provided of the potential vote choices. Thus, for example, candidate names may be entered into the election dictionary and utilized for pattern matching to the OCR results. To further, ensure accuracy (and address candidates that have the same or similar names) additional information beyond just the candidate name be utilized for comparison to the election dictionary. Thus, in one embodiment, the OCR'ed name and additional data may be utilized together as the key into the election dictionary. The additional data may be data related to a candidate, but being more than just the candidate name. For example, in some embodiments, the additional data may be the sequence number data affiliated with a candidate. The additional data may also be line number data affiliated with a contest, and/or the contest name itself. Thus, for example, the OCR'ed name and sequence number, the OCR'ed name and line number, or the OCR'ed name, sequence number and line number may be utilized together as the key into the election dictionary. It will be recognized that other combinations of a candidate name and additional data may also be used.

[0024] In addition a long string matching algorithm may be utilized to provide error detection to the string. In one embodiment, the Levenshtein distance algorithm may be utilized for such string error detection. More specifically, the Levenshtein algorithm is used for error detection and the calculation of a "distance" between the OCR data and each key in the dictionary. If a calculated distance is below a defined threshold, then the data is matched to that dictionary entry. Then as described below, a hash check indicates if all of the matches were correct. In this manner, OCR data errors may be minimized and a more robust OCR result may be obtained and used for the subsequent generation of a cast vote record.

[0025] The scanned data for write-in candidates may be treated somewhat differently as the names of write-in candidates may not be available before the voting process for entry in an election dictionary to use in the OCR post-processing steps as described

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above. In one embodiment, write-in data may be saved in two parts as part of the cast vote record. First, a PNG snippet of the entered write-in data (a photo “snapshot”) may be stored as part of the cast vote record. Second, the OCR digital results of the write-in data are also stored. Both parts may then be included in the cast vote record and uploaded for tabulation. When the election office processes write-in votes, the election office will have the digital OCR data side by side with the write-in image so that manual adjudication (if desired) may be accomplished. In one embodiment, further additional back office write-in candidate data verification may be accomplished if the election office generates a certified write-in candidate list. More particularly, the names from the certified write-in candidate list may be entered into the back office post-processing computer systems and then used in the same manner that the election dictionary described above is used to provide enhanced accuracy to the OCR results for write-in candidates.

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[0026] Further, to ensure the PVR is valid and/or has not been altered after printing, a barcode is also provided on the PVR. The barcode includes a single digitally signed hash that may be generated using a secure hash function to indicate the PVR is valid and a one way hash of the voter's vote selections. As part of the scanning process, the optical character recognition results may be generated and then verified by use of another hash process. More specifically, a hash produced from the OCR generated characters may be compared to the hash provided in the barcode. Such techniques confirm that the PVR was printed from a known source and that the PVR has not been altered from its original state. In this manner, a counterfeit PVR or a PVR that has had its characters altered may be detected. Moreover, if the PVR was improperly or tampered with when printed, this technique can detect such tampering. It is noted that the barcode is used to confirm data accuracy and PVR integrity but, in one embodiment does not have to be used to determine voter selections. The barcode could be any of a wide range of barcode types, including for example, one dimensional barcodes or a matrix two-dimensional barcode (such as for example a QR code). Further, though described as one barcode, it will be recognized that the barcode may be split across multiple barcodes as well. For example, each barcode could serve as a landmark and the found barcode positions could be used to correct for scanning skew.

[0027] An exemplary PVR provided by the BMD 100 of Figure 2 is shown in Figure 3. As shown in Figure 3, a PVR 300 is provided. The PVR may include a header region 310 in which a variety of information may be printed. In one example, the header region 310 may include instructions to the voter, information regarding the election, a PVR number, page information, etc. As shown, in one embodiment a barcode 320 may be provided in the header region. In the example shown, the barcode is in the form of a QR code; however, other barcodes may be utilized. As described above, the barcode may be used to confirm data accuracy and/or PVR integrity but, in the exemplary embodiment, is not used to determine voter selections. The election voting contests may be shown in the contest section 330 of the PVR 300 as shown. Further, the voter's selections may be shown in the voter selection section 340 of the PVR 300 as shown. As seen in Figure 3, the voter selections are provided in a character form that is readable by the

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voter. Thus, voting transparency is provided to the voter such that the voter can confirm the PVR matches the selections entered by the voter on the BMD 100.

[0028] The contents of the barcode 320 may contain a wide variety of information including metadata content and hash data content. In one exemplary embodiment, the metadata content may include, but is not limited to a PVR barcode version, an election ID number, other unique ID numbers, an election version, precinct split sequence number, party sequence number, a crossover ballot flag, provisional ballot flag, official versus test ballot flag, accessibility settings, sheet number, sequence number of the first contest on the sheet, the number of lines on the sheet, etc. One use of the hash content is to ensure all voter selections were read correctly. Another use of the hash content is to verify the validity of the PVR itself. The hash may cover, in one embodiment, ballot metadata sections and all printed data in the voter selection section 340.

[0029] Thus, the barcode uses a single digitally signed hash that can be used for multiple purposes. First, the single digitally signed hash may be used to ensure the source origin of the PVR (that it came from the BMD 100), since it is a digital signature. In addition, the one way hash of voter selections provided in the barcode can be used to for a comparison to a hash of the OCR voter selections. The comparison of the one way hash of the barcode to the hash of OCR results can confirm that the PVR was not edited after printing. For example, if a voter's selection was edited on the PVR after printing from a first candidate name to a second candidate name, the OCR process would decode the second candidate name, but when hash checked, the first candidate name would have been utilized to create the barcode hash, and thus the hash check would fail. In this manner, though the barcode contains a hash of the voter selection data, the barcode does not contain the original voter selection data itself.

[0030] Figure 4 illustrates one exemplary PVR processing workflow utilizing a PVR such as PVR 300 of Figure 3. It will be recognized that the workflow of Figure 4 is merely one exemplary workflow and many other workflows may utilize the techniques disclosed herein. As shown in the workflow of Figure 4, a scanned PVR is analyzed in accordance with the flow diagram of the workflow starting with a PVR scan and ending with either a rejected ballot or a cast or review of the ballot. As shown in Figure 4, the workflow starts

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with step 400 of starting a PVR scan. Next, at step 405 the barcode is decrypted and at step 405 it is determined if the decrypt succeeded. It the decryption was successful the workflow proceeds to step 415. If the decryption was not successful the workflow proceeds to step 420 where the workflow ends and the PVR is rejected. At step 515, the PVR is analyzed to determine if it is allowed. If the PVR is allowed the workflow proceeds to step 425 and if the PVR is not allowed, the workflow proceeds to step 420 where the workflow ends and the PVR is rejected. At step 425, the PVR is subjected to an OCR process. At step 430, the output of the OCR is analyzed to confirm it has a valid output (for example the correct number of lines, etc.). If no, the workflow proceeds to step 420 where the PVR is rejected. If yes, the workflow proceeds to step 435.

[0031] At step 435 the OCR data is matched to the ballot choices. Then at step 440 the hash is checked and if the hash matches at step 450 the workflow proceeds to step 460. If the hash does not match the process proceeds to step 455 where it is determined if there are still valid alternatives to try. If there are no valid alternatives to try, the workflow proceeds from step 455 to step 420 where the PVR is rejected. If there are valid alternatives to try at step 455, the workflow proceeds to step 440 it is determined if the number of contests with an alternate is under a threshold. If the answer is no at step 440, workflow to step 420 where the PVR is rejected. If the answer is yes at step 440, workflow proceeds to step 445 where alternates are swapped in. Workflow then proceeds again to step 440 and steps 440 and 450 are performed again as described above. At step 460, all write-in areas are snipped. From step 460, the process proceeds to step 465 to add OCR text to snippets and then the process ends at step 470 where the PVR is cast or reviewed.

[0032] It is noted that, as part of the workflow of Figure 4, a process step occurs that matches the OCR data to ballot choices, for example at step 435 of Figure 4. Details regarding this process step are shown in more detail in Figure 5. It will be recognized that the workflow of Figure 5 is merely one exemplary matching workflow and many other workflows may utilize the techniques disclosed herein. As shown in Figure 5, a process is shown for ballot choice matching for each OCR entry. As shown in step 500, the workflow of Figure 5 beings with an OCR entry. At step 505, the workflow concatenates the choice name and additional data (in this example a sequence

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number) and the value for each possible ballot choice to create comparison strings. Note, this may include “no selection” strings to account for the situation where no selection is made by the voter. Then at step 510, the process finds the comparison string with the lowest Levenshtein distance to the OCR string. Next at step 515, it is determined if the Levenshtein distance is under a threshold. If yes, the process proceeds to step 525. If no, the process proceeds to step 520 and the printed vote record is rejected. At step 525 it is determined if any other chances have the same distance. If no, the process proceeds to step 535. If yes, the process proceeds to step 530. At step 535 the choice provided is used and the process proceeds as shown in Figure 4 and described above. At step 530, the other choices are added to the valid alternatives list and the process then proceeds to step 535.

[0033] Thus, as described herein, a PVR is provided that is readable by a voter. Further, the readable text is utilized to generate an electronic cast vote. By being readable, full voter verification of a voter’s vote selections is provided in a format that provides transparency to the voting process. An OCR process is performed on the PVR and the output of the OCR process is further processed in order to ensure data integrity and reliability. In one embodiment, an election dictionary is provided of the potential vote choices and the election dictionary and other data on the PVR is utilized to provide reliable matching of the OCR results with the proper ballot choice. A barcode and hash process may further be utilized to ensure PVR integrity and security. Thus, a voter’s choices are shown in text and OCR techniques are utilized while a barcode is utilized for PVR and choice verification. In this manner, a secure, reliable and transparent voting workflow is provided.

[0034] Further modifications and alternative embodiments of this invention will be apparent to those skilled in the art in view of this description. Accordingly, this description is to be construed as illustrative only and is for the purpose of teaching those skilled in the art the manner of carrying out the invention. It is to be understood that the forms and methods of the invention herein shown and described are to be taken as presently preferred embodiments. Equivalent techniques may be substituted for those illustrated and described herein and certain features of the invention may be

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utilized independently of the use of other features, all as would be apparent to one skilled in the art after having the benefit of this description of the invention.

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What is claimed is:

1. A method for electronic voting using printed vote records, comprising:

generating a printed vote record of at least one vote selection of a voter;

providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;

electronically capturing information from the printed vote record;

using optical character recognition (OCR) on at least a portion of the electronically captured information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection;

comparing the first data set to a second data set; and

generating a cast vote record, which is to be a stored record of all of the voter's final vote selections and to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection, wherein, prior to generating any cast vote record which is to be a stored record of all of the voter's final vote selections and to be the voter's casted vote used for vote tabulation, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

2. The method of claim 1, wherein the printed vote record further comprises encoded data based at least in part on the voter's at least one vote selection, and wherein the second data set is generated at least in part from the encoded data.

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3. The method of claim 2, wherein electronically capturing information from the printed vote record includes capturing the encoded data.

4. The method of claim 1, wherein the electronically capturing information from the printed vote record comprises electronically scanning the voter readable text.

5. The method of claim 4, wherein the printed vote record further comprises encoded data based at least in part on the voter's at least one vote selection, and wherein the electronically capturing information from the printed vote record further comprises electronically scanning the encoded data.

6. The method of claim 5, wherein the encoded data is contained in a visual representation of encoded data.

7. The method of claim 1, wherein the information captured from the printed voter record comprises the voter readable text indicating the voter's at least one vote selection and other information.

8. The method of claim 7, wherein the other information is contained in a bar code.

9. The method of claim 7, wherein the second data set is based at least in part on the other information.

10. The method of claim 1, wherein electronically capturing information from the printed vote record comprises capturing an image of the printed vote record.

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11. The method of claim 1, wherein the cast vote record provides the voter's sole casted vote used for vote tabulation.

12. The method of claim 11, wherein the information captured from the printed voter record comprises the voter readable text indicating the voter's at least one vote selection and other information.

13. The method of claim 12, wherein the other information is contained in a bar code.

14. The method of claim 12, wherein the second data set is based at least in part on the other information.

15. A method for electronic voting using printed vote records, comprising:

generating a printed vote record of at least one vote selection of a voter;

providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;

electronically capturing first information from the printed vote record;

using optical character recognition (OCR) on the first information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection;

electronically capturing second information from the printed vote record, to generate a second data set, the second information comprising encoded data;

comparing the first data set to a second data set; and

generating a cast vote record indicating the voter's at least one vote selection, the cast vote record being a stored record of all of the voter's final vote selections, wherein, prior to generating any cast vote record which is to be

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a stored record of all of the voter's final vote selections, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

16. The method of claim 15, wherein the encoded data is contained in a visual representation of encoded data.

17. The method of claim 15, further comprising confirming an accuracy of an optical character recognition (OCR) by utilizing a first hash produced from the first data set.

18. The method of claim 15, further comprising confirming an accuracy of an optical character recognition (OCR) by comparing a first hash produced from the first data set to a second hash, wherein the second hash is at least part of the encoded data.

19. The method of claim 15, wherein the comparison of the first data set and the second data set is used to confirm an accuracy of an optical character recognition (OCR) process by confirming that the at least one vote selection that the first data set is based at least in part on matches the at least one vote selection that the second data set is based at least in part on.

20. The method of claim 15, wherein the cast vote record is based on the first data set.

21. The method of claim 15, wherein using optical character recognition (OCR) on the first information to generate a first data set further comprises recursively modifying an OCR process applied to the voter readable text.

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22. The method of claim 21, wherein after the cast vote record is generated, the cast vote record is utilized during a tabulation of an election.

23. The method of claim 15, wherein the cast vote record provides the voter's sole casted vote used for vote tabulation.

24. The method of claim 23, further comprising confirming an accuracy of an optical character recognition (OCR) by utilizing a first hash produced from the first data set.

25. The method of claim 23, further comprising confirming an accuracy of an optical character recognition (OCR) by comparing a first hash produced from the first data set to a second hash, wherein the second hash is at least part of the encoded data.

26. The method of claim 23, wherein the comparison of the first data set and the second data set is used to confirm an accuracy of an optical character recognition (OCR) process by confirming that the at least one vote selection that the first data set is based at least in part on matches the at least one vote selection that the second data set is based at least in part on.

27. The method of claim 23, wherein the cast vote record is based on the first data set.

28. The method of claim 27, wherein using optical character recognition (OCR) on the first information to generate a first data set further comprises recursively modifying an OCR process applied to the voter readable text.

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29. An electronic voting system for using printed vote records, comprising:

a printer configured to generate a printed vote record of at least one vote selection of a voter, the printed vote record including voter readable text indicating the voter's at least one vote selection;

a scanner configured to (1) electronically capture first information from the printed vote record, the first information including the voter readable text, and (2) electronically capture second information from the printed vote record, the second information comprising encoded data; and

a processor configured to (1) use optical character recognition (OCR) on the first information to generate a first data set based at least in part on the voter readable text indicating the voter's at least one vote selection, (2) generate a cast vote record which is to be a stored record of all of the voter's final vote selection indicating the voter's at least one vote selection based on the first data set and which is to be the voter's casted vote used for vote tabulation, and (3) generate a second data set from the second information, and

wherein, the processor is further configured such that prior to generating the cast vote record which is to be a stored record of all of the voter's final vote selections and to be used for vote tabulation, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

30. The system of claim 29, wherein the processor is configured to recursively modify the first data set.

31. The system of claim 29, wherein the processor is further configured to generate an OCR hash from the first data set, and to compare the OCR hash to an encoded hash extracted from the encoded data on the printed vote record.

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32. The system of claim 31, wherein the processor is configured to recursively modify the first data set by generating an additional OCR hash for comparison to the encoded hash until the additional OCR hash matches the encoded hash.

33. The system of claim 31, wherein the processor is configured to recursively modify the first data set by, in response to a mismatch between the OCR hash and the encoded hash, selecting a valid alternate OCR output.

34. A method for electronic voting using printed vote records, comprising:

generating a printed vote record of at least one vote selection of a voter;

providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;

electronically capturing first information from the printed vote record;

using optical character recognition (OCR) on the first information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection;

electronically capturing second information from the printed vote record, to generate a second data set, the second information comprising encoded data;

comparing the first data set to a second data set;

confirming an accuracy of the at least one vote selection of the voter based at least in part on a comparison of the first data set and the second data set;

after confirming an accuracy of the at least one vote selection, generating a cast vote record which is to be a stored record of all of the voter's final vote selections and which is to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection as determined by the first data set; the cast vote record being

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generated after the comparing the first data set and the second data set; and

tabulating an election utilizing the cast vote record before vote auditing.

35. The method of claim 34, wherein comparing the first data set to the second data set comprises comparing a first hash produced from the first data set to a second hash extracted from the encoded data on the printed vote record.

36. The method of claim 35, further comprising recursively modifying the first data set, prior to generating the cast vote record.

37. The method of claim 36, wherein the recursively modifying the first data set comprises generating an additional OCR hash for comparison to a second hash extracted from the encoded data on the printed vote record, until the additional OCR hash matches the second hash.

38. The method of claim 35, wherein recursively modifying the first data set further comprises: based on the comparison of the first data set to the second data set, selecting a valid alternate OCR output based on the OCR process applied to the voter readable text.

39. The method of claim 34, further comprising utilizing the printed vote record for auditing the election, the auditing of the election being separate from the tabulation of the election.

40. The method of claim 34, wherein the cast vote record provides the voter's sole casted vote used for vote tabulation.

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ABSTRACT

An electronic voting system is described that utilizes printed vote records (PVRs) in which a voter's vote selections are recorded in voter readable characters. Optical character recognition (OCR) techniques may then be utilized to scan the PVR to record the voter's selections. The OCR data is then utilized to generate the cast vote record. Thus, the electronic voting system directly interprets the voter selections from the PVR just as the voter sees the data. In this manner "what you see is what you get" printed vote record data is provided for a voter's viewing and that same data is used to generate the cast vote record.

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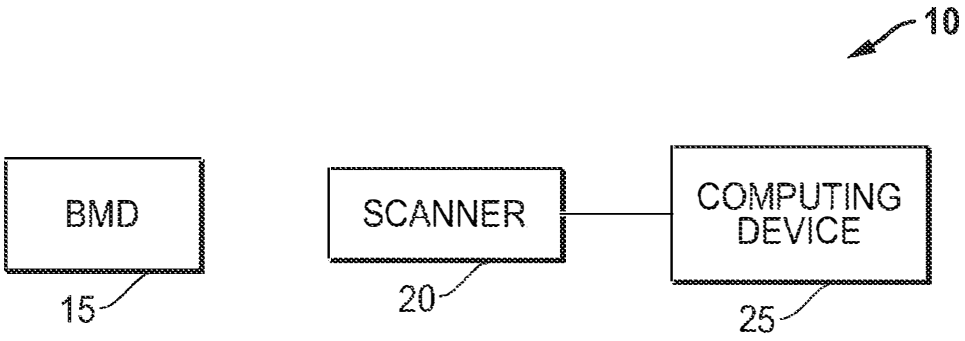


FIG. 1

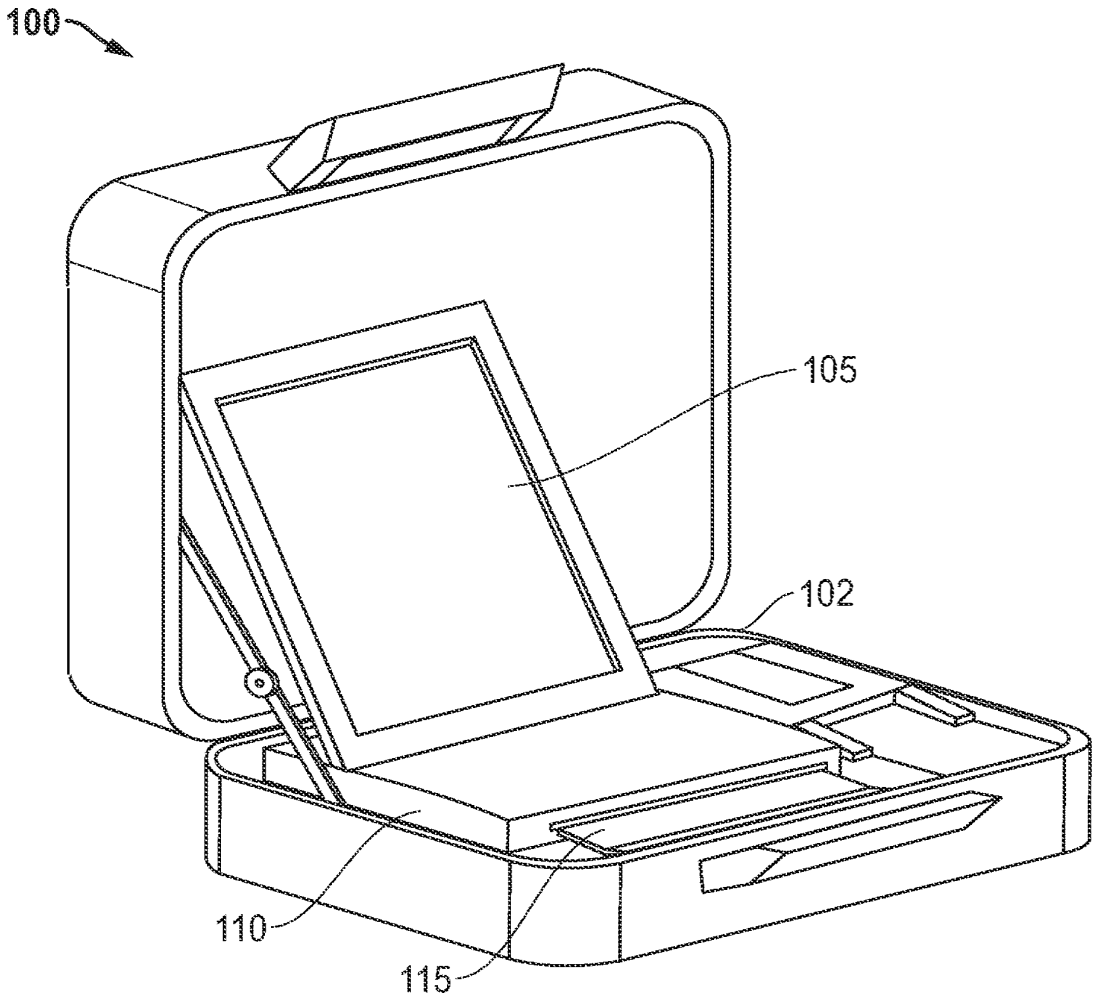


FIG. 2

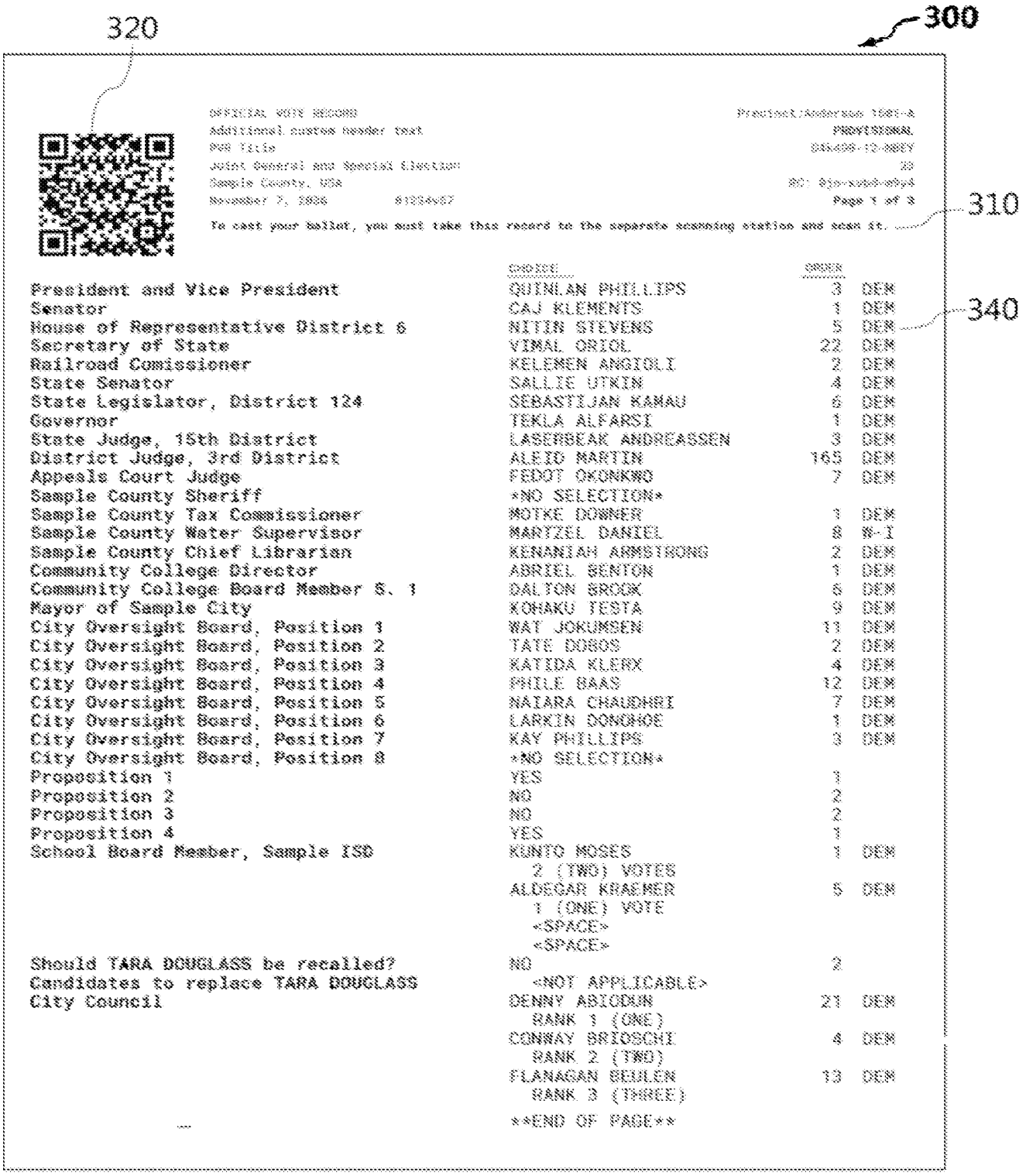

320
300
OFFICIAL VOTE RECORD
Additional custom header text
PCR Title
Joint General and Special Election
Sample County, USA
November 7, 2006 81234567
Precinct/Anderson 1001-A
PRECINCTCOUNT
0A1408-12-ABEY
20
BC: 0jp-kobb-ohyd
Page 1 of 3
To cast your ballot, you must take this record to the separate scanning station and scan it.
310
CHOICE
PARTY
340
President and Vice President
QUINLAN PHILLIPS 3 DEM
Senator
CAJ KLEMENTS 1 DEM
House of Representative District 6
NITIN STEVENS 5 DEM
Secretary of State
VIMAL ORIOL 22 DEM
Railroad Comissioner
KELEMEN ANGIOLI 2 DEM
State Senator
SALLIE UTKIN 4 DEM
State Legislator, District 124
SEBASTIJAN KANAU 6 DEM
Governor
TEKLA ALFARSI 1 DEM
State Judge, 15th District
LASERBEAK ANDREASSEN 3 DEM
District Judge, 3rd District
ALEID MARTIN 165 DEM
Appeals Court Judge
FEDOT OKONKWO 7 DEM
Sample County Sheriff
NO SELECTION
Sample County Tax Commissioner
MOTKE DOWNER 1 DEM
Sample County Water Supervisor
MARTZEL DANIEL 8 W-I
Sample County Chief Librarian
KENANIAH ARMSTRONG 2 DEM
Community College Director
ABRIEL BENTON 1 DEM
Community College Board Member S. 1
DALTON BROOK 6 DEM
Mayor of Sample City
KOHAKU TESTA 9 DEM
City Oversight Board, Position 1
WAT JOKUMSEN 11 DEM
City Oversight Board, Position 2
TATE DOBOS 2 DEM
City Oversight Board, Position 3
KATIDA KLERX 4 DEM
City Oversight Board, Position 4
PHILE BAAS 12 DEM
City Oversight Board, Position 5
NAIARA CHAUDHRI 7 DEM
City Oversight Board, Position 6
LARKIN DONOHOE 1 DEM
City Oversight Board, Position 7
KAY PHILLIPS 3 DEM
City Oversight Board, Position 8
NO SELECTION
Proposition 1
YES 1
Proposition 2
NO 2
Proposition 3
NO 2
Proposition 4
YES 1
School Board Member, Sample ISD
KUNTO MOSES 1 DEM
2 (TWO) VOTES
ALDEGAR KRAEMER 5 DEM
1 (ONE) VOTE
<SPACE>
<SPACE>
Should TARA DOUGLASS be recalled?
NO 2
Candidates to replace TARA DOUGLASS
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City Council
DENNY ABIODUN 21 DEM
RANK 1 (ONE)
CONWAY BRIOSCHI 4 DEM
RANK 2 (TWO)
FLANAGAN BEULEN 13 DEM
RANK 3 (THREE)
END OF PAGE

FIG. 3

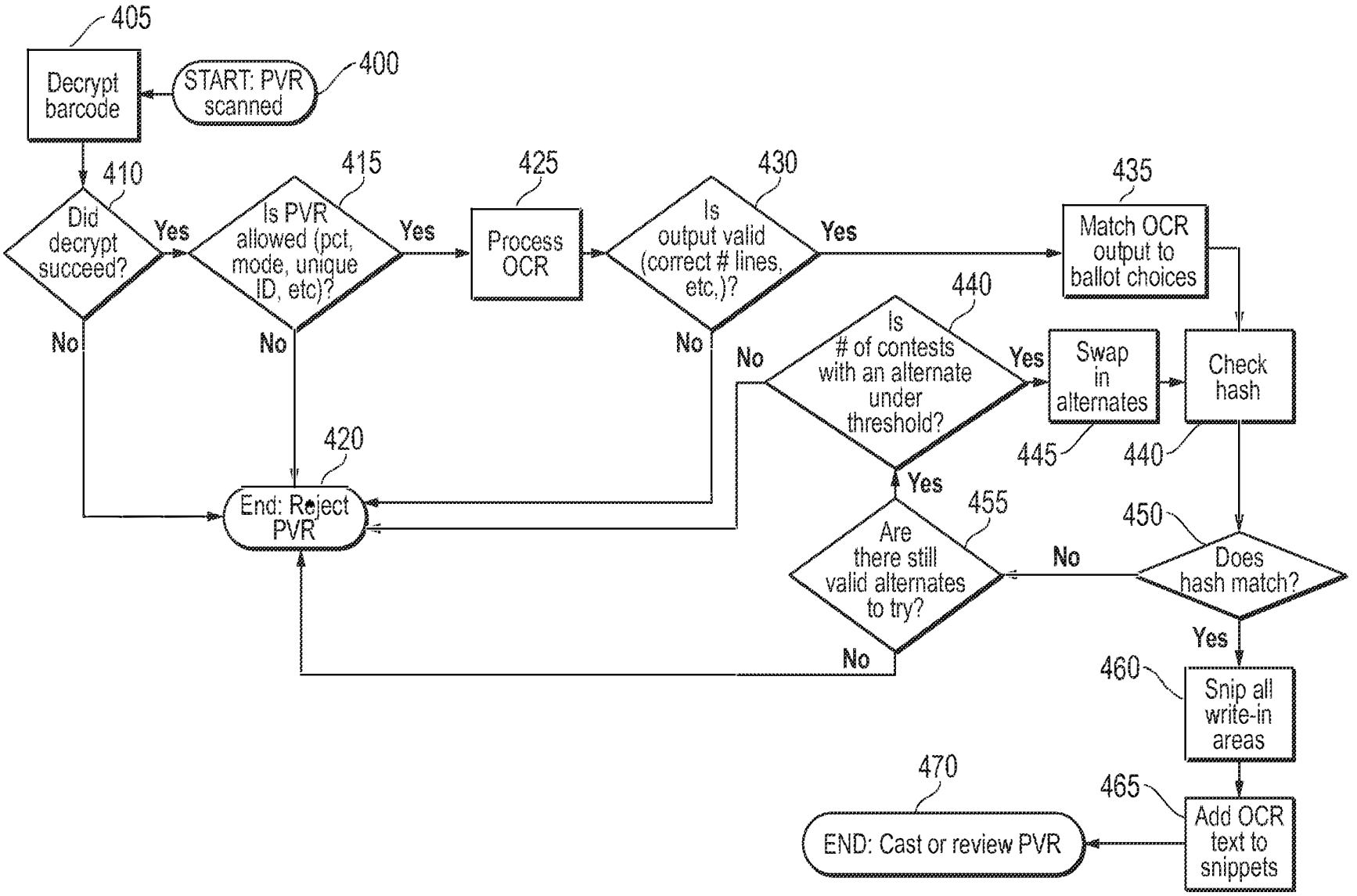

405
Decrypt barcode
START: PVR scanned
400
410
Did decrypt succeed?
Yes
415
Is PVR allowed (pct, mode, unique ID, etc)?
Yes
425
Process OCR
430
Is output valid (correct # lines, etc,)?
Yes
435
Match OCR output to ballot choices
No
No
No
440
Is # of contests with an alternate under threshold?
No
Yes
Swap in alternates
445
Check hash
440
420
End: Reject PVR
Yes
455
Are there still valid alternates to try?
No
450
Does hash match?
No
Yes
460
Snip all write-in areas
470
END: Cast or review PVR
465
Add OCR text to snippets

FIG. 4

3/4

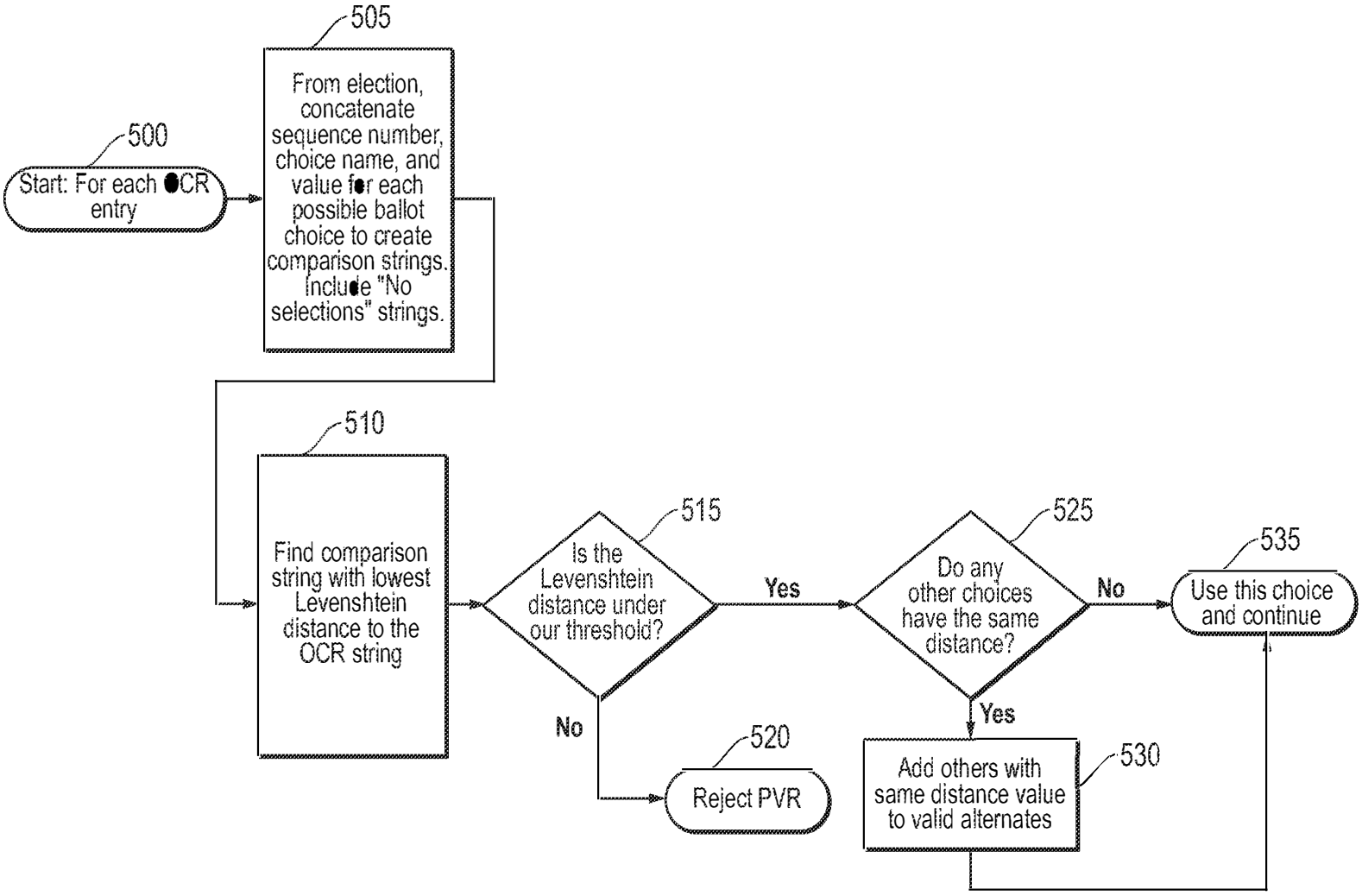

500
Start: For each OCR entry
505
From election, concatenate sequence number, choice name, and value for each possible ballot choice to create comparison strings. Include "No selections" strings.
510
Find comparison string with lowest Levenshtein distance to the OCR string
515
Is the Levenshtein distance under our threshold?
Yes
No
520
Reject PVR
525
Do any other choices have the same distance?
Yes
No
530
Add others with same distance value to valid alternates
535
Use this choice and continue

FIG. 5

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	HART:032C7
	Application Number	
Title of Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

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☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	James	M.	Canter	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	Austin	State/Province	TX	Country of Residence	US

Mailing Address of Inventor:

Address 1	10603 Winchelsea Drive
Address 2	

City	Austin	State/Province	TX
Postal Code	78750	Country i	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Drew	E.	Tinney	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

City	Austin	State/Province	TX	Country of Residence	US

Mailing Address of Inventor:

Address 1	1501 Arcadia Avenue
Address 2	

City	Austin	State/Province	TX
Postal Code	78757	Country i	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jevgen		Konovalenko	

Residence Information (Select One) ◉ US Residency Non US Residency Active US Military Service

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	HART:032C7
	Application Number	
Title of Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records	

City	Austin	State/Province	TX	Country of Residence	US

Mailing Address of Inventor:

Address 1	14302 Terisu Lane		
Address 2			
City	Austin	**State/Province**	TX
Postal Code	78728	**Country**	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).

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Application Information:

Title of the Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records		
Attorney Docket Number	HART:032C7	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	**Suggested Figure for Publication (if any)**	4

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	HART:032C7
	Application Number	
Title of Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records	

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Customer Number	36275		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	17483627	2021-09-23
Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
17483627	Continuation of	17225357	2021-04-08
Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17225357	Continuation of	16919267	2020-07-02	11004292	2021-02-11
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16919267	Continuation of	16745621	2020-01-17	10950078	2021-03-16
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16745621	Continuation of	16560222	2019-09-04	10573111	2020-02-25

PTO/AIA/14 (11-15)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	HART:032C7
	Application Number	
Title of Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records	

Prior Application Status	Patented			Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16560222	Continuation of	16239607	2019-01-04	10445966	2019-10-15
Prior Application Status	Expired			Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
16239607	Claims benefit of provisional	62711212	2018-07-27		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.			Add		

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	HART:032C7
	Application Number	
Title of Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

PTO/AIA/14 (11-15)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	HART:032C7
	Application Number	
Title of Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	Hart InterCivic, Inc.		
Mailing Address Information For Applicant:			
Address 1	15550 Wells Port Drive		
Address 2			
City	Austin	**State/Province**	TX
Country	US	Postal Code	78728
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	HART:032C7
	Application Number	
Title of Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Richard D. Egan/			Date (YYYY-MM-DD)	2023-10-17
First Name	Richard D.	Last Name	Egan	Registration Number	36788

Additional Signature may be generated within this form by selecting the Add button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	HART:032C7
	Application Number	
Title of Invention	Optical Character Recognition Of Voter Selections For Cast Vote Records	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the PatentCooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 41

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	OPTICAL CHARACTER RECOGNITION OF VOTER SELECTIONS FOR CAST VOTE RECORDS
First Named Inventor/Applicant Name:	JAMES M. CANTER
Filer:	Richard D. Egan/Marty Jones
Attorney Docket Number:	HART:032C7

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	320	320
UTILITY SEARCH FEE	1111	1	700	700
UTILITY EXAMINATION FEE	1311	1	800	800
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	20	100	2000
INDEPENDENT CLAIMS IN EXCESS OF 3	1201	1	480	480
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**4300**

Electronic Acknowledgement Receipt	
EFS ID:	48731120
Application Number:	18381091
International Application Number:	
Confirmation Number:	1082
Title of Invention:	OPTICAL CHARACTER RECOGNITION OF VOTER SELECTIONS FOR CAST VOTE RECORDS
First Named Inventor/Applicant Name:	JAMES M. CANTER
Customer Number:	36275
Filer:	Richard D. Egan/Marty Jones
Filer Authorized By:	Richard D. Egan
Attorney Docket Number:	HART:032C7
Receipt Date:	17-OCT-2023
Filing Date:	
Time Stamp:	18:19:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$4300
RAM confirmation Number	E20230GI20506804
Deposit Account	101205
Authorized User	Marty Jones
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.21 (Miscellaneous fees and charges) 37 CFR 1.20 (Post Issuance fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.16 (National application filing, search, and examination fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	POA.pdf	275996 f12f911bdbe87709d6d9810f73c0f645ad428136	no	2
Warnings:					
Information:					
2	Oath or Declaration filed	Decs.pdf	323729 09b046f4b7202c20c0f880085649ab16137ecec6	no	3
Warnings:					
Information:					
3		Patentapplication.pdf	119275 6a946934bc32a4040e358509bd33816b73d22c62	yes	23

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Specification	1	14
	Claims	15	22
	Abstract	23	23

Warnings:					
Information:					
4	Drawings-only black and white line drawings	Figures.pdf	308854 b6f06a0df0eb52b88bd406661975e39589acdd85	no	4
Warnings:					
Information:					
5	Application Data Sheet	ADS.pdf	1823578 cfe90d8f56ede9ef1c9b303354195215e085f82e	no	9

Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	47655 080a65523f70b8ba0ad8a2e7680421d25fbdf1d8	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2899087		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/08a (03-15)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	18381091
Filing Date	2023-10-17
First Named Inventor	JAMES M. CANTER
Art Unit	
Examiner Name	
Attorney Docket Number	HART:032C7

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7306148		2007-12-11	Morganstein	
	2	5377099		1994-12-27	Miyagawa	
	3	6885758		2005-04-26	Bayer	
	4	5726435		1998-03-10	Hara et al.	
	5	2612994		1949-10-20	Woodland et al.	
	6	10147259		2018-12-04	Dvorak	
	7	10002481		2018-06-19	Seibel et al.	
	8	9165417		2015-10-20	Valles Fontanals et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18381091
	Filing Date	2023-10-17
	First Named Inventor	JAMES M. CANTER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	HART:032C7

	9	6873966		2005-03-29	Babbitt et al.	
	10	7729991		2010-06-01	Rodriguez et al.	
	11	RE40449		2008-08-05	Provitola et al.	
	12	6250548		2001-06-26	McClure et al.	
	13	5764799		1998-06-09	Hong et al.	
	14	9361531		2016-06-07	Stella	
	15	3609685		1971-09-28	Deutsch	
	16	9401059		2016-07-26	Backert et al.	
	17	6971574		2005-12-06	Herskowitz	
	18	7080779		2006-07-25	Cummings	
	19	7406201		2008-07-29	Heilper et al.	

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	Application Number	18381091
	Filing Date	2023-10-17
	First Named Inventor	JAMES M. CANTER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	HART:032C7

	20	7635088		2009-12-22	Kevin Chung et al.	
	21	7988047		2011-08-02	Kevin Chung at al.	
	22	8261986		2012-09-11	Kevin Chung et al.	
	23	8991701		2015-03-31	Steve Bolton et al.	
	24	5497318		1996-03-05	Takayoshi Miyagawa et al.	
	25	10445966		2019-10-15	Canter et al.	
	26	10573111		2020-02-25	Canter et al.	
	27	5748807		1998-05-05	Lopresti et al.	
	28	5703972		1997-12-30	Lopresti et al.	
	29	5625721		1997-04-29	Lopresti et al.	
	30	10950078		2021-03-16	Canter et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18381091
	Filing Date	2023-10-17
	First Named Inventor	JAMES M. CANTER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	HART:032C7

	31	5850480		1998-12-15	Scanlon	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20190213820		2019-07-11	Sebes et al.	
	2	20090166417		2009-07-02	Dammann et al.	
	3	20060041468		2006-02-23	Reardon	
	4	20140012635		2014-01-09	Joyce et al.	
	5	20100114674		2010-05-06	Daza Fernandez et al.	
	6	20110202464		2011-08-18	Carbullido	
	7	20180102013		2018-04-12	Spanos et al.	
	8	20090289115		2009-11-26	Kevin Chung et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18381091
	Filing Date	2023-10-17
	First Named Inventor	JAMES M. CANTER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	HART:032C7

	9	20180350180		2018-12-06	Daniel Onischuk	
	10	20170344538		2017-11-30	Hiroya Horai	
	11	20140231513		2014-08-21	Sean Brockhouse et al.	
	12	20020084325		2002-07-04	David C. Reardon	
	13	20090256703		2009-10-15	Steve Bolton	
	14	20050269406		2005-12-08	Andrew C. Neff	
	15	20210225109		2021-07-22	Canter et al.	
	16	20160019439		2016-01-21	Wang	
	17	20220012971		2022-01-13	Canter et al.	
	18	20220012970		2022-01-13	Canter et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18381091
	Filing Date	2023-10-17
	First Named Inventor	JAMES M. CANTER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	HART:032C7

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	0120562A2	WO		2001-03-22	Adler et al.		
	2	2004038632	WO		2004-05-06	Boldin		
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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Kim et al., "Improved Support For Machine-Assisted Ballot-Level Audits", Usenix Journal Of Election Technology And Systems (JETS), Vol. 1, No. 1, August 2013, 18 pgs.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	18381091
	Filing Date	2023-10-17
	First Named Inventor	JAMES M. CANTER
	Art Unit	
	Examiner Name	
	Attorney Docket Number	HART:032C7

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	Attorney Docket Number	HART:032C7

	15	Election Systems & Software, ExpressVote XL, Full face Universal Voting System, 2016, 2 pgs.	
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	17	Petition For Post Grant Review Of U.S. Patent No. 10,445,966, Election Systems & Software, LLC. v. Hart InterCivic, Inc., 99 pgs.	
	18	Declaration Of Carlos Cezar Cordeiro Pires, Election Systems & Software, LLC. v. Hart InterCivic, Inc., Patent No. 10,445,966, 100 pgs.	
	19	Declaration Of Michael I. Shamos, Ph.D., J.D. Election Systems & Software, LLC. v. Hart InterCivic, Inc., Patent No. 10,445,966, 175 pgs.	
	20	Petitioner's Power Of Attorney, Election Systems & Software, LLC. v. Hart InterCivic, Inc., Patent No. 10,445,966, 3 pgs.	
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	23	Election Systems & Software, LLC. v. Hart InterCivic, Inc., Patent No. 10,445,966, Decision Granting Institution Of Post-Grant Review 35 U.S.C. § 324, 37 C.F.R. § 42.4, September 2, 2020, 48 pgs.	
	24	Certified Translation of Brazil Patent Document BR-102013018558-2 A2, Nadaf, "Verification Ballot Printing And Collection Equipment And Equipment For Auditing And Counting Votes Printed On Verification Ballots For A Mechatronic Voting Model", Filed July 19, 2013, 158 pgs.	
	25	Election Systems & Software, LLC. v. Hart Intercivic, Inc., "Petitioner's Reply To Patent Owner's Response", Patent No. 10,445,966, February 17, 2021, 38 pgs.	

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	Attorney Docket Number	HART:032C7

	26	Election Systems & Software, LLC. v. Hart Intercivic, Inc., "Video Conference Deposition Of Daniel P. Lopresti, Ph.D." , Patent No. 10,445,966, February 5, 2021, 87 pgs.	
	27	Federal Information Processing Standards Publication, "Digital Signature Standard (DSS)", Information Technology Laboratory, FIPS PUB 186-4, July 2013, 130 pgs.	
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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Examiner Name	
	Attorney Docket Number	HART:032C7

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Richard D. Egan/	Date (YYYY-MM-DD)	2023-10-18
Name/Print	Richard D. Egan	Registration Number	36788

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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TRANSLATOR CERTIFICATION

Date: February 21, 2020

To whom it may concern:

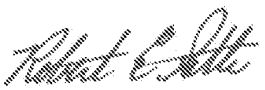
I, Robert E. Sette, a translator fluent in the Portuguese and English languages, on behalf of Morningside Translations, do solemnly and sincerely declare that Exhibit A is, to the best of my knowledge and belief, a true and correct translation from Portuguese to English of BR 10 2013 018558-2 A2 (attached hereto as Exhibit B), in a form that best reflects the intention and meaning of the original text.

I was also asked to compare BR 10 2013 018558-2 A2 as attached as Exhibit B, to Exhibits C and D.

I have been informed that Exhibit B was obtained from Espacenet. I have further been informed that Exhibits C and D are scanned copies of certified documents that were received from the Brazilian National Institute of Industrial Property. It is my understanding that Exhibits C and D were received as one-sided documents that included a certification from the Brazilian National Institute of Industrial Property on the back of each page.

Upon comparing Exhibit B to Exhibits C and D, I can confirm that the entirety of Exhibit B is included within the combination of Exhibit C and Exhibit D. Specifically, the first page of Exhibit B is identical to page 1 of exhibit D and pages 2-29 of Exhibit B are identical to the odd numbered pages 15-70 of Exhibit C.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 21, 2020.



Signature

Robert E. Sette
Print

Exhibit A

1007
, Inc.
age 2

Federated Republic of Brazil
Ministry of Development, Industry & Foreign Trade
National Institute for Industrial Property

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(22) File Date: July 19, 2013
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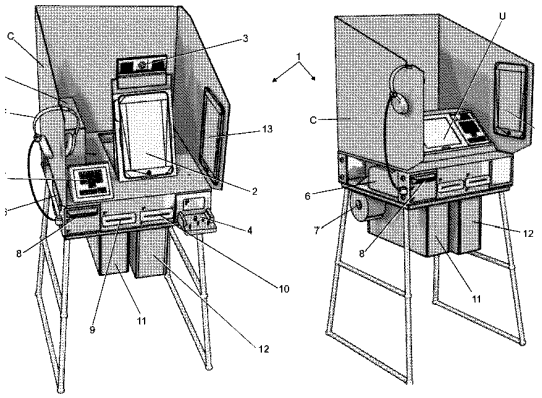
(54) Title: VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT AND EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS FOR A MECHATRONIC VOTING MODEL

(73) Holder(s): Ronaldo Moises Nadaf

(72) Inventor(s): Ronaldo Moises Nadaf

(74) Attorney(s): MODAL MARCAS E PATENTES LTDA

(57) Abstract: VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT AND EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS FOR A MECHATRONIC VOTING MODEL, wherein equipment (1) forms a system that allows the voter to vote and obtain a printed ballot (14) confirming the electronic vote and the printout, via bar codes (15), (16), (17) and (18) printed thereon. This ballot (13) is transferred to a second piece of equipment (19), for counting votes, where such information is read, forming a fully interoperating electronic and printed storage system that is able to be audited in the event of questions regarding fraud, providing complete security to the voting system.



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"VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT AND EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS FOR A MECHATRONIC VOTING MODEL"

The present patent application refers to a set of equipment that will provide any citizen with electronic voting combined with the ability to compare the true record of their political intent, using paper voting ballots as an auditing and individual vote security mechanism.

This set of equipment will bring the vote printed on paper ballots to the electoral process, however, with another level of security, where the ballot printed with the citizen's vote will be handled only by the voter casting the vote.

The first piece of equipment, called VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT will allow, in addition to printing the vote, an expansion of the security of voter identification, since its purpose is to use a dual biometric voter recognition process, wherein a biometric reading of the face will be verified, in addition to the fingerprints of 4 fingers.

The voting ballot generated in this new technological context will bear a printout of at least 2 individual vote records, the first of which will be a text record, produced by the digital systems of the

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digital voting equipment, including the electronic urns in use today, and a second vote record, which will be generated by the VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT, which is the subject of this patent, with said vote printed, on the same ballot, in two-dimensional bar codes, thus expanding the security, transparency and the auditing mechanisms of the process for generating and collecting the votes.

In addition to the two records of the individual vote, one in text and the other in a bar code, the printed ballot will have two more records in two-dimensional bar codes that will store the digital signatures of the Elections Judge and of the other institution responsible for auditing the process.

These digital signatures will be generated by asymmetric cryptography with the Elliptic Curve Digital Signature Algorithm (ECDSA) with a pair of codes having a minimum size of 283 bits. The vote signing process will take place using the private codes of the institutions, which will be installed on the VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT and on the vote collection computer, ensuring the institutional provenance of the printed vote, without violating the confidentiality of the same.

A second piece of equipment present in this patent application, known as the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS, will be responsible for auditing receipt of the storage urn for the printed votes, which urn will have its physical security maintained by a seal with

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radio frequency technology.

This equipment, in addition to verifying the radio frequency seals, will audit the printed votes collected by the urn, by comparing the text record to the information contained in the two-dimensional bar codes, verifying the digital signatures by means of the respective public codes generated for the vote collection equipment, confirming the institutional provenance and integrity of the content of the printed vote.

Only after being audited will the printed vote be validated for counting, and it will again be recorded electronically with other votes from the polling place in a simplified vote counting system also installed on the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS.

This machine will also be responsible for packaging the printed ballots collected at a polling place, which will leave the second piece of equipment, added up and sealed in a plastic wrapper with another radio frequency technology chip, starting the auditing and storage process controlled using this technology.

STATE OF THE ART

As is known historically, cultural trauma has been caused by the period during which the country conducted its elections on paper ballots.

Many forms of fraud occurred during this long period in the past,

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such as the *"voto carreirinha"* [carriageway vote], when a first voter is able to leave the polling place with a blank ballot and passes it on to a corrupt voter, who fills out the ballot with the name of his candidate and hands it to another voter, who enters the pre-filled ballot and repeats the action of removing a blank ballot, thus creating a secure—and obviously illegal—system to divert votes.

Records of falsification, tampering and theft of ballots is part of a distant past since they were efficiently extinguished by the current electronic voting model. Therefore the population in general and also the political class do not believe in the real need to have the vote printed on paper.

However, they fearfully participate in fully electronic voting. That statement is due to the fact that scientific research conducted by various countries seeking to improve the security and transparency of their electronic voting procedures increasingly points to the need for the voter, primarily voters who are not specialists in technology, to be able to verify that their voting intention was recorded and counted correctly without running the risk of faults caused by errors, which unfortunately are present in fully electronic voting.

Various studies regarding electronic voting have shown the need for there to be a physical auditing trail for individual votes, in which the voter, simply with his eyes, can have guarantees that his vote will not

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have any possibility of being corrupted or diverted, and thus, he will be certain that it will be added to the final election results.

In this context, in 2000 there arose, in the post-doctoral thesis proposed by Ph.D. Rebecca Mercuri, titled "Electronic Vote Tabulation – Checks & Balances," the concept of "Voter-verified Paper Audit Trail (VVPAT)" and "Verified Paper Record (VPR)" which, in summary, discusses the importance of the existence of a paper audit that will allow recounting of votes in an electronic election, when such action is necessary.

In 2006, Ph.D. in cryptography, Ronald Rivest, along with a researcher from the U.S. National Institute for Standards and Technology, John Wack, imagined the concept of "software independence" for electronic voting processes. These scientists claimed that "*a voting system is independent of software when an imperceptible change or error in the programming of voting systems does not cause a change or error, which are also imperceptible, in the result of the elections (our translation).*"

Also noteworthy is the technical standard that is being refined by the National Institute of Standards and Technology (NIST) and by the Election Assistance Commission of the United States of America, known as the "Voluntary Voting System Guidelines," which in their current version provide the following minimum requirements for the approval of voting equipment in that

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country (translated to Portuguese):

a – At least two vote records must be generated and one of them must be stored on media that cannot be modified by the (electronic) voting system, so that both records are not under the control of a single digital process:

b) - The voter must be trained to verify the equivalence of the two records of their vote before leaving the polling place;

c) The process of verifying voting records must be independent and at least one of them must be directly consultable by the voter;

d) The two records of a vote may have their equivalence verified afterwards by means of unique identifiers that allow records to be corrected.

In Brazil, Article 5 of Law No. 12,034/94 which amends the Political Parties Act (9,096/95), the Elections Act (9,504/97) and the Electoral Code (4,737/65), requiring the use of vote printing devices as of the 2014 elections, is noteworthy.

The article was suspended by protective order issued in Direct Action for Unconstitutionality (ADI) No. 4547 filed with the Federal Supreme Court by the Office of the Attorney General of the Union. The action questioned the printed vote described in the law that, in theory, strikes at the right to secrecy regarding electors' votes.

In light of this scenario, it is considered that a Brazilian electronic urn came to not comply with current legislation, as well as the basic requirements

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of the North American standards, since it was a collector and counter of votes of the DRE (direct-recording electronic) type, characterized by direct electronic recording without printing the vote for verification by the voter.

OBJECT OF THE PATENT

The equipment that is the object of this patent application has as its objective precisely the expansion of the security of the electoral process as a whole and it was conceived in a form where the voting ballots printed by the devices would be handled solely and exclusively by the voter himself, thus reducing the range of possibilities for voter fraud that primarily occurred in the counting of paper ballots.

Accordingly, the model proposed was organized based on a verification ballot, with the vote written in text and a second record of the vote in a two-dimensional bar code, an information encoding technology for bar graphics, the license for use of which is royalty-free.

The vote in text form produced for the ballot will be generated by an electronic vote recording device (Direct Recording Electronic – DRE) that can even be the actual urn in use today, which will be connected, via a USB port, to the VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT.

The system will make it possible for the user to vote electronically which, after it is completed, will generate the printed vote, providing the voter with assurance of their choice and preventing equipment failure from being able to

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change the vote cast digitally.

Explained in a superficial manner, the two pieces of equipment and the corresponding systems are further detailed via the attached drawings, in which we see:

Figure 1 – shows, on the left, the VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT, connected to a Tablet, and on the right, the same equipment connected to an electronic Urn;

Figure 2 – shows the VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT and, on the side, expanded details of the biometric readers;

Figure 3 – shows, in expanded detail, the interfaces of the VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT;

Figure 4 – shows the verification vote ballot, with its digital codes;

Figure 5 – shows the independent urn being connected to the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS;

Figure 6 – shows the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS;

Figure 7 – shows the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS. The details show the packaging devices, with highlights;

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Figure 8 – shows the sealed ballots, forming a block controlled using RFID technology.

In accordance with the attached drawings, the "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT," one of the pieces of equipment that is the object of this patent application, is a piece of equipment (1) surrounded by a voting cubicle (C) and that may be connected to an electronic urn (U), as is shown in Figure 1, said equipment (1) being in the form of a computer with a reversible keyboard and touch-sensitive screen ("touch screen") or a "tablet" (2) with an earphone (F), connected to a camera (3) with the ability to carry out biometric recognition of the voter's face and connected to a mechanical keyboard (T) repurposed in the process of recycling the urns.

The equipment (1) has a bench on which there is installed a four-finger biometric reader (4), a storage area for blank ballots (5) connected to the printer (6), supplied also by a roll of paper (7), both of which connect to a printer output (8). The bench also has an input (9) for verifying and collecting printed vote ballots confirmed by the voter, in addition to an input (10) for verifying and cutting up any printed vote ballot rejected (voided) by the voter.

The verification input for printed vote ballots confirmed by the voter (9) is connected to an independent collection urn (11) for ballots confirmed and verified by the system, while the input

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for verification and cutting up the printed ballot rejected by the voter (10) is connected to a recycling bin (12) to receive the fragments of these printed ballots that are rejected by the voters, thus constituting a piece of equipment (1) itself, as shown in Figures 1, 2 and 3.

The verification ballot printing and collection equipment (1) is supplemented by a second "tablet" (13), on which software developed by an elections process auditing entity is installed, containing the public codes for the equipment. This equipment (13) will be used by the voter for electronic verification of the printed vote in a two-dimensional bar code, enabling the voter to leave the polling station after comparing the two printed records of their vote, one in text and the other in a two-dimensional bar code.

Thus constituted, the equipment (1), integrated with the free software to be developed, will be used as the voting station for a previously unknown system for collecting the electronic vote and the vote printed on paper, with double biometric identification operated by the voter.

The voter positions four fingers on his right hand on the biometric identification reader (4), and the equipment (1) then collects the biometric data and sends a digitally signed request to the electronic voting system installed on the computer of tablet (2).

Facing the equipment (1), the voter is also identified via the camera (3) which will perform biometric recognition of their face.

Once the double biometric identification of the voter is completed, he will have

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access to the voting interface, or in the case of an illiterate voter designated in advance, direct access to the specially developed interface for illiterate voters.

Using the corresponding button on the screen (2), or via the repurposed mechanical keyboard from the Electronic Urn (T), the voter chooses his candidates, displaying the respective photographs and other possible information. The candidate photograph is displayed on the referenced screen (2) in order for the voter to recognize his choice and confirm the digital vote.

Once collection of the electronic vote is complete, the voter authorizes, using the screen (2) or the mechanical keyboard (T), the printing of a verification ballot (14) that will be issued at the printer output (8).

The verification ballot (14) for the vote, shown in Figure 4, will show the choices of the voter for each office being contested in that election and/or ballot measure, stated in sufficiently legible text. The ballot (14) will also show the complete vote by the voter encoded in a two-dimensional bar code, which will also contain the digital signatures of the Elections Judge and the other institution auditing the process (15).

Two other bar codes (16) and (17), that are smaller in size and have reduced storage capacity, will be printed on the ballot (14) and will each provide a digital signature, in this case related to the text of the vote printed on the ballot (14), produced by the Elections Judge and by another entity auditing the process, respectively. The ballot (14) will also contain an electronic code in Braille (18) for voters with a visual disability.

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With the printed verification ballot (14) in hand, the voter may also visually compare the vote encoded in bars on the second tablet (13), which will read the code and display the record of the encoded vote on the screen.

After confirming that the text and the record of the code are each conveying their political intent, the voter inserts the ballot (14) into the input for confirmation of votes (9).

The equipment (1) then reads, electronically, the bar code(s) (16) or (17) and (18) on this ballot (14), extracting the digital institutional signatures.

Once it is confirmed that the signature was generated by the private code issued for the digital institutional signature, i.e. after confirmation of the electronic provenance of the ballot (14), the ballot is drawn in by the mechanical vote confirmation input device (9) and stored at random in the independent collection urn (11). This verification of signatures will avoid the equipment being fed with ballots not generated in an official manner.

Once the vote collection process is complete, the equipment (1) sends a digital signal to the electoral system to record the digital record of the vote and shut off the possibility of another vote for that voter. In this manner, the vote is counted in a normal manner.

If the voter does not agree with the printed ballot (14) of their vote, withdrawing or believing that they made a mistake or with the intention of correcting the vote,

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the voter will insert the referenced ballot (14) into the input (10) for verification and cutting up the printed vote being rejected and, after the equipment (1) confirms the signature produced by the private code of the institutions and once the provenance of the ballot (14) is confirmed, it is then drawn in and shredded and the paper waste will be stored in the recycling bin (12), sending a signal to the voting system installed on the equipment computer (1) to cancel the digital vote and relaunch the voter identification process, returning the entire voting process to the initial stage.

In this manner it is possible for the voter himself to correct the printed vote. In this case, the rejected vote is not counted in the system database, avoiding an erroneous count upon conclusion of voting and allowing the voter to have another chance or option to vote, without contaminating the entire process with ballots rejected by the voters.

If the voter is illiterate, they may vote using images of persons with a two dimensional bar code distributed by the candidates in advance.

After double biometric identification, the illiterate voter holding this advertising material printed by the candidates with a two-dimensional bar code inserts the image into the shredder verifier input (10), displaying the photo of their candidate on the screen (2), repeating the action until the end of the process, when the verification ballot (14) will be printed to be immediately confirmed by the illiterate voter, who

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must be instructed to insert the vote ballot (14) into the vote confirmation input (9).

The same procedure for reading images may be used to assist voters with a visual disability in the voting process. However, unlike confirming the vote presented on the screen (2), the visually disabled voter will confirm their vote using an earphone (F), which will pass on the instructions for operating the equipment (1) to confirm their vote, instructing the disabled voter through completing the digital voting process and submitting the printed vote, which will also be transcribed in Braille (18) on the collection verifying interface (9). The visually disabled voter may also enter their vote via the mechanical keyboard (T), which is connected to the equipment (1).

In all situations in which the printed vote is confirmed, the voter may, upon completion of the process, print a voucher of presentation from the roll of paper (7) installed on the lower part of the equipment (1), which will be supplied via the printer output (8).

As may be observed, the proposed system eliminates the elections judge.

After voting concludes, the independent collection urn (11) for confirmed ballots, i.e. confirmed votes, is then taken from the voting equipment (1) and taken to the vote auditing, counting and tabulating area, as shown in Figure 5.

In this other area, the independent collection urn (11) holding

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confirmed votes is connected, as shown in Figure 5, to the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS (19), at which point the vote counting and auditing process is then started.

This equipment (19), also the object of the present patent, as is shown in particular by Figures 6 and 7 and also by Figure 5, comprises, on one of its sides, an input (20) for the independent collection urn (11), an RFID read/record device (21) and an input for the audited ballots (22). On the other side it has a printer (23) and LCD monitor (24), repurposed from the Electronic Urns.

On the interior, the equipment (19) has an optical OCR and QR code reader and a CPU (25) and packaging devices (26), connected, on the other side, to an output (27) for the packaged ballots that will receive RFID identification to be applied by the labeler (28).

The equipment (19) will be supplied with the information conveyed to the independent storage urn (11), or by the printed verification ballots (14) with a seal, in an auditing process, with various tasks carried out in the same mechanically automated routine.

If the seal of the independent collection urn (11) for confirmation of the vote shows signs of tampering, the equipment (19) will emit an audible warning and a text message on the LCD, and the referenced independent collection urn (11) will be returned to the counting committee, which will decide whether or not to proceed to count it.

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The first function of the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS (19) is to receive the independent collection urn (11) through the input (20) and verify the provenance of the seal on the independent collection urn (11) using the radio frequency device (21) and, once the correspondence of the chip and the polling station is confirmed, the printed votes are automatically taken from the referenced independent collection urn (11).

The ballots (14) are then fed through the optical reader (25), which will read the bar codes (16), (17) or (18), extracting and verifying the digital signatures, and comparing the text vote information to the vote information encoded into the bar code.

After a comparative audit, the printed vote is then recorded electronically and sent to a module (26) where, along with the other ballots (14) from the polling station being tabulated, they will be stored. Once the counting of all the votes is completed, the ballots will be sealed in plastic and sent to the output (27), forming a paper block (29), as is shown in Figure 8, which will receive a radio frequency chip in the labeler (28), thus completing the auditing and electronic tabulating of the printed ballots.

The audit process vote input (22) will receive the ballots that require a further inspection process. The procedure for counting audited ballots is similar to the procedure for collected ballots, differing only in the origin of the radio frequency

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identification, i.e. instead of reading the RFID seal of the independent urn, the interface will read an RFID identifier of a block of cells where the need for a more advanced audit is determined.

For security purposes, the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS (19) is separated from the input device, and has only the disk storing the programs to control the mechatronic motors and to interpret, audit and count the votes printed.

Reports, alerts and the total count bulletin will all be generated in text and two-dimensional bar code format using the printer and they will be recorded in the machine's print log.

The objective is that this second piece of equipment according to the present patent will be manufactured using electronic components such as processors, memory, a printer, an LCD screen and the repurposed plastic components from the recycling of the current electronic urns, which will be replaced by computers or tablets in the course of the process of installing the new electronic and mechanical voting equipment that is the subject of this patent.

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CLAIMS

1) "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT," being a piece of equipment (1) surrounded by a voting cubicle (C) that may be connected to an electronic urn (U), **characterized** by a computer configuration with a reversible keyboard with a touch screen or tablet (2), an earphone (F), a camera (3) for biometric facial recognition of the voter and connected to a mechanical keyboard (T), which equipment (1) is equipped, as well, with a bench with a four-finger biometric reader (4), a storage area for blank ballots (5) connected to a printer (6) supplied by a roll of paper (7), both connected to a printer output (8), with said bench having, as well, an input (9) for verifying and collecting the printed vote ballots confirmed by the voter, in addition to an input (10) for verifying and cutting up the printed ballot rejected (voided) by the voter, with the referenced input (9) connected to an independent collection urn (11) for ballots confirmed and verified by the system and, the input (10) connected to a recycling bin (12) that receives the fragments of the printed ballots rejected by the voters, with said piece of equipment (1) supplemented by a second tablet (13), loaded with software developed by an electoral process auditing entity, containing the public codes for the equipment, for electronic verification (by the voter), of the vote printed in a two-dimensional bar code.

2) "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT,"

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according to Claim 1, the equipment (1) for use as a polling station, to form a system **characterized** by the collection of electronic votes and votes printed on paper, with dual biometric identification, operated by the voter himself.

3) "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT," according to Claim 2, **characterized by the fact that**, after the voter operates the keyboard, a printed ballot (14) is generated (3) with the complete vote encoded in a two-dimensional bar code, with digital signatures of the Elections Judge and the other institution auditing the process (15), in addition to bar codes (16) and (17), of a smaller size and reduced storage capacity, and furthermore, an electronic code in Braille (18).

4) "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT," according to Claim 2, for electronic comparison by the equipment (1) and also by the second tablet (13), **characterized by the fact that** a ballot (14) is inserted into the vote confirmation input (9) and stored in random form in the independent collection urn (11), with delivery of a digital signal for the election system to record the digital record of the vote.

5) "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT," according to Claim 2, in the event of a correction to a vote, **characterized** by the insertion of the ballot (14) into the input (10) to be shredded and delivery of a digital signal to the election system, to

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cancel the vote, without it being counted, and to restart the voting process.

6) "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT," according to Claim 2, in the case of an illiterate reader, **characterized** by the use of images with a two-dimensional bar code with double biometric identification, following insertion into the input (10) for verification and shredding, displaying the photo of the voter's candidate on the screen (2), repeating the operation until the process is completed, to print the ballot (14) and for confirmation via the vote confirmation input (9).

7) "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT," according to Claim 2, in the case of voters with a visual disability, **characterized** by the casting of a vote via images with bar codes or using a mechanical keyboard (T), and confirmation of the vote via an earphone (F), by entering the ballot (14) with the vote transcribed in Braille (18) at the collection input (9) or the shredding input (10).

8) "VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT" according to Claim 2, after the generation of a vote voucher from the printer output (8), **characterized** by the independent collection urn (11) with ballots (14) stored, being removed and placed at the input (20) of the EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON

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VERIFICATION BALLOTS also equipped with an RFID reader/encoder (21), input for audited ballots (22) having, on the side, a printer (23) and LCD monitor (24) and, inside, an optical OCR and QR code reader and a CPU (25) and packaging devices (26), connected, on the other side, to an output (27) for the packaged ballots, able to receive RFID identification via a labelling device (28).

9) "EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS," according to Claims 2 and 8, forming a system **characterized** by reading the information provided in the independent collection urn (11) via a radio frequency device (21) and, if there are signs of tampering, having an audible warning emitted and a text warning displayed on the LCD, for reassessment.

10) "EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS," according to Claim 9, **characterized** by reading bar codes (16), (17) or (18), and electronic counting of ballots (14), stored in the module (26), followed by sealing, forming a block (29) ejected at the output (27), that receives a radio frequency chip at the labeler (28), used as a polling station, to form a system **characterized** by the collection of electronic votes and votes printed on paper, with double biometric identification, operated by the voter himself.

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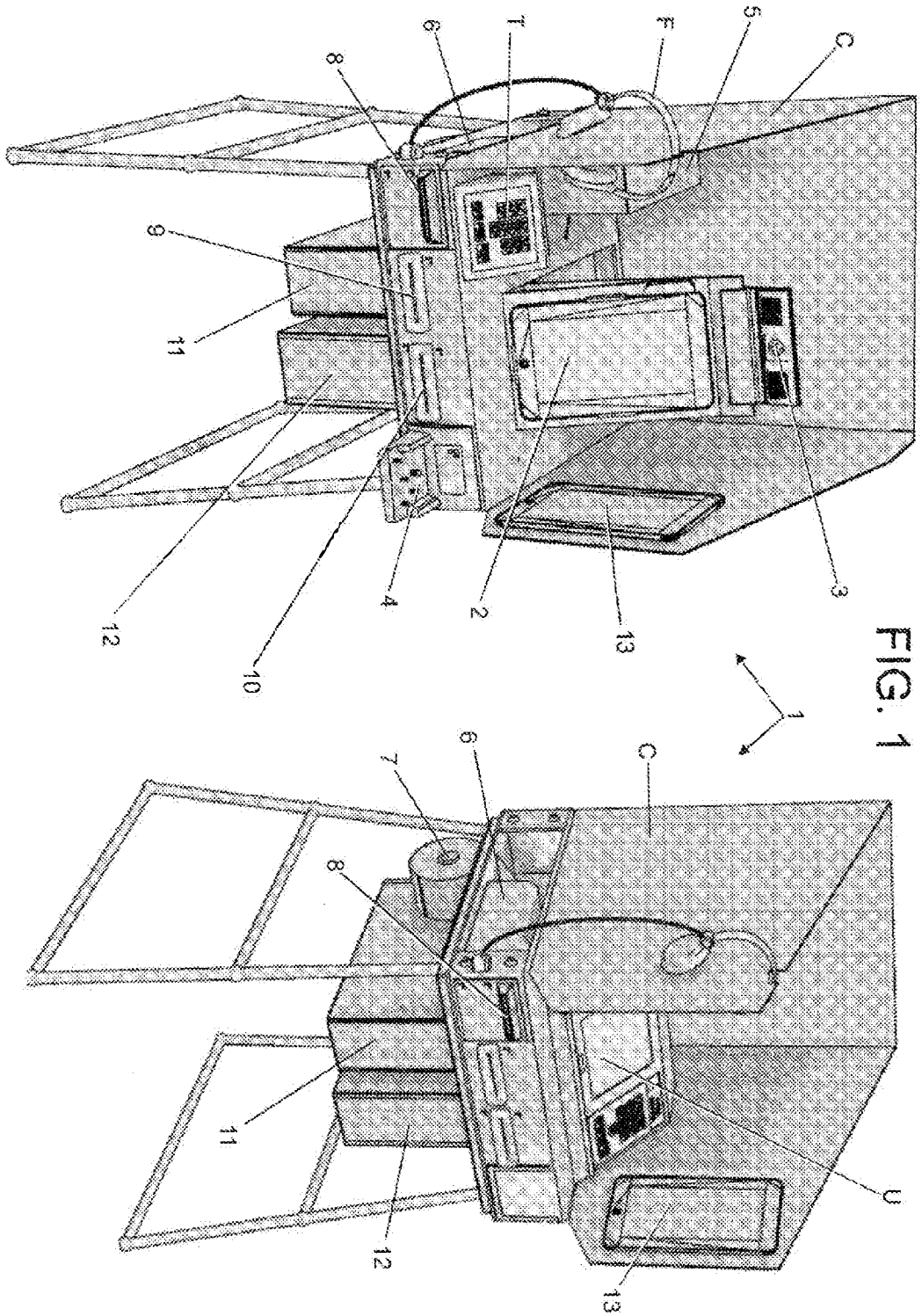


FIG. 1

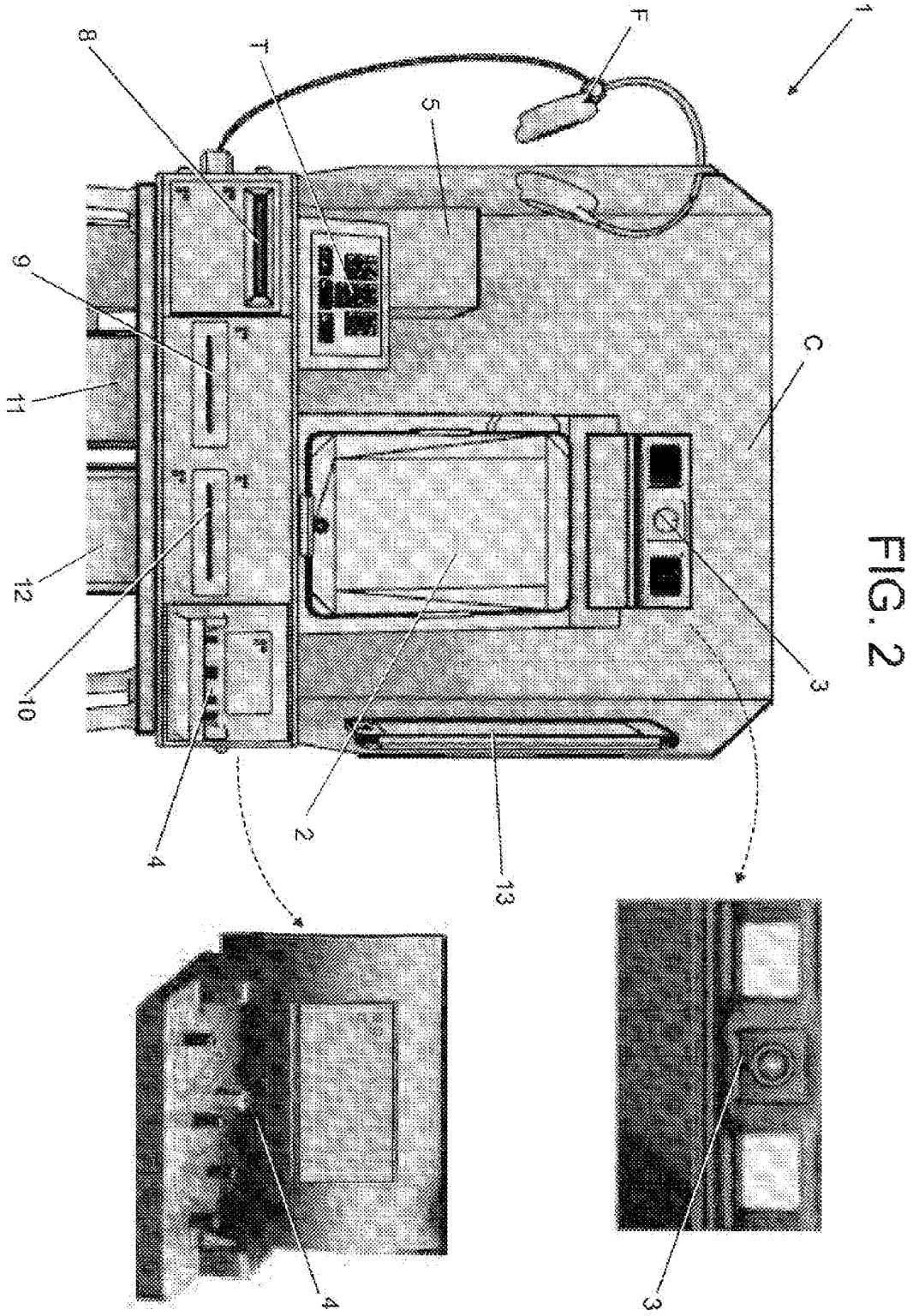


FIG. 2

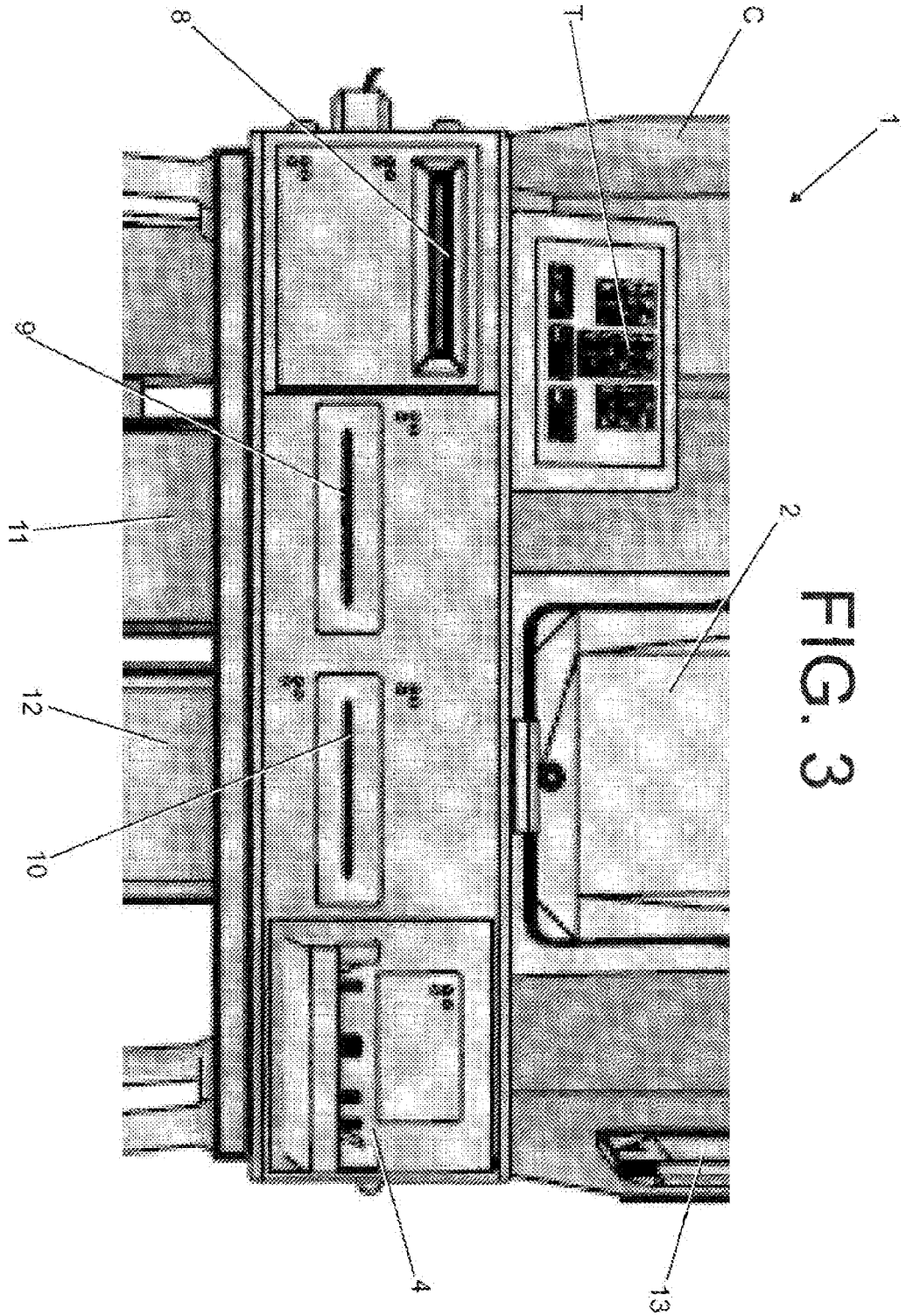


FIG. 3

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FIG. 4

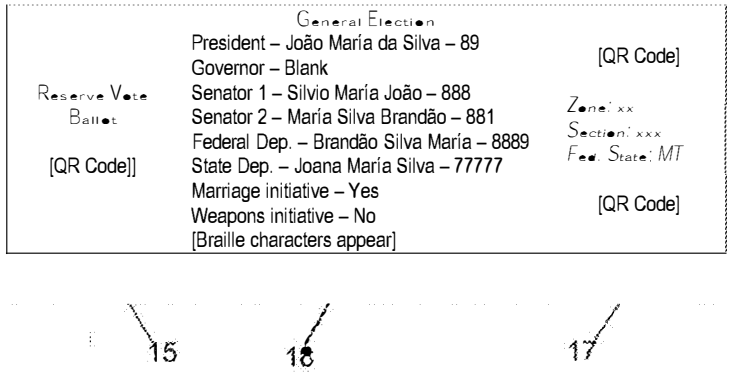
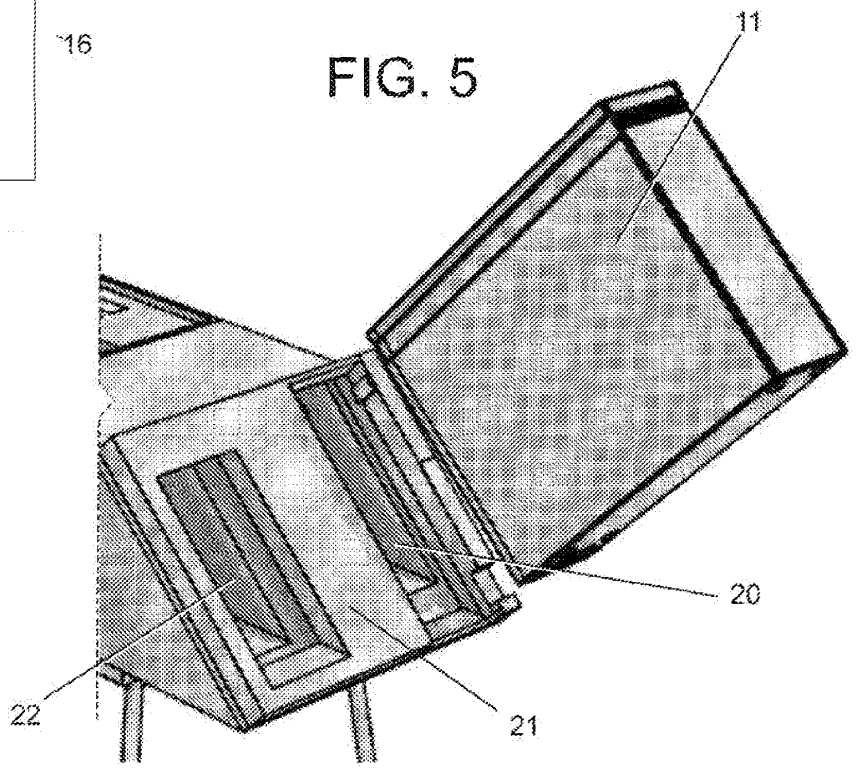


FIG. 5



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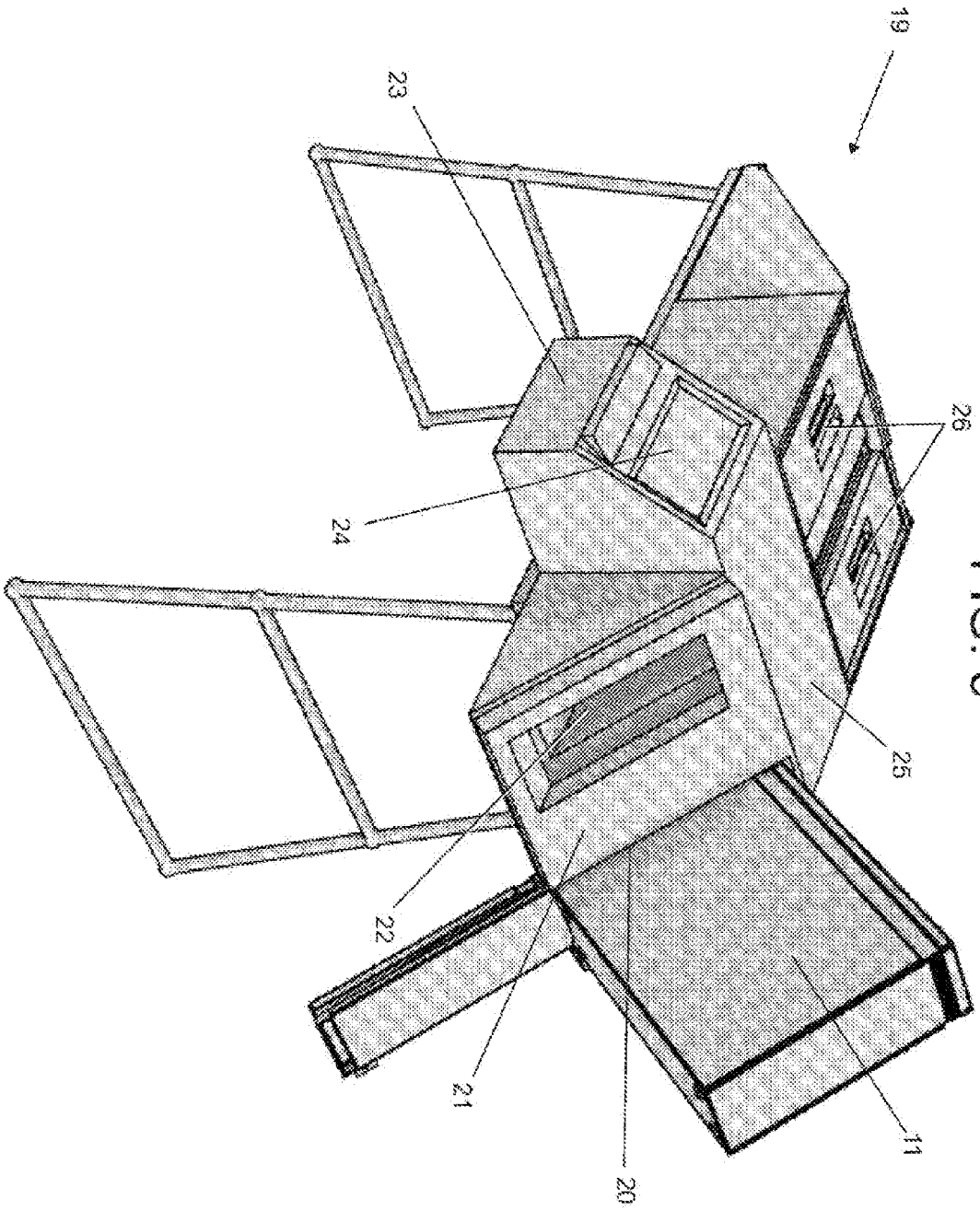


FIG. 6

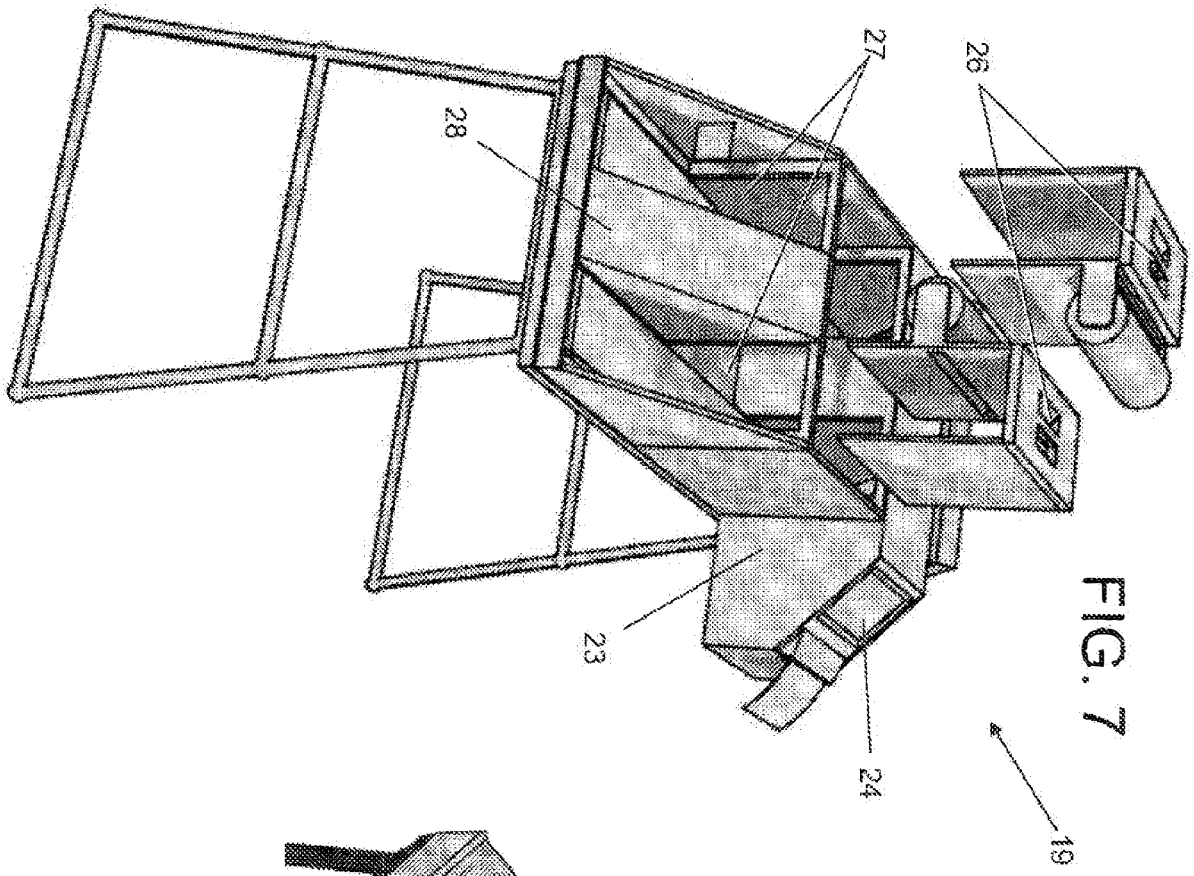


FIG. 7

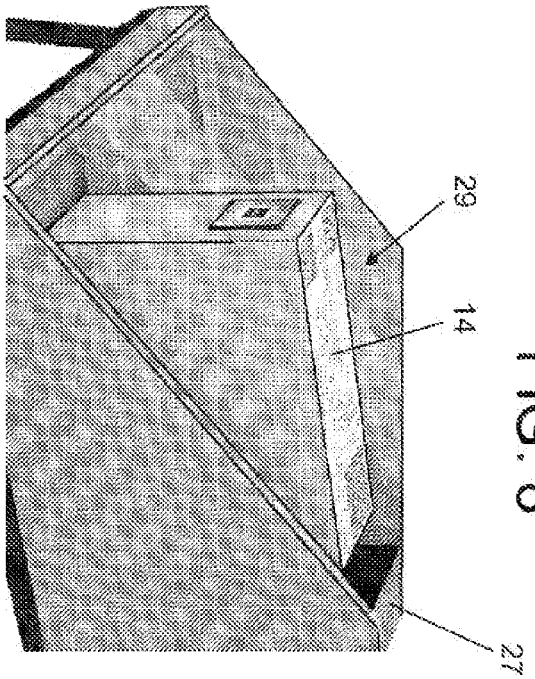


FIG. 8

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ABSTRACT

VERIFICATION BALLOT PRINTING AND COLLECTION EQUIPMENT AND EQUIPMENT FOR AUDITING AND COUNTING VOTES PRINTED ON VERIFICATION BALLOTS FOR A MECHATRONIC VOTING MODEL, wherein equipment (1) forms a system that allows the voter to vote and obtain a printed ballot (14) confirming the electronic vote and the printout, via bar codes (15), (16), (17) and (18) printed thereon. This ballot (13) is transferred to a second piece of equipment (19), for counting votes, where such information will be read, forming a fully interoperating electronic and printed storage system that is able to be audited in the event of questions regarding fraud, providing complete security to the voting system.

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Project Number: O-106910

Location in source file:	Term/exact sentence:	Description of the issue:	Action item:
Page 5 of the description	"o sistema de votação é independe de software…"	The original quote in English is: "A voting system is software-independent if an undetected change or error in its software cannot cause an undetectable change or error in an election outcome."	Translated per source
Page 3 of the claims, claim 6	"em caso de leitor de analfabeto"	Apparent typo for voter ("eleitor" vs. "leitor" in Portuguese).	Translated per source

Exhibit B

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República Federativa do Brasil
Ministério do Desenvolvimento, Indústria e do Comércio Exterior
Instituto Nacional da Propriedade Industrial

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G06Q 50/00

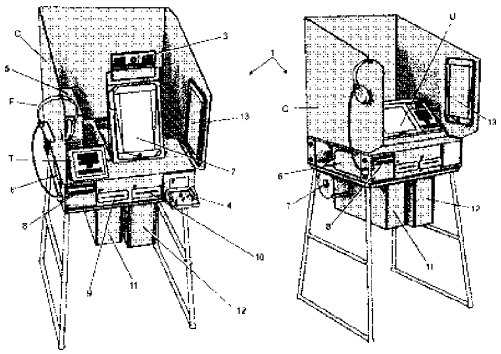
(54) Título: EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA

(73) Titular(es): Ronaldo Moises Nadaf

(72) Inventor(es): Ronaldo Moises Nadaf

(74) Procurador(es): MODAL MARCAS E PATENTES LTDA

(57) Resumo: EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA", onde um equipamento (1) forma um sistema que possibilita ao próprio eleitor, votar e obter uma cédula de impressão (14) pela qual serão confirmados, o voto eletrônico e a impressão, através de códigos de barra (15), (16), (17) e (18) nela gravados. Tal cédula (13) é transferida para um segundo equipamento (19), de apuração de votos, onde tais informações serão lidas, formando um sistema de armazenamento eletrônico e impresso, em total interação e passível de ser auditado, caso hajam dúvidas em relação a fraudes, trazendo total segurança ao sistema eleitoral.



"EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA"

Refere-se o presente pedido de patente de invenção para um conjunto de equipamentos que irão garantir a qualquer cidadão a votação eletrônica combinada à possibilidade de conferir o registro fiel de sua intenção política, utilizando cédulas de votação em papel como mecanismo de auditoria e segurança do voto individual.

Este conjunto de equipamentos vai trazer o voto impresso em cédulas de papel ao processo eleitoral, porém, com outro nível de segurança, onde a cédula impressa com o voto do cidadão será manuseada tão somente pelo eleitor votante.

O primeiro equipamento, denominado EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO, vai permitir, além da impressão do voto, ampliar a segurança da identificação do eleitor, pois tem como objetivo a utilização de um processo com o duplo reconhecimento biométrico do eleitor, onde serão verificadas, além das impressões digitais de 4 dedos da mão, um reconhecimento biométrico da face.

A cédula de votação produzida nesse novo contexto tecnológico trará a impressão de no mínimo 2 registros do voto individual, sendo o primeiro registro em texto, produzido pelos sistemas digitais do

equipamento de voto digital, incluindo as urnas eletrônicas hoje em uso, e um segundo registro do voto, que será gerado pelo EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO, objeto desta patente, dito voto impresso, na mesma cédula, em códigos de barras bidimensional, ampliando ainda mais a segurança, a transparência e os mecanismos de auditoria do processo de geração e coleta dos votos.

Além dos dois registros do voto individual, um em texto e outro em código de barras, a cédula impressa trará mais dois registros em código de barras bidimensional que armazenarão as assinaturas digitais da Justiça Eleitoral e de outra instituição responsável pela auditoria do processo.

Essas assinaturas digitais serão produzidas por criptografia assimétrica de algoritmo ECDSA(Eliptic Curve Digital Signature Algorithm), com par de chaves de tamanho mínimo de 283 bit. O processo de assinatura do voto se dará pelas chaves privadas das instituições, que estarão instaladas no EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO e no computador coletor de votos, garantindo procedência institucional ao voto impresso, sem violar o sigilo do mesmo.

Um segundo equipamento presente neste pedido de patente de invenção, denominado EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, será responsável por controlar o recebimento da urna armazenadora de votos impressos, urna esta que terá a segurança física mantida por um lacre com

tecnologia de radio frequência.

Este equipamento, além de fazer um controle dos lacres radio frequência, vai auditar os votos impressos coletados pela urna, comparando o registro em texto às informações contidas nos códigos de barras bidimensionais, verificando as assinaturas digitais através das respectivas chaves públicas geradas para os equipamentos coletores de voto, confirmando a procedência institucional e integridade do conteúdo do voto impresso.

Somente depois de auditado, o voto impresso será validado para o escrutínio, e voltará a ser contabilizado de forma eletrônica a outros votos da seção eleitoral em um sistema simplificado de contabilidade de votos instalado também no EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA.

Esta máquina também será responsável pela embalagem das cédulas impressas coletadas em uma seção eleitoral, que sairão deste segundo equipamento, somadas e lacradas num invólucro plástico com outro chip de tecnologia radio frequência, dando inicio ao processo de armazenamento e auditoria controlado por esta tecnologia.

ESTADO DA TÉCNICA

Como é sabido historicamente, existem traumas culturais provocados pelo período em que o país realizava suas eleições em cédula de papel.

Muitas foram as fraudes ocorridas nesse longo período passado,

como por exemplo o "voto carreirinha", quando um primeiro eleitor conseguia sair com a cédula virgem da sessão eleitoral, repassava para um corruptor que preenchia a cédula com o nome do seu candidato e entregava-a a um outro eleitor que inseria a cédula pré preenchida e repetia a operação de retirada de cédula virgem, fazendo assim um ciclo seguro, e evidentemente ilegal, para desvios de voto.

Registros de falsificação, adulteração, extravio de cédulas fazem parte de um tempo distante pois foram eficientemente extintos com o atual modelo eletrônico de votação. Portanto, a população em geral e também a classe política não acreditam na real necessidade da impressão do voto em papel.

No entanto aderem, de forma temerosa, ao voto totalmente eletrônico. Tal afirmação deve-se ao fato de que pesquisas científicas desenvolvidas por diferentes países que buscam melhorar a segurança e a transparência dos seus processos eletrônicos de votação, apontam, cada vez mais, para a necessidade de o eleitor, principalmente o eleitor leigo em tecnologia, ter a possibilidade de verificar se sua intenção de voto foi registrada e contabilizada corretamente sem correr riscos de extravios ocasionados por erros, que infelizmente estão presentes na votação totalmente eletrônica.

Diferentes estudos sobre voto eletrônico revelam a necessidade de existir uma trilha de auditoria física do voto individual, onde o eleitor, apenas com os olhos, possa ter garantias de que seu voto não sofrerá

qualquer possibilidade de adulteração ou extravio e assim, tendo certeza de que será somado ao resultado final da eleição.

Nesse contexto, surgiu no ano de 2.000, na tese de pós-doutorado proposta pela Ph.D. Rebecca Mercuri, intitulada "Electronic Vote Tabulation – Checks & Balances", o conceito "Voter-verified Paper Audit Trail (VVPAT)" e "Verified Paper Record (VPR)" que, em síntese, discorre sobre a importância da existência de auditoria em papel que venha permitir a recontagem dos votos de uma eleição eletrônica, quando assim for necessária.

Em 2006, o Ph.D. em criptologia Ronald Rivest, juntamente com o pesquisador do Instituto Nacional de Padrões e Tecnologia dos Estados Unidos, John Wack, idealizou o conceito "software independece" para os processos de votação eletrônica. Estes cientistas defendem que *"o sistema de votação é independe de software quando uma alteração ou um erro imperceptível na programação dos sistemas de votação não provoca uma alteração ou erro, também imperceptíveis, no resultado das eleições (tradução nossa)"*.

Destaca-se também a norma técnica que está sendo aprimorada pelo Instituto de padrões e tecnologia (National Institute of Strandars and Technology - NIST) e pela Comissão de Assistência Eleitoral dos Estados Unidos da América, conhecida como "Voluntary Voting System Guidelines" que traz no rascunho da versão mais atual os seguintes requisitos mínimos para homologação de equipamentos de votação naquele

país (traduzidos para o português):

a - Ao menos dois registros do voto devem ser produzidos e um deles deve ser guardado em meio que não possa ser modificado pelo sistema (eletrônico) de votação, de forma que ambos os registros não estejam sob controle de um único processo digital;

b) - O eleitor deve estar capacitado para verificar a igualdade dos dois registros do seu voto antes de deixar o local de votação;

c) ● processo de verificação dos registros do voto deve ser independente e ao menos um deles deve ser conferível diretamente pelo eleitor;

d) Os dois registros de um voto poderão ter sua consistência verificada posteriormente por meio de identificadores únicos que permitam a correlação dos registros.

No Brasil, destaca-se o artigo 5º da Lei Nº 12.034/94, que altera a Lei dos Partidos Políticos (9.096/95), a Lei das Eleições (9.504/97) e o Código Eleitoral (4.737/65), que obriga o uso de dispositivos de impressão do voto a partir das eleições de 2014.

● artigo está suspenso por decisão liminar proferida na Ação Direta de Inconstitucionalidade nº 4547 interposta no Supremo Tribunal Federal pela Procuradoria Geral da União. A ação questiona o voto impresso descrito na lei que, em tese, fere o direito ao sigilo do voto do eleitor.

Diante desse cenário, percebe-se que a urna eletrônica brasileira passou a não atender a legislação vigente, bem como os requisitos básicos

da norma norte-americana, por ser um coletor e apurador de votos do tipo *DRE* (de Direct Recording Electronic), caracterizada pela gravação eletrônica direta sem impressão do voto para conferência do eleitor.

OBJETIVO DA PATENTE

Os equipamentos, objetos desse presente pedido de patente de invenção, têm como objetivo exatamente a ampliação da segurança do processo eleitoral como um todo e foram pensados de uma forma onde as cédulas de votação impressas nos dispositivos serão manuseadas apenas e tão somente pelo próprio eleitor, reduzindo assim o leque de possibilidades de fraudes eleitorais que aconteciam principalmente no ato de apuração das cédulas de papel.

Para tanto, o modelo proposto é composto a partir de uma cédula de segurança, com o voto em texto e um segundo registro do voto em código de barras bidimensional, uma tecnologia de codificação de informações para gráfico de barras cuja licença de uso é livre de royalties.

O voto em texto produzido para a cédula será gerada em um dispositivo de registro eletrônico do voto (Direct Recording Electronic - DRE), que inclusive poder ser a própria urna eletrônica hoje em uso, que será conectada, através de porta USB, ao EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO.

Através do sistema, será possibilitado ao usuário a votação eletrônica que, após concluída, vai gerar o voto impresso, trazendo-lhe a certeza de sua escolha e impedindo que falhas nos equipamentos possam

extraviar o voto lançado de forma digital.

Explicado superficialmente, passam os dois equipamentos e os sistemas que os envolvem a serem melhor detalhados através dos desenhos anexos, pelos quais se vêem:

Figura 1 – mostra, à esquerda, o EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO conectado à um Tablet e, à direita, o mesmo equipamento conectado à Urna eletrônica;

Figura 2 – mostra o EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO e, ao lado, detalhes ampliados dos leitores biométricos;

Figura 3 – mostra, em detalhe ampliado, as interfaces do EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO;

Figura 4 - mostra a cédula de segurança do voto, com seus códigos digitais;

Figura 5 – mostra a urna independente sendo acoplada no EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA;

Figura 6 – mostra o EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA;

Figura 7 - mostra o EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA. Nos detalhes, destacados, os dispositivos embaladores;

Figura 8 – mostra as cédulas lacradas, formando um bloco controlado por tecnologia RFID.

Em conformidade com os desenhos anexos, o "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", um dos equipamentos objeto desse presente pedido de patente de invenção, constitui-se de um equipamento (1) envolto por cabine de votação (C) e que pode ser conectado à uma urna eletrônica (U), como mostra a figura 1, dito equipamento (1) em forma de computador com teclado reversível e tela sensível ao toque "touch screen" ou um "tablet" (2), com fone de ouvido (F), acoplado com câmera (3) com capacidade para realizar o reconhecimento biométrico da face do eleitor e conectado a um teclado mecânico (T) reaproveitado no processo de reciclagem das urnas.

O equipamento (1) possui uma bancada na qual é instalado um leitor biométrico de quatro dedos (4), um armazenador de cédulas virgens (5) conectado à sua impressora (6), alimentada também por bobina de papel (7), ambas comunicantes com uma saída (8) de impressora. A bancada possui também uma entrada (9) verificadora e coletora de cédulas impressas de voto confirmado pelo eleitor, além de uma entrada (10) verificadora e fragmentadora de cédula impressa porém rejeitada (anulada) pelo eleitor.

A entrada verificadora de cédulas impressas de voto confirmado pelo eleitor (9) é ligada à uma urna coletora independente (11) de cédulas confirmadas e verificadas pelo sistema, ao passo que a entrada

verificadora e fragmentadora de cédula impressa porém rejeitada pelo eleitor (10) é ligada à uma urna ecológica (12) receptora dos fragmentos dessas cédulas impressas porém rejeitadas pelos eleitores, formando assim o equipamento (1) propriamente dito, como mostram as figuras 1, 2 e 3.

O equipamento (1) de impressão e coleta de cédulas de segurança do voto é completado por um segundo "tablet" (13), onde estará instalado um software desenvolvido por uma entidade auditora do processo eleitoral, contendo as chaves públicas dos equipamentos. Este equipamento (13) será usado pelo eleitor para a verificação eletrônica do voto impresso em código de barras bidimensional, possibilitando que o mesmo saia da sessão eleitoral após conferir os dois registros impressos do seu voto, sendo um em texto e o outro em código de barras bidimensional.

Assim constituído, o equipamento (1), integrado com software livre a ser desenvolvido, será utilizado como mesa receptora de votos para um inédito sistema de coleta do voto eletrônico e do voto impresso em papel, com dupla identificação biométrica acionada pelo próprio eleitor.

O eleitor posiciona os quatro dedos da mão direita no leitor de identificação biométrica (4), quando o equipamento (1) faz então a coleta dos dados biométricos e envia uma solicitação assinada digitalmente para o sistema eletrônico de votação instalado no computador ou "tablet" (2).

Em frente ao equipamento (1), o eleitor também é identificado através da câmera (3) que fará o reconhecimento biométrico da face.

Concluída a dupla identificação biométrica do eleitor, ele terá

acesso à interface de votação ou, no caso do eleitor analfabeto identificado previamente, acesso direto à interface especialmente desenvolvida para os eleitores sem instrução.

Através da tecla correspondente da tela (2), ou através do teclado mecânico reaproveitado da Urna Eletrônica (T), o eleitor escolhe seus candidatos, expondo as respectivas fotografias e demais informações possíveis. A fotografia do candidato é exposta na referida tela (2) para que o eleitor o reconheça sua escolha e confirme o voto digital.

Encerrada coleta do voto eletrônico, o eleitor autoriza, na tela (2) ou no teclado mecânico (T), a impressão de uma cédula de segurança (14) que será emitida pela saída (8) de impressora.

A cédula de segurança (14) do voto, mostrada pela figura 4, vai trazer as escolhas do eleitor para cada cargo em disputa naquela eleição e/ou plebiscito, explícitos em texto bastante legível. A cédula (14) também vai trazer o voto completo do eleitor codificado em código de barras bidimensional, que também vai conter assinaturas digitais da Justiça Eleitoral e de outra instituição auditora do processo (15).

Mais dois códigos de barras (16) e (17), de tamanho menor e capacidade de armazenamento reduzida, serão impressos na cédula (14) e trarão, cada um, uma assinatura digital, agora referente ao texto do voto impresso na cédula (14), produzidos pela Justiça Eleitoral e por outra entidade auditora do processo, respectivamente. A cédula (14) terá, ainda, código eletrônico em braile (18) para eleitor deficiente visual.

Com a cédula de segurança (14) impressa nas mãos, o eleitor poderá fazer a conferência também visual do voto codificado em barras no segundo "tablet" (13), que fará a leitura do código e exibirá na tela o registro do voto codificado.

Após confirmar que o texto e o registro do código estão, cada um, traduzindo sua intenção política, o eleitor insere a cédula (14) na entrada de confirmação de voto (9).

● equipamento (1) então lê, eletronicamente, o(s) código(s) de barras (16) ou (17) e (18) dessa cédula (14), extraindo as assinaturas digitais institucionais.

Confirmado que aquela assinatura foi gerada pela chave privada emitida para a assinatura digital institucional, ou seja, após confirmada a procedência eletrônica da cédula (14), a mesma é sugada pelo dispositivo mecânico da entrada de confirmação de voto (9) e armazenada de forma aleatória na urna coletora independente (11). Essa verificação da assinatura evitará que o equipamento seja alimentado por cédulas não produzidas oficialmente.

Concluída a operação de coleta de voto, o equipamento (1) envia sinal digital para o sistema eleitoral gravar o registro digital do voto e encerrar a possiblidade de um novo voto para aquele eleitor. Dessa forma é computado normalmente o voto.

Caso o eleitor não concorde com a cédula impressa (14) do voto, desistindo ou percebendo que se enganou e pretendendo corrigir esse voto,

o eleitor vai inserir a referida cédula (14) na entrada (10) verificadora e fragmentadora de voto impresso rejeitado e, após o equipamento (1) confirmar a assinatura produzida pela chave privada das instituições e confirmada a procedência da cédula (14), a mesma é então sugada e triturada e os dejetos de papel serão armazenados na urna ecológica (12), enviando um sinal para o sistema eleitoral instalado no computador do equipamento (1) cancelar o voto digital e reiniciar o processo de identificação do eleitor, retornando todo o processo de votação ao estágio inicial.

Com isso é possibilitada a correção do voto impresso pelo próprio eleitor. Nesse caso, o voto rejeitado não é computado no banco de dados do sistema, evitando contagem errada ao final da votação e permitindo que o eleitor tenha nova chance ou opção de votar, sem contaminar todo o processo com cédulas rejeitadas pelos eleitores.

Caso o eleitor seja analfabeto, o mesmo poderá votar utilizando santinhos com código de barras bidimensional previamente distribuídos pelos candidatos.

Após a dupla identificação biométrica, o eleitor analfabeto em posse desse material publicitário impresso pelos candidatos com código de barras bidimensional, vai inserir o santinho na entrada (10) verificadora trituradora, visualizando a foto de seu candidato na tela (2), repetindo a operação até o final do processo, quando será impressa a cédula (14) de segurança a ser confirmada imediatamente pelo eleitor sem instrução, que

devera ser orientado a inserir a cédula (14) do voto na entrada de confirmação de voto (9).

O mesmo procedimento de leitura de santinhos poderá ser utilizado para auxilio ao voto dos eleitores com deficiência visual, porém, ao invés de confirmar o voto apresentado na tela (2), o eleitor deficiente visual confirmará seu voto digital através de um fone de ouvido (F), que repassará as instruções de manuseio do equipamento (1) para confirmação do voto, instruindo o eleitor deficiente até o completo processo do voto digital e destinação do voto impresso, que também será transcrito pelo código em Braille (18), na interface verificadora coletora (9). O eleitor deficiente visual também poderá inserir o voto através do teclado mecânico (T), que está conectado ao equipamento (1).

Em todas as situações em que voto impresso é confirmado, o eleitor poderá imprimir, ao final do processo, um comprovante de comparecimento, oriundo da bobina de papel (7) instalada na parte inferior do equipamento (1), que será fornecida através da saída (8) da impressora.

Como se observa, pelo sistema proposto é eliminada a figura do mesário.

Após o encerramento da votação, urna coletora independente (11) de cédulas confirmadas, ou seja, de voto confirmado, é então sacada do equipamento de votação (1) e levada para o ambiente de auditoria, escrutínio e totalização dos votos, conforme mostra a figura 5.

Nesse outro ambiente, a urna coletora independente (11) de cédulas

confirmadas é acoplada, como mostra a figura 5, no EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA (19), quando então é iniciado o processo de auditoria e contabilidade dos votos.

Este equipamento (19), também objeto da presente patente, como é mostrado em especial pelas figuras 6 e 7 e também pela figura 5, é composto, em uma de suas laterais, por uma entrada (20) de urna coletora independente (11), dispositivo de leitura/gravação de RFID (21) e uma entrada de cédulas auditadas (22). Na outra lateral possui impressora (23) e monitor LCD (24), reaproveitado das Urnas Eletrônicas.

No interior, o equipamento (19) possui um leitor ótico de OCR e QR code e uma CPU (25) e dispositivos embaladores (26), comunicantes, na outra lateral, com uma saída (27) de cédulas embaladas que receberão uma identificação RFID a ser aplicada pelo etiquetador (28).

O equipamento (19) será alimentado pelas informações trazidas na urna armazenadora independente (11), ou pelas cédulas de segurança impressas (14) com lacre, em um processo de auditoria, tendo diferentes funções exercidas numa mesma rotina automatizada mecanicamente.

Caso o lacre da urna coletora independente (11) de confirmação de voto tenha indícios de violação, o equipamento (19) emite aviso sonoro e em texto no LCD, sendo a referida urna coletora independente (11) remetida para comissão apuradora, que decidirá sobre o prosseguimento ou não de sua apuração.

A primeira função do EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA (19) é receber a urna coletora independente (11) pela entrada (20) e verificar a procedência do lacre da urna coletora independente (11) através do dispositivo (21) rádio frequência e, confirmada a relação entre o chip e a seção eleitoral, os votos impressos são automaticamente retirados da referida urna coletora independente (11).

As cédulas (14) passam então pelo leitor ótico (25), que fará a leitura dos códigos de barras (16), (17) ou (18), extraindo e verificando as assinaturas digitais, e comparando às informações do voto em texto às informações do voto codificado em código de barras.

Após auditoria comparativa, o voto impresso é então contabilizado eletronicamente e enviado para um módulo (26) onde, junto com as demais cédulas (14) da seção eleitoral em escrutínio, serão armazenadas. Concluída a apuração total dos votos, as cédulas sairão lacradas em plástico e enviados para saída (27), formando um bloco de papel (29), como mostra a figura 8, que receberá, na etiquetadora (28), um chip de rádio frequência, concluindo assim o processo de auditoria e escrutínio eletrônica das cédulas impressas.

A entrada de votos em auditoria (22), receberá as cédulas que necessitaram de outro processo de inspeção. O procedimento de apuração de cédulas auditadas é similar ao procedimento de cédulas coletadas, diferenciando apenas na origem das informações de identificação rádio

frequência, ou seja, ao invés de ler o lacre RFID da urna independente, a interface fará a leitura de um identificador RFID de um bloco de cédulas onde se detectou a necessidade de uma auditoria mais refinada.

Para efeito de segurança, o EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA (19) é desprovido de dispositivo de entrada, possuindo somente o disco armazenador dos programas de controle dos engenhos mecatrônicos e de interpretação, auditoria e contabilidade de votos impressos.

Relatórios, alertas e o boletim de totalização serão todos emitidos em texto e código de barras bidimensional através da impressora e registrados no arquivo de log da máquina.

Têm-se como objetivo que este segundo equipamento da presente patente seja fabricado utilizando componentes eletrônicos como processadores, memória, impressora, tela LCD e os componentes plásticos reaproveitados do processo de reciclagem das urnas eletrônicas atuais, que serão substituídas por computadores ou tablets no amadurecer do processo de implantação dos novos equipamentos de votação eletrônica e mecânica objetos desta patente.

REIVINDICAÇÕES

1) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", sendo um equipamento (1) envolto por cabine de votação (C) passível de conexão à urna eletrônica (U), **caracterizado** por configuração de computador com teclado reversível com tela "touch screen" ou "tablet" (2), fone de ouvido (F), câmera (3) de reconhecimento biométrico da face do eleitor e conectado a teclado mecânico (T), dito equipamento (1) dotado, também, de bancada com leitor biométrico de quatro dedos (4), armazenador de cédulas virgens (5) conectado à impressora (6) alimentada por bobina de papel (7), ambas comunicantes com uma saída (8) de impressora, dita bancada possuindo, ainda, entrada (9) verificadora e coletora de cédulas impressas de voto confirmado pelo eleitor, além de uma entrada (10) verificadora e fragmentadora de cédula impressa porém rejeitada (anulada) pelo eleitor, sendo a referida entrada (9) ligada à uma urna coletora independente (11) de cédulas confirmadas e verificadas pelo sistema e, a entrada (10) ligada à uma urna ecológica (12) receptora dos fragmentos dessas cédulas impressas porém rejeitadas pelos eleitores, dito equipamento (1) completado por um segundo "tablet" (13), instalado com software desenvolvido por uma entidade auditora do processo eleitoral, contendo as chaves públicas dos equipamentos, para verificação eletrônica (pelo próprio eleitor), do voto impresso em código de barras bidimensional.

2) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE

SEGURANÇA DO VOTO", de acordo com reivindicação 1, o equipamento (1), de uso com mesa receptora de votos, formar um sistema **caracterizado** pela coleta do voto eletrônico e de voto impresso em papel, com dupla identificação biométrica, em acionamento pelo próprio eleitor.

3) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, **caracterizado** por, após manuseado o teclado pelo eleitor, ser produzida (3) cédula impressa (14) com voto completo codificado em código de barras bidimensional, com assinaturas digitais da Justiça Eleitoral e de outra instituição auditora do processo (15), além de códigos de barras (16) e (17), de tamanho menor e capacidade de armazenamento reduzida e, ainda, código eletrônico em braile (18).

4) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, ocorrer conferência eletrônica pelo equipamento (1) e também pelo segundo "tablet" (13), **caracterizado** pela cédula (14) ser inserida na entrada de confirmação de voto (9) e armazenada de forma aleatória na urna coletora independente (11), com envio de sinal digital para gravação do registro digital do voto pelo sistema eleitoral.

5) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, em caso de correção de voto, **caracterizado** pela inserção da cédula (14) na entrada (10) para trituração e envio de sinal digital para o sistema eleitoral, para

cancelamento de voto, sem ser computado, e reinício do processo de votação.

6) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, em caso de leitor de analfabeto, **caracterizado** pelo uso de santinhos com código de barras bidimensional com dupla identificação biométrica, seguindo-se a inserção na entrada (10) verificadora trituradora, visualizando a foto de seu candidato na tela (2), repetindo a operação até o final do processo, para impressão da cédula (14) e confirmação pela entrada de confirmação de voto (9).

7) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, em caso de eleitores com deficiência visual, **caracterizado** pelo lançamento do voto através de santinhos com códigos de barras ou através do teclado mecânico (T), e confirmação do voto através do fone de ouvido (F), inserindo a cédula (14) com o voto transcrito em código Braille (18) na entrada coletora (9) ou na entrada trituradora (10).

8) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO" de acordo com reivindicação 2, após emissão de comprovante de voto através de saída (8) da impressora, **caracterizado** pela urna coletora independente (11) com as cédulas (14) armazenadas, ser retirada e introduzida na entrada (20) do EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE

SEGURANÇA dotado também de leitor/gravador de RFID (21), entrada de cédulas auditadas (22) possuindo, na outra lateral, impressora (23) e monitor LCD (24) e, em seu interior, um leitor ótico de OCR e QR code e uma CPU (25) e dispositivos embaladores (26), comunicantes, na outra lateral, com uma saída (27) de cédulas embaladas, passíveis de receber identificação RFID por etiquetador (28).

9) "EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA", de acordo com reivindicações 2 e 8, formar um sistema **caracterizado** por ler as informações trazidas na urna coletora independente (11) através do dispositivo (21) rádio frequência e, caso hajam indícios de violação, ser emitido aviso sonoro e em texto no LCD, para reavaliações eleitorais.

10) "EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA", de acordo com reivindicação 9, **caracterizado** pela leitura dos códigos de barras (16), (17) ou (18), e contabilização eletrônica das cédulas (14), armazenadas no módulo (26), seguindo-se o lacre, formando um bloco (29) expulso pela saída (27), recebendo, na etiquetadora (28), um chip de rádio frequência, de uso com mesa receptora de votos, formar um sistema **caracterizado** pela coleta do voto eletrônico e de voto impresso em papel, com dupla identificação biométrica, em acionamento pelo próprio eleitor.

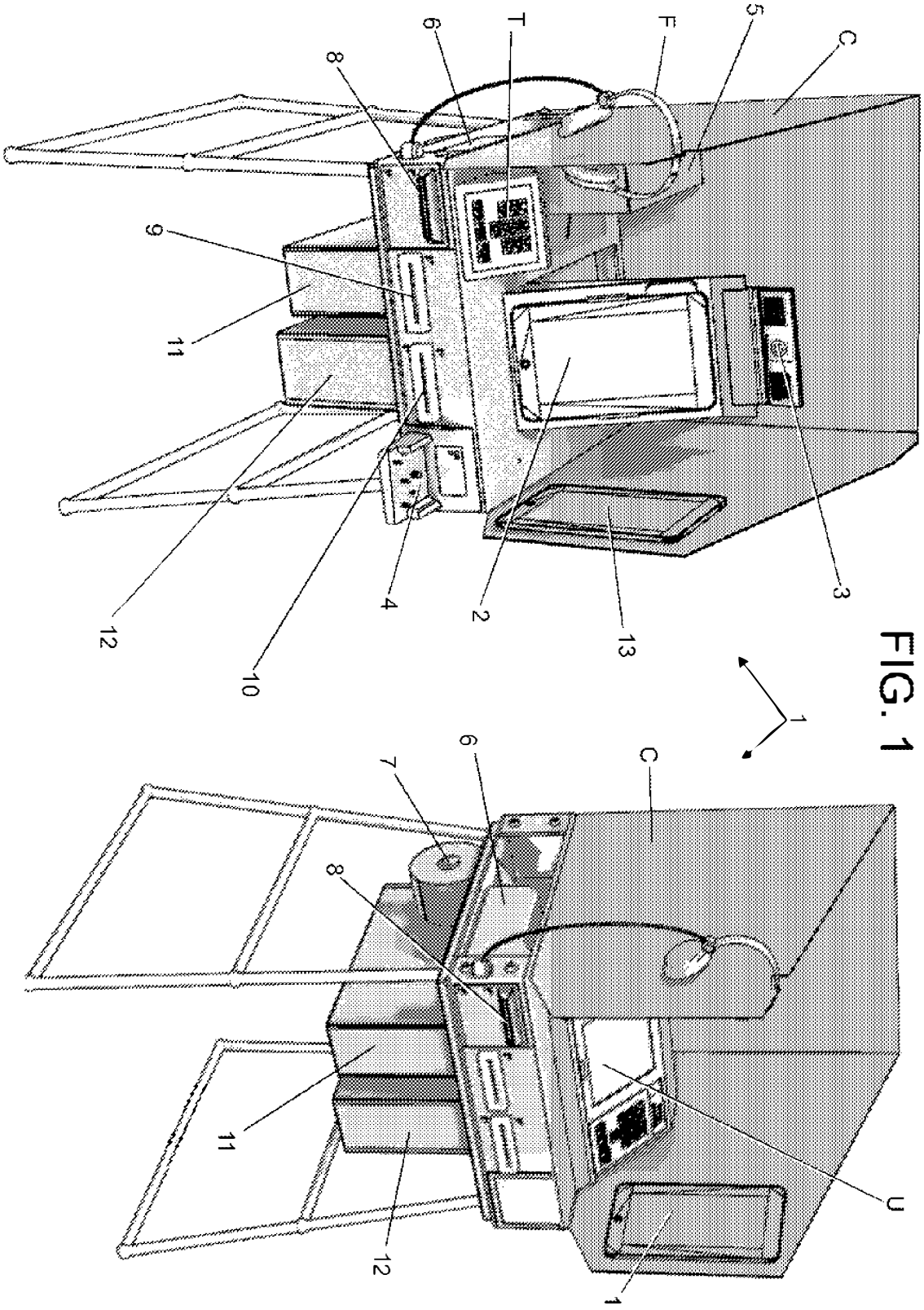


FIG. 1

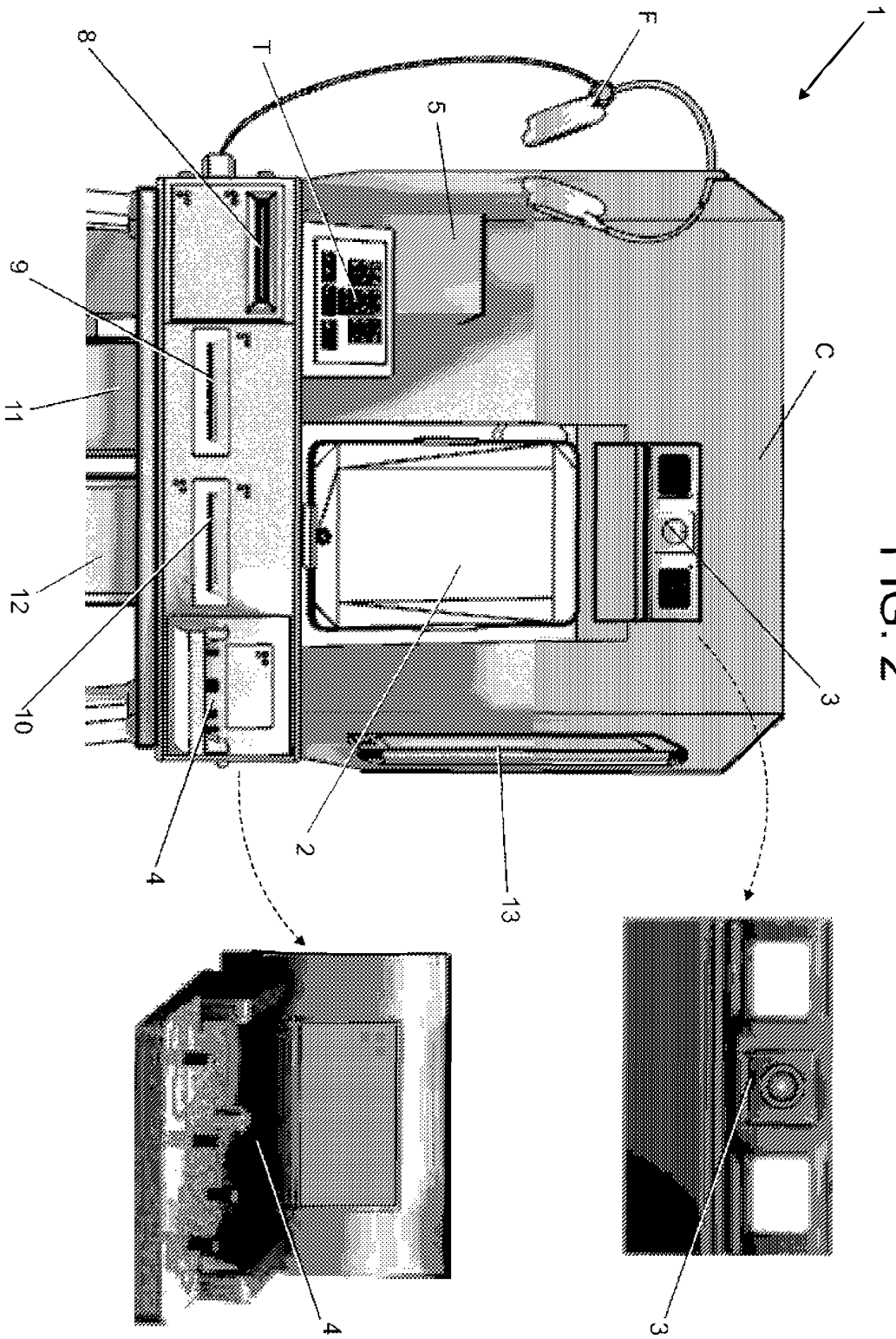


FIG. 2

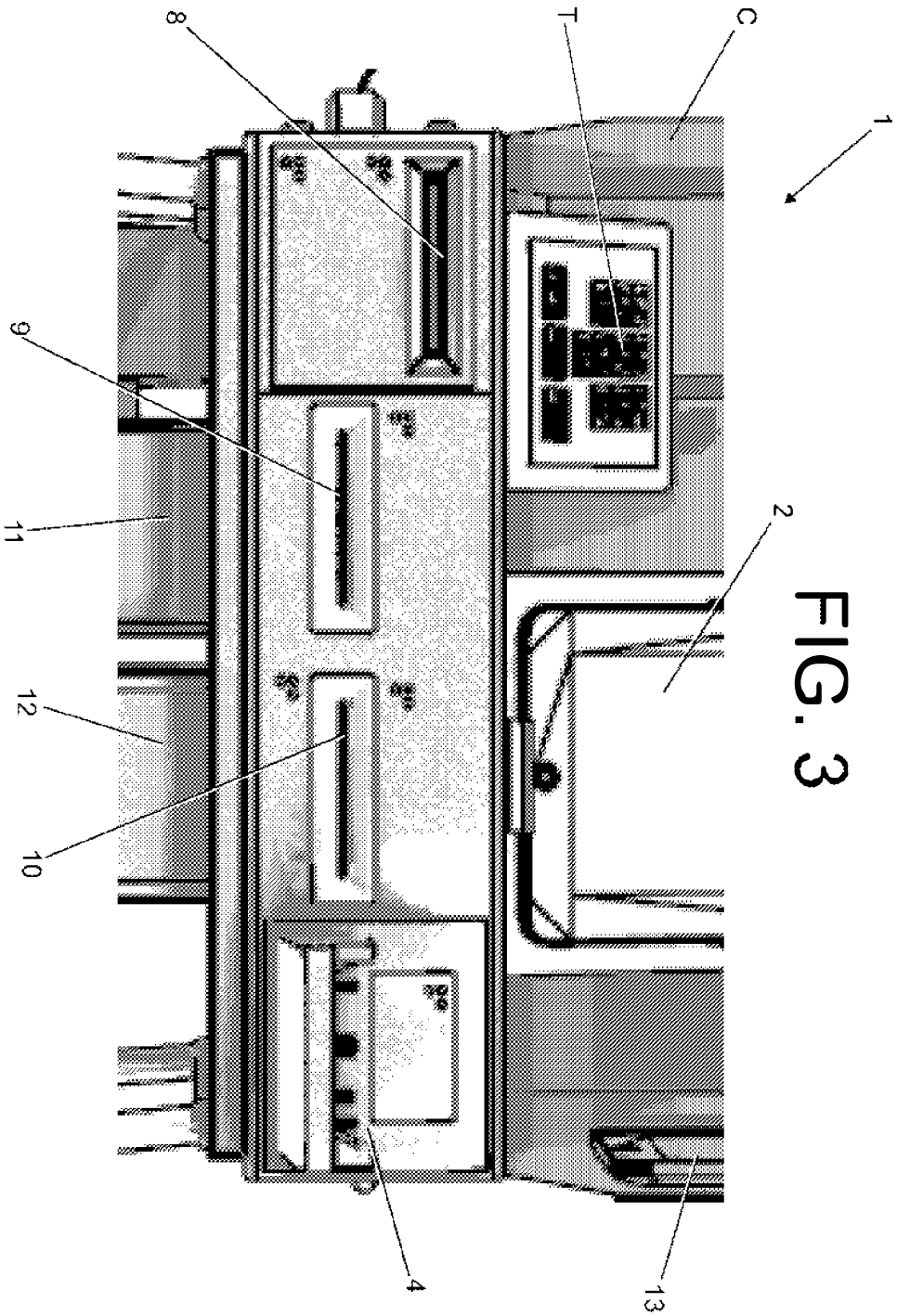


FIG. 3

FIG. 4

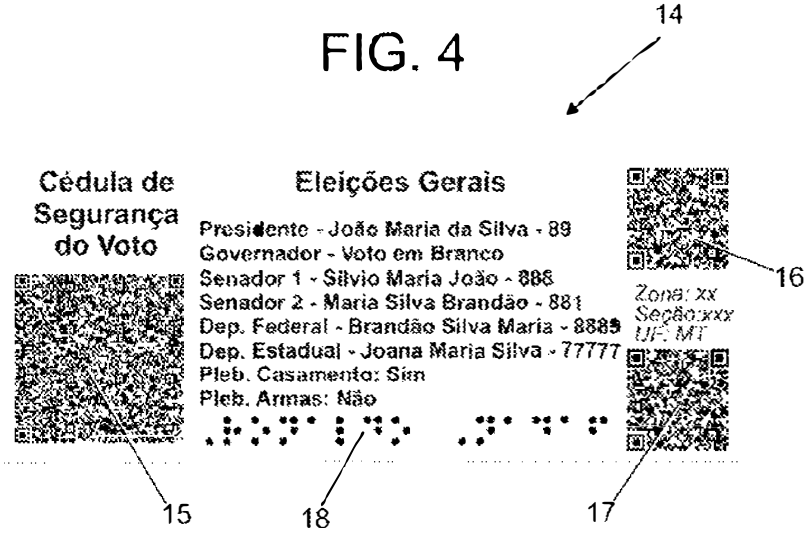
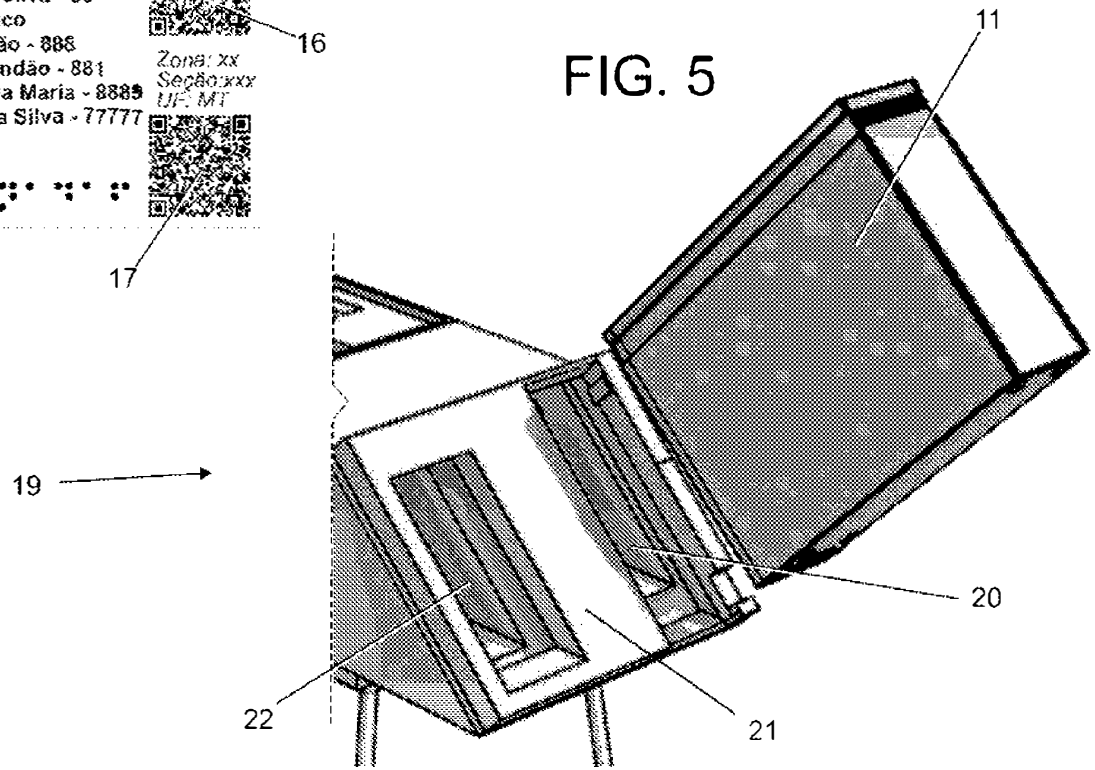


FIG. 5



Election Systems & Software, LLC - Exhibit 1007
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 59

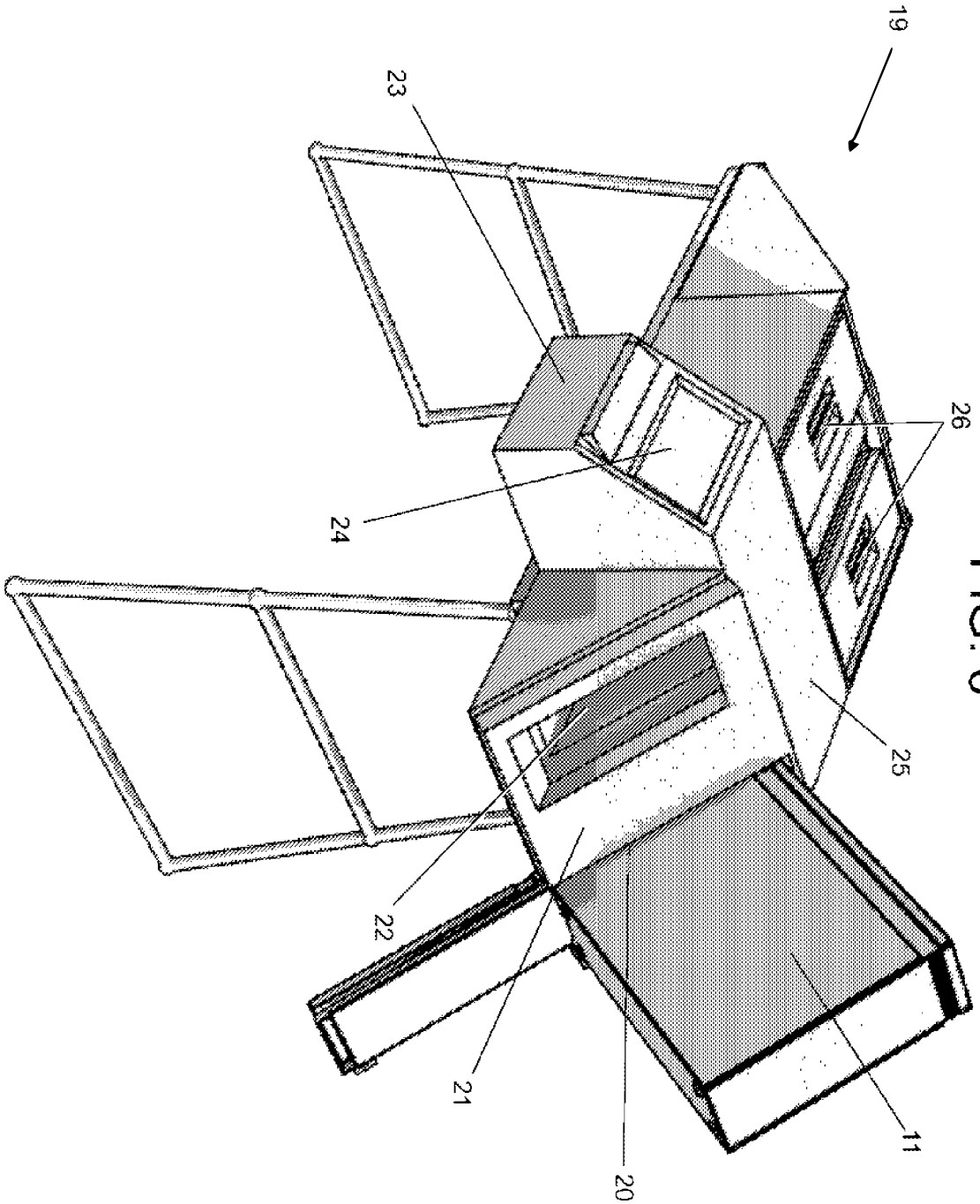


FIG. 6

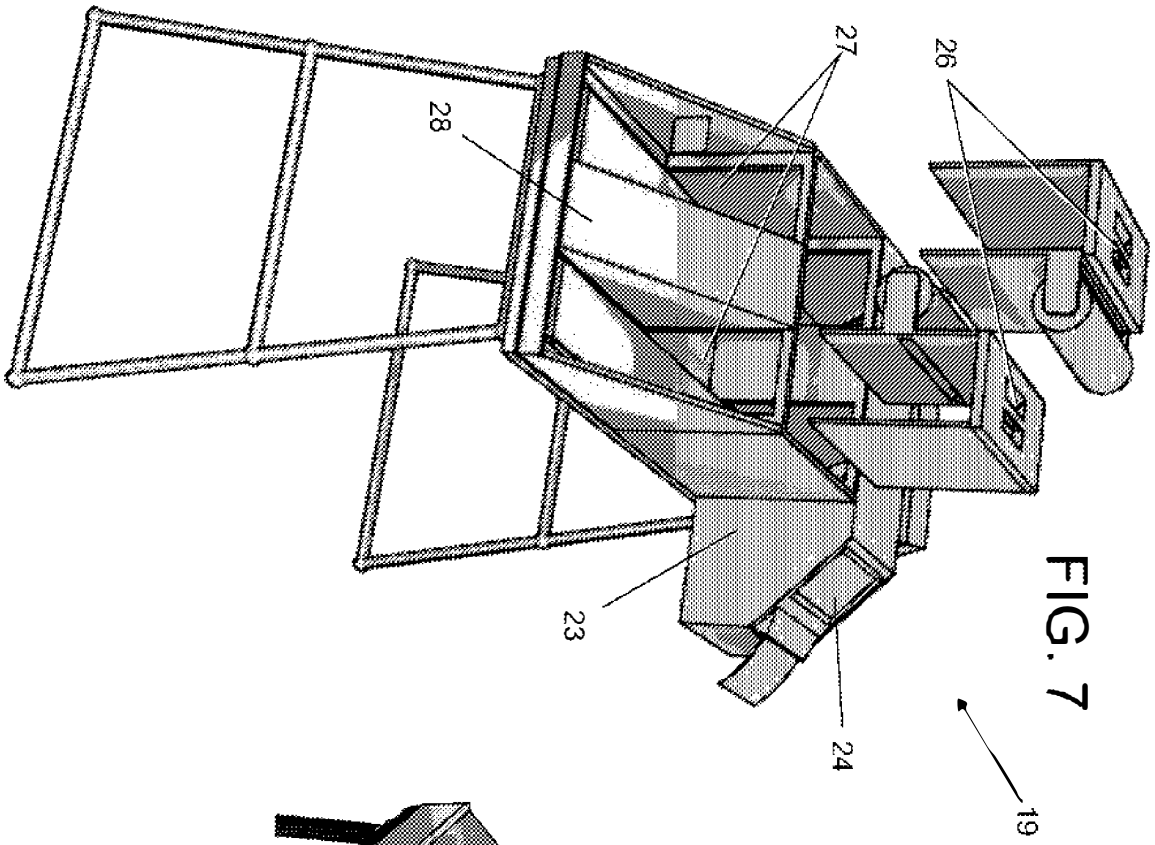


FIG. 7

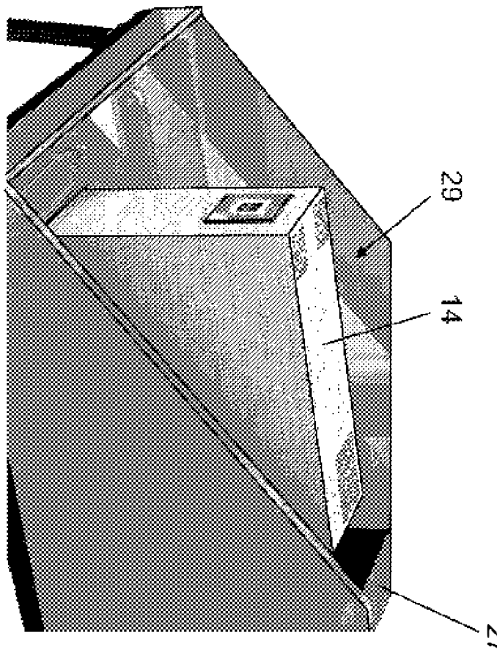


FIG. 8

RESUMO

"EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA", onde um equipamento (1) forma um sistema que possibilita ao próprio eleitor, votar e obter uma cédula de impressão (14) pela qual serão confirmados, o voto eletrônico e a impressão, através de códigos de barra (15), (16), (17) e (18) nela gravados. Tal cédula (13) é transferida para um segundo equipamento (19), de apuração de votos, onde tais informações serão lidas, formando um sistema de armazenamento eletrônico e impresso, em total interação e passível de ser auditado, caso hajam dúvidas em relação a fraudes, trazendo total segurança ao sistema eleitoral.

Exhibit C

1007
, Inc.
ge 63

< Uso exclusivo do INPI >

19/07/2013 BR913000000638 16:32 NPWB

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BR 10 2013 018558 2

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Diretoria de Patentes

DIRPA @PATENTES	Tipo de Documento: Formulário Eletrônico	DIRPA	Página: 1 / 2
Título do Documento: Depósito de Pedido de Patente		Código: FQ001	Versão: 3
		Procedimento: Não Aplicável	

Ao Instituto Nacional da Propriedade Industrial:

O requerente solicita a concessão de um privilégio na natureza e nas condições abaixo indicadas.

1. Depositante (71):

1.1	Nome:	Ronaldo Moises Nadaf
1.2	Qualificação:	Brasileiro, Casado, Jornalista
1.3	CPF:	570.490.501-30
1.4	Endereço Completo:	Rodovia Emanoel Pinheiro, KM 2 C13 Q16, Cuiabá, Mato Grosso, Brasil
1.5	CEP:	78055-799
1.6	Telefone:	+55(11)32972782
1.7	Fax:	+55(11)50711783
1.8	E-mail:	modal@modalmarcas.com.br

2. Natureza: (x) Invenção [ ] Modelo de Utilidade [ ] Certificado de Adição

3. Título da Invenção ou Modelo de Utilidade (54):

EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA.

4. Pedido de Divisão: do pedido Nº: ---

5. Prioridade:

Declaração na forma do item 3.2 da Instrução Normativa nº 17/2013:

[ ] Declaro que os dados fornecidos no presente formulário são idênticos ao da certidão de depósito ou documento equivalente do pedido cuja prioridade está sendo reivindicada.

O depositante reivindica a(s) seguinte(s) prioridade(s):

País ou Organização do depósito	Número do depósito	Data do depósito	Tipo
---	---	---	---

6. Inventor (72):

6.1	Nome:	Ronaldo Moises Nadaf
6.2	Qualificação:	Brasileiro, Casado, Jornalista
6.3	CPF:	570.490.501-30
6.4	Endereço Completo:	Rodovia Emanoel Pinheiro, KM 2 C13 Q16, Cuiabá, Mato Grosso, Brasil
6.5	CEP:	78055-799
6.6	Telefone:	+55(11)32972782
6.7	Fax:	+55(11)50711783
6.8	E-mail:	modal@modalmarcas.com.br

7. Declaração de divulgação anterior não prejudicial:

[ ] Artigo 12 da LPI - Período de Graça.

8. Procurador (74):

8.1	Nome:	Modal Marcas e Patentes Ltda
8.2	CNPJ:	12.999.444/0001-61
8.3	Endereço Completo:	Rua Fiação da Saúde, 145, Cj 55, São Paulo, São Paulo, Brasil
8.4	CEP:	04144-030
8.5	Telefone:	+55(11)32972782
8.6	Fax:	+55(11)50711783
8.7	E-mail:	modal@modalmarcas.com.br

9. Listagem de sequências biológicas: (documentos anexados, se houver)

[ ] Código de controle alfanumérico no formato de código de barras (arquivo em formato eletrônico PDF).

[ ] Código de controle alfanumérico no formato de código de barras (arquivo em formato eletrônico XML).

[ ] Listagem de sequências (arquivo em formato eletrônico TXT).

[ ] Declaração relativa à listagem de sequências (arquivo em formato eletrônico PDF).

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Rio de Janeiro, 13 Fevereiro de 2020.

Flavia Romano Villa Verde
Chefe DIDOC
Mat. 1480674

10. Material biológico: (se houver)

10.1 Identificação: ---
10.2 Instituição depositária: ---
10.3 Endereço completo: ---
10.4 Número de adesão: ---

11. Declaração de igualdade de conteúdo técnico entre os arquivos eletrônicos em formato PDF e TXT (texto):

[x] Declaro que todos os documentos de especificação em formato texto têm conteúdo igual ao dos documentos de especificação anexados em formato PDF. Caso haja alguma divergência entre os arquivos PDF e TXT (texto), será considerado o conteúdo do arquivo PDF para fins de exame.

12. Dados gerais do conteúdo técnico do depósito (caso aplicável):

Sugestão de desenho a ser publicado com o resumo: FIG. 6 (sujeito a avaliação do INPI)
Número de desenhos: 8
Cor dos desenhos: [x] Preto e branco [ ] Colorido / Escala de cinza

13. Documentos Anexados: (assinale e indique também o número de folhas)

X	Relatório descritivo em formato eletrônico PDF	17 p.
X	Reivindicações em formato eletrônico PDF	4 p.
X	Resumo em formato eletrônico PDF	1 p.
X	Desenhos em formato eletrônico PDF	6 p.
X	Relatório descritivo em formato eletrônico texto	--- p.
X	Reivindicações em formato eletrônico texto	--- p.
X	Resumo em formato eletrônico texto	--- p.
X	Guia de Recolhimento da União (GRU) paga com comprovante de pagamento em formato eletrônico PDF [Código de serviço: 200, Número: 00.000.2.2.13.0526074.5, Nome do sacado: Ronaldo Moises Nadal]	1 p.
X	Procuração em formato eletrônico PDF	1 p.
X	Documento de identificação de pessoa física em formato eletrônico PDF	1 p.

14. Declarações gerais do sistema para depósito eletrônico de pedidos de patente do INPI:

[x] Declaro que assumo total responsabilidade sobre a integridade, a legibilidade e a fidedignidade dos documentos enviados por meio eletrônico, bem como sua adequação aos requisitos técnicos exigíveis para seu correto processamento pelo sistema e-Patentes/Depósito.

[x] Declaro ciência de que o envio dos documentos ao INPI só é considerado concretizado após esses serem protocolados e um recibo com assinatura digital do INPI for entregue eletronicamente aos usuários dos serviços. Em qualquer situação de dúvida, o usuário deverá apresentar esse recibo.

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[x] Declaro que me comprometo a não realizar qualquer modificação capaz de alterar os arquivos automaticamente criados pelo sistema e-Patentes/Depósito, tendo ciência de que qualquer alteração poderá invalidar o depósito ou o peticionamento eletrônico.

[x] Declaro ciência de que eventuais exigências formais e/ou técnicas serão posteriormente publicadas na Revista Eletrônica da Propriedade Industrial (RPI) disponibilizada no portal do INPI.

[x] Declaro, sob penas da Lei, que todas as informações prestadas neste formulário eletrônico são completas e verdadeiras.

19 de julho de 2013
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Protocolo

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Número

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Número do protocolo:	860130000829
Data do protocolo:	19 de Julho de 2013, 16:32 (BRT)
Número de referência de envio:	1129

Dados do requerente ou interessado:

Tipo de formulário enviado:	DIRPA-FQ001 v.003
Referência interna:	RONALDO MOISES
Primeiro requerente ou interessado:	Ronaldo Moises Nadal
CPF do primeiro requerente ou interessado:	570.490.501-30
Número de requerentes ou interessados:	1
Título do pedido:	EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA.

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EQUIPAMENTOS ELEITORAIS - RELATÓRIO DESCRITIVO.pdf *[DOCUMENTO.pdf]*	Arquivo com conteúdo técnico-patentário da petição - *Relatório descritivo em formato eletrônico PDF* *páginas 1 a 17*	17
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EQUIPAMENTOS ELEITORAIS - RESUMO.pdf *[DOCUMENTO-2.pdf]*	Arquivo com conteúdo técnico-patentário da petição - *Resumo em formato eletrônico PDF* *página 1*	1
EQUIPAMENTOS ELEITORAIS - DESENHOS.pdf *[DOCUMENTO-3.pdf]*	Arquivo com conteúdo técnico-patentário da petição - *Desenhos em formato eletrônico PDF* *páginas 1 a 6* *[Número de desenhos: 6. Desenho para resumo: FIG. 5. Cor dos desenhos: Preto e Branco]*	6
EQUIPAMENTOS ELEITORAIS - RELATÓRIO DESCRITIVO.txt *[RELATDESCTXT.txt]*	Relatório descritivo em formato eletrônico texto	---
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Dados sobre o envio:

Responsável pelo envio:	fabiana aparecida gomes:add503372389771711b8c20ad0db6d9
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409304993 0001

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	API. 2047	Recebido: MODAL MARCAS E PATENTES LTDA			(=) Valor Cobrado: R$ 70,00
Sacado: RONALDO MOISES NADAF ROD EMANOEL PINHEIRO, KM2 C12 Q16, Cuiabá, BR/MT, 78085799					
Sacador/Avalista:					
Corte na linha pontilhada					Autenticação mecânica - Contrato Cedente

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MODAL

PROCURAÇÃO

OUTORGANTE: RONALDO MOISES MADAF, brasileira, jornalista, casado, residente à End.: Rodovia Emanoel Pinheiro km2 – C13 Q16 – RESIDENCIAL SAN MARINO, CEP: 78055-799 – na capital de CUIABA/MT, cadastrado no CPF Nº 570.490.501-30, e RG Nº 755405. Constitui(em) e nomeia(m) como seus bastantes procuradores.

OUTORGADO: MODAL MARCAS E PATENTES LTDA., inscrita no INPI sob nº2097 e no CNPJ(MF) sob nº 12.999444/0001-61 com escritório na Capital do Estado de São Paulo à Rua Fiação da Saúde, 145 cj 55. CEP. 04144-020.

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São Paulo, 08 de Maio de 2013

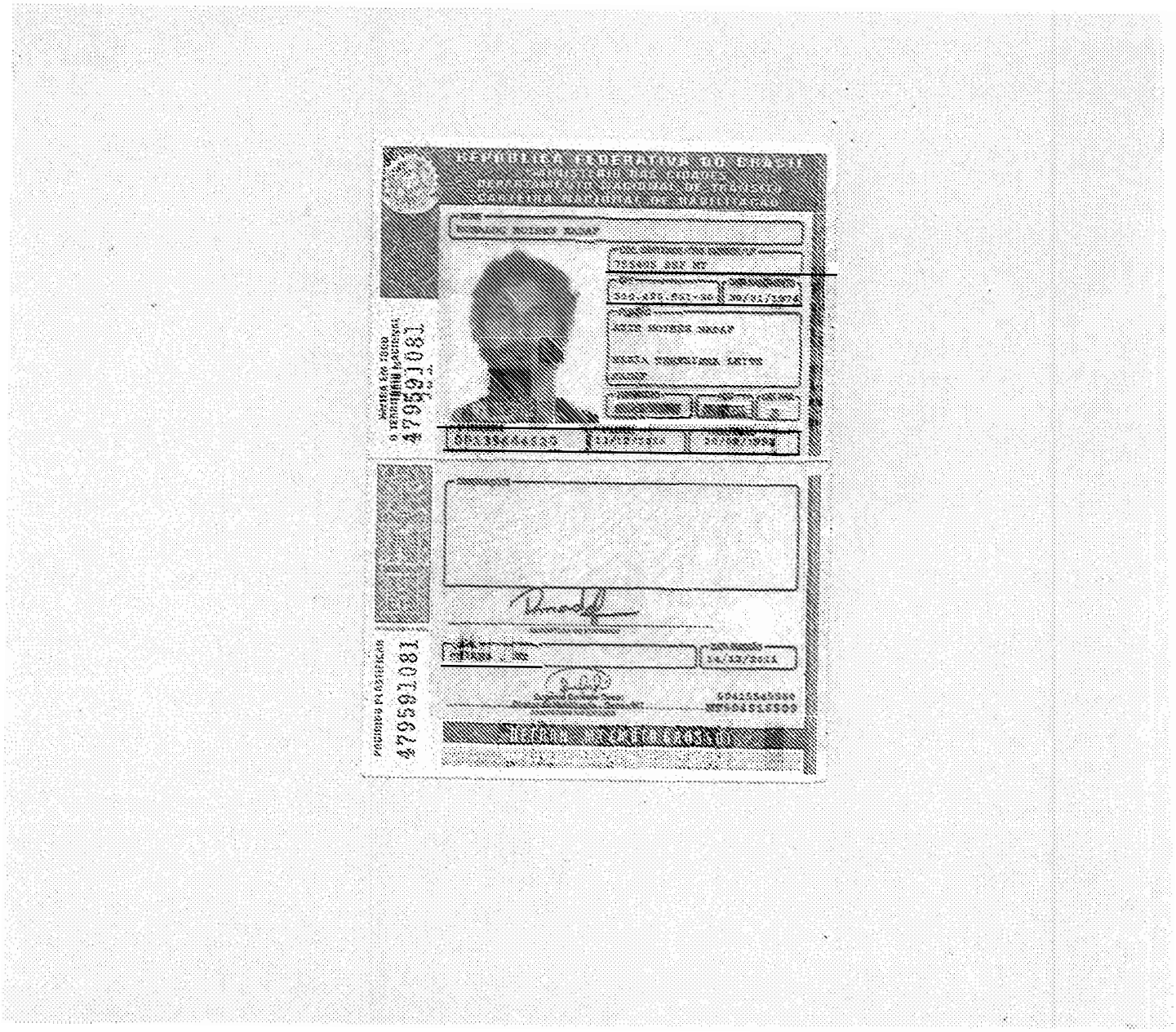
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"EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA"

Refere-se o presente pedido de patente de invenção para um conjunto de equipamentos que irão garantir a qualquer cidadão a votação eletrônica combinada à possibilidade de conferir o registro fiel de sua intenção política, utilizando cédulas de votação em papel como mecanismo de auditoria e segurança do voto individual.

Este conjunto de equipamentos vai trazer o voto impresso em cédulas de papel ao processo eleitoral, porém, com outro nível de segurança, onde a cédula impressa com o voto do cidadão será manuseada tão somente pelo eleitor votante.

O primeiro equipamento, denominado EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO, vai permitir, além da impressão do voto, ampliar a segurança da identificação do eleitor, pois tem como objetivo a utilização de um processo com o duplo reconhecimento biométrico do eleitor, onde serão verificadas, além das impressões digitais de 4 dedos da mão, um reconhecimento biométrico da face.

A cédula de votação produzida nesse novo contexto tecnológico trará a impressão de no mínimo 2 registros do voto individual, sendo o primeiro registro em texto, produzido pelos sistemas digitais do

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equipamento de voto digital, incluindo as urnas eletrônicas hoje em uso, e um segundo registro do voto, que será gerado pelo EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO, objeto desta patente, dito voto impresso, na mesma cédula, em códigos de barras bidimensional, ampliando ainda mais a segurança, a transparência e os mecanismos de auditoria do processo de geração e coleta dos votos.

Além dos dois registros do voto individual, um em texto e outro em código de barras, a cédula impressa trará mais dois registros em código de barras bidimensional que armazenarão as assinaturas digitais da Justiça Eleitoral e de outra instituição responsável pela auditoria do processo.

Essas assinaturas digitais serão produzidas por criptografia assimétrica de algoritmo ECDSA(Eliptic Curve Digital Signature Algorithm), com par de chaves de tamanho mínimo de 283 bit. O processo de assinatura do voto se dará pelas chaves privadas das instituições, que estarão instaladas no EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO e no computador coletor de votos, garantindo procedência institucional ao voto impresso, sem violar o sigilo do mesmo.

Um segundo equipamento presente neste pedido de patente de invenção, denominado EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, será responsável por controlar o recebimento da urna armazenadora de votos impressos, urna esta que terá a segurança física mantida por um lacre com

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tecnologia de radio frequência.

Este equipamento, além de fazer um controle dos lacres radio frequência, vai auditar os votos impressos coletados pela urna, comparando o registro em texto às informações contidas nos códigos de barras bidimensionais, verificando as assinaturas digitais através das respectivas chaves públicas geradas para os equipamentos coletores de voto, confirmando a procedência institucional e integridade do conteúdo do voto impresso.

Somente depois de auditado, o voto impresso será validado para o escrutínio, e voltará a ser contabilizado de forma eletrônica a outros votos da seção eleitoral em um sistema simplificado de contabilidade de votos instalado também no EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA.

Esta máquina também será responsável pela embalagem das cédulas impressas coletadas em uma seção eleitoral, que sairão deste segundo equipamento, somadas e lacradas num invólucro plástico com outro chip de tecnologia radio frequência, dando início ao processo de armazenamento e auditoria controlado por esta tecnologia.

ESTADO DA TÉCNICA

Como é sabido historicamente, existem traumas culturais provocados pelo período em que o país realizava suas eleições em cédula de papel.

Muitas foram as fraudes ocorridas nesse longo período passado,

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como por exemplo o "voto carreirinha", quando um primeiro eleitor conseguia sair com a cédula virgem da sessão eleitoral, repassava para um corruptor que preenchia a cédula com o nome do seu candidato e entregava-a a um outro eleitor que inseria a cédula pré preenchida e repetia a operação de retirada de cédula virgem, fazendo assim um ciclo seguro, e evidentemente ilegal, para desvios de voto.

Registros de falsificação, adulteração, extravio de cédulas fazem parte de um tempo distante pois foram eficientemente extintos com o atual modelo eletrônico de votação. Portanto, a população em geral e também a classe política não acreditam na real necessidade da impressão do voto em papel.

No entanto aderem, de forma temerosa, ao voto totalmente eletrônico. Tal afirmação deve-se ao fato de que pesquisas científicas desenvolvidas por diferentes países que buscam melhorar a segurança e a transparência dos seus processos eletrônicos de votação, apontam, cada vez mais, para a necessidade de o eleitor, principalmente o eleitor leigo em tecnologia, ter a possibilidade de verificar se sua intenção de voto foi registrada e contabilizada corretamente sem correr riscos de extravios ocasionados por erros, que infelizmente estão presentes na votação totalmente eletrônica.

Diferentes estudos sobre voto eletrônico revelam a necessidade de existir uma trilha de auditoria física do voto individual, onde o eleitor, apenas com os olhos, possa ter garantias de que seu voto não sofrerá

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qualquer possibilidade de adulteração ou extravio e assim, tendo certeza de que será somado ao resultado final da eleição.

Nesse contexto, surgiu no ano de 2.000, na tese de pós-doutorado proposta pela Ph.D. Rebecca Mercuri, intitulada "Electronic Vote Tabulation – Checks & Balances", o conceito "Voter-verified Paper Audit Trail (VVPAT)" e "Verified Paper Record (VPR)" que, em síntese, discorre sobre a importância da existência de auditoria em papel que venha permitir a recontagem dos votos de uma eleição eletrônica, quando assim for necessária.

Em 2006, o Ph.D. em criptologia Ronald Rivest, juntamente com o pesquisador do Instituto Nacional de Padrões e Tecnologia dos Estados Unidos, John Wack, idealizou o conceito "software independece" para os processos de votação eletrônica. Estes cientistas defendem que *"o sistema de votação é independe de software quando uma alteração ou um erro imperceptível na programação dos sistemas de votação não provoca uma alteração ou erro, também imperceptíveis, no resultado das eleições (tradução nossa)"*.

Destaca-se também a norma técnica que está sendo aprimorada pelo Instituto de padrões e tecnologia (National Institute of Strandars and Technology - NIST) e pela Comissão de Assistência Eleitoral dos Estados Unidos da América, conhecida como "Voluntary Voting System Guidelines" que traz no rascunho da versão mais atual os seguintes requisitos mínimos para homologação de equipamentos de votação naquele

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pais (traduzidos para o português):

a - Ao menos dois registros do voto devem ser produzidos e um deles deve ser guardado em meio que não possa ser modificado pelo sistema (eletrônico) de votação, de forma que ambos os registros não estejam sob controle de um único processo digital;

b) - O eleitor deve estar capacitado para verificar a igualdade dos dois registros do seu voto antes de deixar o local de votação;

c) O processo de verificação dos registros do voto deve ser independente e ao menos um deles deve ser conferível diretamente pelo eleitor;

d) Os dois registros de um voto poderão ter sua consistência verificada posteriormente por meio de identificadores únicos que permitam a correlação dos registros.

No Brasil, destaca-se o artigo 5º da Lei Nº 12.034/94, que altera a Lei dos Partidos Políticos (9.096/95), a Lei das Eleições (9.504/97) e o Código Eleitoral (4.737/65), que obriga o uso de dispositivos de impressão do voto a partir das eleições de 2014.

O artigo está suspenso por decisão liminar proferida na Ação Direta de Inconstitucionalidade nº 4547 interposta no Supremo Tribunal Federal pela Procuradoria Geral da União. A ação questiona o voto impresso descrito na lei que, em tese, fere o direito ao sigilo do voto do eleitor.

Diante desse cenário, percebe-se que a urna eletrônica brasileira passou a não atender a legislação vigente, bem como os requisitos básicos

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da norma norte-americana, por ser um coletor e apurador de votos do tipo *DRE* (de Direct Recording Electronic), caracterizada pela gravação eletrônica direta sem impressão do voto para conferência do eleitor.

OBJETIVO DA PATENTE

Os equipamentos, objetos desse presente pedido de patente de invenção, têm como objetivo exatamente a ampliação da segurança do processo eleitoral como um todo e foram pensados de uma forma onde as cédulas de votação impressas nos dispositivos serão manuseadas apenas e tão somente pelo próprio eleitor, reduzindo assim o leque de possibilidades de fraudes eleitorais que aconteciam principalmente no ato de apuração das cédulas de papel.

Para tanto, o modelo proposto é composto a partir de uma cédula de segurança, com o voto em texto e um segundo registro do voto em código de barras bidimensional, uma tecnologia de codificação de informações para gráfico de barras cuja licença de uso é livre de royalties.

O voto em texto produzido para a cédula será gerada em um dispositivo de registro eletrônico do voto (Direct Recording Electronic - DRE), que inclusive poder ser a própria urna eletrônica hoje em uso, que será conectada, através de porta USB, ao EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO.

Através do sistema, será possibilitado ao usuário a votação eletrônica que, após concluída, vai gerar o voto impresso, trazendo-lhe a certeza de sua escolha e impedindo que falhas nos equipamentos possam

Election Systems & Software, LLC - Exhibit 1002
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extraviar o voto lançado de forma digital.

Explicado superficialmente, passam os dois equipamentos e os sistemas que os envolvem a serem melhor detalhados através dos desenhos anexos, pelos quais se vêem:

Figura 1 – mostra, à esquerda, o EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO conectado à um Tablet e, à direita, o mesmo equipamento conectado à Urna eletrônica;

Figura 2 – mostra o EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO e, ao lado, detalhes ampliados dos leitores biométricos;

Figura 3 – mostra, em detalhe ampliado, as interfaces do EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO;

Figura 4 - mostra a cédula de segurança do voto, com seus códigos digitais;

Figura 5 – mostra a urna independente sendo acoplada no EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA;

Figura 6 – mostra o EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA;

Figura 7 - mostra o EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA. Nos detalhes, destacados, os dispositivos embaladores;

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Figura 8 – mostra as cédulas lacradas, formando um bloco controlado por tecnologia RFID.

Em conformidade com os desenhos anexos, o "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", um dos equipamentos objeto desse presente pedido de patente de invenção, constitui-se de um equipamento (1) envolto por cabine de votação (C) e que pode ser conectado à uma urna eletrônica (U), como mostra a figura 1, dito equipamento (1) em forma de computador com teclado reversível e tela sensível ao toque "touch screen" ou um "tablet" (2), com fone de ouvido (F), acoplado com câmera (3) com capacidade para realizar o reconhecimento biométrico da face do eleitor e conectado a um teclado mecânico (T) reaproveitado no processo de reciclagem das urnas.

O equipamento (1) possui uma bancada na qual é instalado um leitor biométrico de quatro dedos (4), um armazenador de cédulas virgens (5) conectado à sua impressora (6), alimentada também por bobina de papel (7), ambas comunicantes com uma saída (8) de impressora. A bancada possui também uma entrada (9) verificadora e coletora de cédulas impressas de voto confirmado pelo eleitor, além de uma entrada (10) verificadora e fragmentadora de cédula impressa porém rejeitada (anulada) pelo eleitor.

A entrada verificadora de cédulas impressas de voto confirmado pelo eleitor (9) é ligada à uma urna coletora independente (11) de cédulas confirmadas e verificadas pelo sistema, ao passo que a entrada

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verificadora e fragmentadora de cédula impressa porém rejeitada pelo eleitor (10) é ligada à uma urna ecológica (12) receptora dos fragmentos dessas cédulas impressas porém rejeitadas pelos eleitores, formando assim o equipamento (1) propriamente dito, como mostram as figuras 1, 2 e 3.

O equipamento (1) de impressão e coleta de cédulas de segurança do voto é completado por um segundo "tablet" (13), onde estará instalado um software desenvolvido por uma entidade auditora do processo eleitoral, contendo as chaves públicas dos equipamentos. Este equipamento (13) será usado pelo eleitor para a verificação eletrônica do voto impresso em código de barras bidimensional, possibilitando que o mesmo saia da sessão eleitoral após conferir os dois registros impressos do seu voto, sendo um em texto e o outro em código de barras bidimensional.

Assim constituído, o equipamento (1), integrado com software livre a ser desenvolvido, será utilizado como mesa receptora de votos para um inédito sistema de coleta do voto eletrônico e do voto impresso em papel, com dupla identificação biométrica acionada pelo próprio eleitor.

O eleitor posiciona os quatro dedos da mão direita no leitor de identificação biométrica (4), quando o equipamento (1) faz então a coleta dos dados biométricos e envia uma solicitação assinada digitalmente para o sistema eletrônico de votação instalado no computador ou "tablet" (2).

Em frente ao equipamento (1), o eleitor também é identificado através da câmera (3) que fará o reconhecimento biométrico da face.

Concluída a dupla identificação biométrica do eleitor, ele terá

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acesso à interface de votação ou, no caso do eleitor analfabeto identificado previamente, acesso direto à interface especialmente desenvolvida para os eleitores sem instrução.

Através da tecla correspondente da tela (2), ou através do teclado mecânico reaproveitado da Urna Eletrônica (T), o eleitor escolhe seus candidatos, expondo as respectivas fotografias e demais informações possíveis. A fotografia do candidato é exposta na referida tela (2) para que o eleitor o reconheça sua escolha e confirme o voto digital.

Encerrada coleta do voto eletrônico, o eleitor autoriza, na tela (2) ou no teclado mecânico (T), a impressão de uma cédula de segurança (14) que será emitida pela saída (8) de impressora.

A cédula de segurança (14) do voto, mostrada pela figura 4, vai trazer as escolhas do eleitor para cada cargo em disputa naquela eleição e/ou plebiscito, explícitos em texto bastante legível. A cédula (14) também vai trazer o voto completo do eleitor codificado em código de barras bidimensional, que também vai conter assinaturas digitais da Justiça Eleitoral e de outra instituição auditora do processo (15).

Mais dois códigos de barras (16) e (17), de tamanho menor e capacidade de armazenamento reduzida, serão impressos na cédula (14) e trarão, cada um, uma assinatura digital, agora referente ao texto do voto impresso na cédula (14), produzidos pela Justiça Eleitoral e por outra entidade auditora do processo, respectivamente. A cédula (14) terá, ainda, código eletrônico em braile (18) para eleitor deficiente visual.

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Com a cédula de segurança (14) impressa nas mãos, o eleitor poderá fazer a conferência também visual do voto codificado em barras no segundo "tablet" (13), que fará a leitura do código e exibirá na tela o registro do voto codificado.

Após confirmar que o texto e o registro do código estão, cada um, traduzindo sua intenção política, o eleitor insere a cédula (14) na entrada de confirmação de voto (9).

O equipamento (1) então lê, eletronicamente, o(s) código(s) de barras (16) ou (17) e (18) dessa cédula (14), extraindo as assinaturas digitais institucionais.

Confirmado que aquela assinatura foi gerada pela chave privada emitida para a assinatura digital institucional, ou seja, após confirmada a procedência eletrônica da cédula (14), a mesma é sugada pelo dispositivo mecânico da entrada de confirmação de voto (9) e armazenada de forma aleatória na urna coletora independente (11). Essa verificação da assinatura evitará que o equipamento seja alimentado por cédulas não produzidas oficialmente.

Concluída a operação de coleta de voto, o equipamento (1) envia sinal digital para o sistema eleitoral gravar o registro digital do voto e encerrar a possibilidade de um novo voto para aquele eleitor. Dessa forma é computado normalmente o voto.

Caso o eleitor não concorde com a cédula impressa (14) do voto, desistindo ou percebendo que se enganou e pretendendo corrigir esse voto,

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o eleitor vai inserir a referida cédula (14) na entrada (10) verificadora e fragmentadora de voto impresso rejeitado e, após o equipamento (1) confirmar a assinatura produzida pela chave privada das instituições e confirmada a procedência da cédula (14), a mesma é então sugada e triturada e os dejetos de papel serão armazenados na urna ecológica (12), enviando um sinal para o sistema eleitoral instalado no computador do equipamento (1) cancelar o voto digital e reiniciar o processo de identificação do eleitor, retornando todo o processo de votação ao estágio inicial.

Com isso é possibilitada a correção do voto impresso pelo próprio eleitor. Nesse caso, o voto rejeitado não é computado no banco de dados do sistema, evitando contagem errada ao final da votação e permitindo que o eleitor tenha nova chance ou opção de votar, sem contaminar todo o processo com cédulas rejeitadas pelos eleitores.

Caso o eleitor seja analfabeto, o mesmo poderá votar utilizando santinhos com código de barras bidimensional previamente distribuídos pelos candidatos.

Após a dupla identificação biométrica, o eleitor analfabeto em posse desse material publicitário impresso pelos candidatos com código de barras bidimensional, vai inserir o santinho na entrada (10) verificadora trituradora, visualizando a foto de seu candidato na tela (2), repetindo a operação até o final do processo, quando será impressa a cédula (14) de segurança a ser confirmada imediatamente pelo eleitor sem instrução, que

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devera ser orientado a inserir a cédula (14) do voto na entrada de confirmação de voto (9).

O mesmo procedimento de leitura de santinhos poderá ser utilizado para auxilio ao voto dos eleitores com deficiência visual, porém, ao invés de confirmar o voto apresentado na tela (2), o eleitor deficiente visual confirmará seu voto digital através de um fone de ouvido (F), que repassará as instruções de manuseio do equipamento (1) para confirmação do voto, instruindo o eleitor deficiente até o completo processo do voto digital e destinação do voto impresso, que também será transcrito pelo código em Braille (18), na interface verificadora coletora (9). O eleitor deficiente visual também poderá inserir o voto através do teclado mecânico (T), que está conectado ao equipamento (1).

Em todas as situações em que voto impresso é confirmado, o eleitor poderá imprimir, ao final do processo, um comprovante de comparecimento, oriundo da bobina de papel (7) instalada na parte inferior do equipamento (1), que será fornecida através da saida (8) da impressora.

Como se observa, pelo sistema proposto é eliminada a figura do mesário.

Após o encerramento da votação, urna coletora independente (11) de cédulas confirmadas, ou seja, de voto confirmado, é então sacada do equipamento de votação (1) e levada para o ambiente de auditoria, escrutinio e totalização dos votos, conforme mostra a figura 5.

Nesse outro ambiente, a urna coletora independente (11) de cédulas

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confirmadas é acoplada, como mostra a figura 5, no EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA (19), quando então é iniciado o processo de auditoria e contabilidade dos votos.

Este equipamento (19), também objeto da presente patente, como é mostrado em especial pelas figuras 6 e 7 e também pela figura 5, é composto, em uma de suas laterais, por uma entrada (20) de urna coletora independente (11), dispositivo de leitura/gravação de RFID (21) e uma entrada de cédulas auditadas (22). Na outra lateral possui impressora (23) e monitor LCD (24), reaproveitado das Urnas Eletrônicas.

No interior, o equipamento (19) possui um leitor ótico de OCR e QR code e uma CPU (25) e dispositivos embaladores (26), comunicantes, na outra lateral, com uma saída (27) de cédulas embaladas que receberão uma identificação RFID a ser aplicada pelo etiquetador (28).

O equipamento (19) será alimentado pelas informações trazidas na urna armazenadora independente (11), ou pelas cédulas de segurança impressas (14) com lacre, em um processo de auditoria, tendo diferentes funções exercidas numa mesma rotina automatizada mecanicamente.

Caso o lacre da urna coletora independente (11) de confirmação de voto tenha indícios de violação, o equipamento (19) emite aviso sonoro e em texto no LCD, sendo a referida urna coletora independente (11) remetida para comissão apuradora, que decidirá sobre o prosseguimento ou não de sua apuração.

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A primeira função do EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA (19) é receber a urna coletora independente (11) pela entrada (20) e verificar a procedência do lacre da urna coletora independente (11) através do dispositivo (21) rádio frequência e, confirmada a relação entre o chip e a seção eleitoral, os votos impressos são automaticamente retirados da referida urna coletora independente (11).

As cédulas (14) passam então pelo leitor ótico (25), que fará a leitura dos códigos de barras (16), (17) ou (18), extraindo e verificando as assinaturas digitais, e comparando às informações do voto em texto às informações do voto codificado em código de barras.

Após auditoria comparativa, o voto impresso é então contabilizado eletronicamente e enviado para um módulo (26) onde, junto com as demais cédulas (14) da seção eleitoral em escrutínio, serão armazenadas. Concluída a apuração total dos votos, as cédulas sairão lacradas em plástico e enviados para saída (27), formando um bloco de papel (29), como mostra a figura 8, que receberá, na etiquetadora (28), um chip de rádio frequência, concluindo assim o processo de auditoria e escrutínio eletrônica das cédulas impressas.

A entrada de votos em auditoria (22), receberá as cédulas que necessitaram de outro processo de inspeção. O procedimento de apuração de cédulas auditadas é similar ao procedimento de cédulas coletadas, diferenciando apenas na origem das informações de identificação rádio

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frequência, ou seja, ao invés de ler o lacre RFID da urna independente, a interface fará a leitura de um identificador RFID de um bloco de cédulas onde se detectou a necessidade de uma auditoria mais refinada.

Para efeito de segurança, o EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA (19) é desprovido de dispositivo de entrada, possuindo somente o disco armazenador dos programas de controle dos engenhos mecatrônicos e de interpretação, auditoria e contabilidade de votos impressos.

Relatórios, alertas e o boletim de totalização serão todos emitidos em texto e código de barras bidimensional através da impressora e registrados no arquivo de log da máquina.

Têm-se como objetivo que este segundo equipamento da presente patente seja fabricado utilizando componentes eletrônicos como processadores, memória, impressora, tela LCD e os componentes plásticos reaproveitados do processo de reciclagem das urnas eletrônicas atuais, que serão substituídas por computadores ou tablets no amadurecer do processo de implantação dos novos equipamentos de votação eletrônica e mecânica objetos desta patente.

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REIVINDICAÇÕES

1) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", sendo um equipamento (1) envolto por cabine de votação (C) passível de conexão à urna eletrônica (U), **caracterizado** por configuração de computador com teclado reversível com tela "touch screen" ou "tablet" (2), fone de ouvido (F), câmera (3) de reconhecimento biométrico da face do eleitor e conectado a teclado mecânico (T), dito equipamento (1) dotado, também, de bancada com leitor biométrico de quatro dedos (4), armazenador de cédulas virgens (5) conectado à impressora (6) alimentada por bobina de papel (7), ambas comunicantes com uma saída (8) de impressora, dita bancada possuindo, ainda, entrada (9) verificadora e coletora de cédulas impressas de voto confirmado pelo eleitor, além de uma entrada (10) verificadora e fragmentadora de cédula impressa porém rejeitada (anulada) pelo eleitor, sendo a referida entrada (9) ligada à uma urna coletora independente (11) de cédulas confirmadas e verificadas pelo sistema e, a entrada (10) ligada à uma urna ecológica (12) receptora dos fragmentos dessas cédulas impressas porém rejeitadas pelos eleitores, dito equipamento (1) completado por um segundo "tablet" (13), instalado com software desenvolvido por uma entidade auditora do processo eleitoral, contendo as chaves públicas dos equipamentos, para verificação eletrônica (pelo próprio eleitor), do voto impresso em código de barras bidimensional.

2) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE

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SEGURANÇA DO VOTO", de acordo com reivindicação 1, o equipamento (1), de uso com mesa receptora de votos, formar um sistema **caracterizado** pela coleta do voto eletrônico e de voto impresso em papel, com dupla identificação biométrica, em acionamento pelo próprio eleitor.

3) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, **caracterizado** por, após manuseado o teclado pelo eleitor, ser produzida (3) cédula impressa (14) com voto completo codificado em código de barras bidimensional, com assinaturas digitais da Justiça Eleitoral e de outra instituição auditora do processo (15), além de códigos de barras (16) e (17), de tamanho menor e capacidade de armazenamento reduzida e, ainda, código eletrônico em braile (18).

4) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, ocorrer conferência eletrônica pelo equipamento (1) e também pelo segundo "tablet" (13), **caracterizado** pela cédula (14) ser inserida na entrada de confirmação de voto (9) e armazenada de forma aleatória na urna coletora independente (11), com envio de sinal digital para gravação do registro digital do voto pelo sistema eleitoral.

5) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, em caso de correção de voto, **caracterizado** pela inserção da cédula (14) na entrada (10) para trituração e envio de sinal digital para o sistema eleitoral, para

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cancelamento de voto, sem ser computado, e reinício do processo de votação.

6) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, em caso de eleitor de analfabeto, caracterizado pelo uso de santinhos com código de barras bidimensional com dupla identificação biométrica, seguindo-se a inserção na entrada (10) verificadora trituradora, visualizando a foto de seu candidato na tela (2), repetindo a operação até o final do processo, para impressão da cédula (14) e confirmação pela entrada de confirmação de voto (9).

7) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO", de acordo com reivindicação 2, em caso de eleitores com deficiência visual, caracterizado pelo lançamento do voto através de santinhos com códigos de barras ou através do teclado mecânico (T), e confirmação do voto através do fone de ouvido (F), inserindo a cédula (14) com o voto transcrito em código Braille (18) na entrada coletora (9) ou na entrada trituradora (10).

8) "EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO" de acordo com reivindicação 2, após emissão de comprovante de voto através de saída (8) da impressora, caracterizado pela urna coletora independente (11) com as cédulas (14) armazenadas, ser retirada e introduzida na entrada (20) do EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE

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SEGURANÇA dotado também de leitor/gravador de RFID (21), entrada de cédulas auditadas (22) possuindo, na outra lateral, impressora (23) e monitor LCD (24) e, em seu interior, um leitor ótico de OCR e QR code e uma CPU (25) e dispositivos embaladores (26), comunicantes, na outra lateral, com uma saída (27) de cédulas embaladas, passíveis de receber identificação RFID por etiquetador (28).

9) "EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA", de acordo com reivindicações 2 e 8, formar um sistema **caracterizado** por ler as informações trazidas na urna coletora independente (11) através do dispositivo (21) rádio frequência e, caso hajam indícios de violação, ser emitido aviso sonoro e em texto no LCD, para reavaliações eleitorais.

10) "EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA", de acordo com reivindicação 9, **caracterizado** pela leitura dos códigos de barras (16), (17) ou (18), e contabilização eletrônica das cédulas (14), armazenadas no módulo (26), seguindo-se o lacre, formando um bloco (29) expulso pela saída (27), recebendo, na etiquetadora (28), um chip de rádio frequência, de uso com mesa receptora de votos, formar um sistema **caracterizado** pela coleta do voto eletrônico e de voto impresso em papel, com dupla identificação biométrica, em acionamento pelo próprio eleitor.

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RESUMO

"EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA", onde um equipamento (1) forma um sistema que possibilita ao próprio eleitor, votar e obter uma cédula de impressão (14) pela qual serão confirmados, o voto eletrônico e a impressão, através de códigos de barra (15), (16), (17) e (18) nela gravados. Tal cédula (13) é transferida para um segundo equipamento (19), de apuração de votos, onde tais informações serão lidas, formando um sistema de armazenamento eletrônico e impresso, em total interação e passível de ser auditado, caso hajam dúvidas em relação a fraudes, trazendo total segurança ao sistema eleitoral.

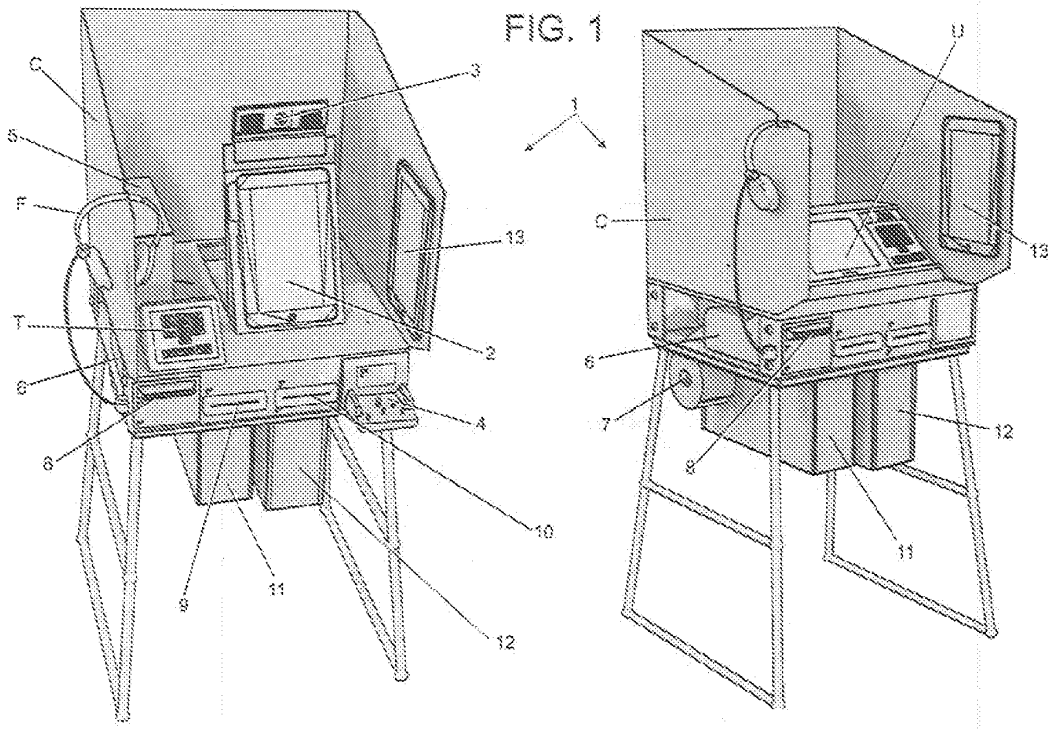
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FIG. 1



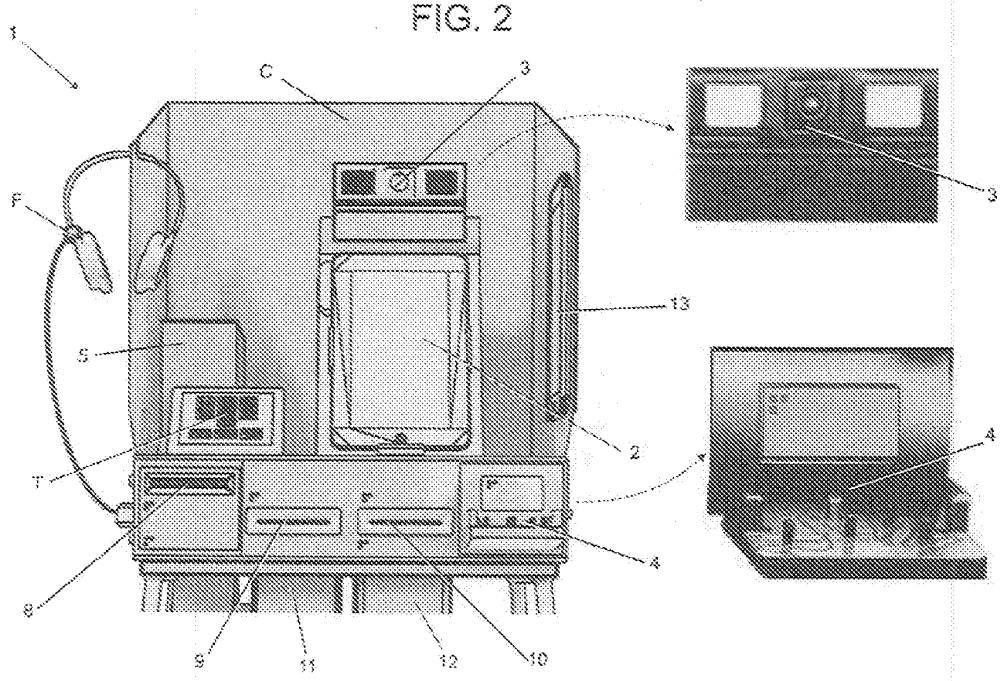
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FIG. 2



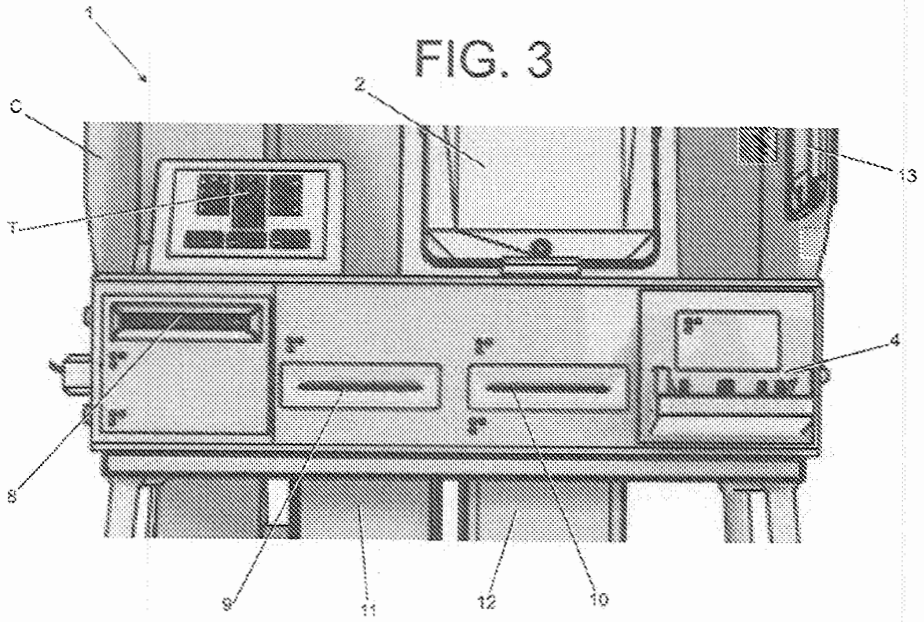
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FIG. 3



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FIG. 4

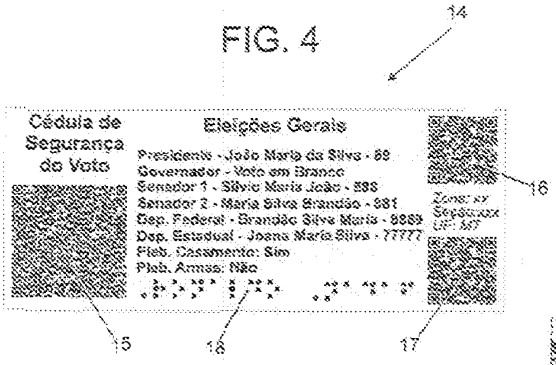
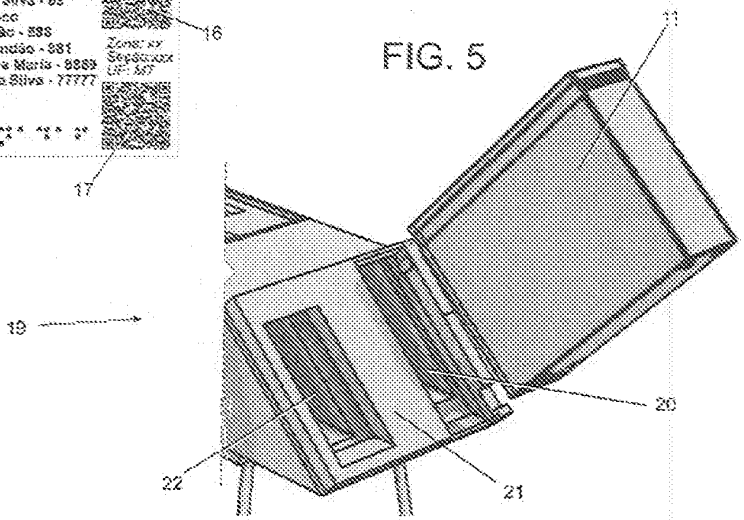

14
Cédula de Segurança do Voto
Eleições Gerais
Presidente - João Maria da Silva - 88
Governador - Voto em Branco
Senador 1 - Silvio Maria João - 888
Senador 2 - Maria Silva Brandão - 881
Dep. Federal - Brandão Silva Maria - 8888
Dep. Estadual - Joana Maria Silva - 77777
Pleb. Casamento: Sim
Pleb. Armas: Não
16
15
18
17
416

FIG. 5


11
19
20
22
21

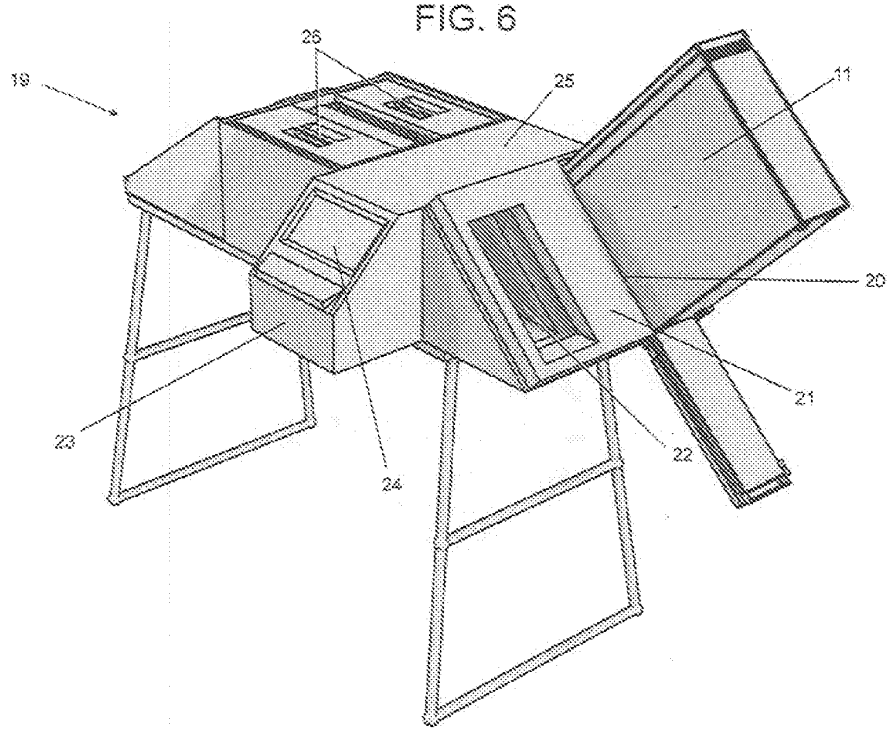
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FIG. 6



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FIG. 7

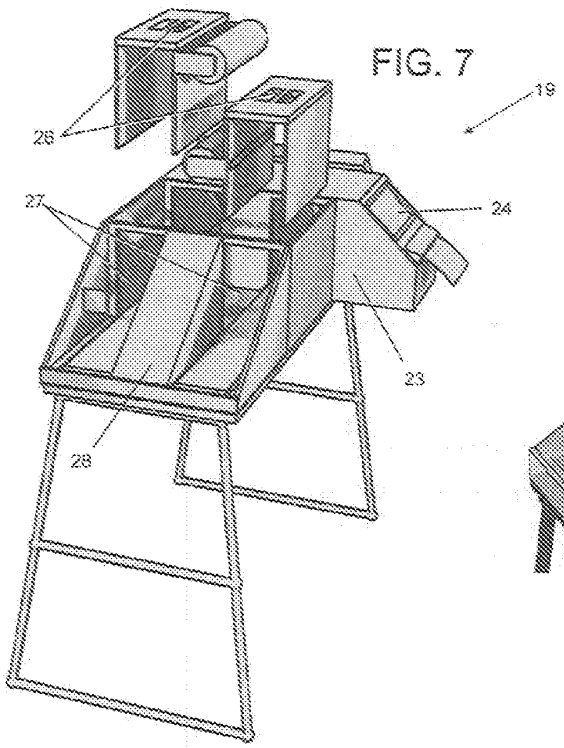
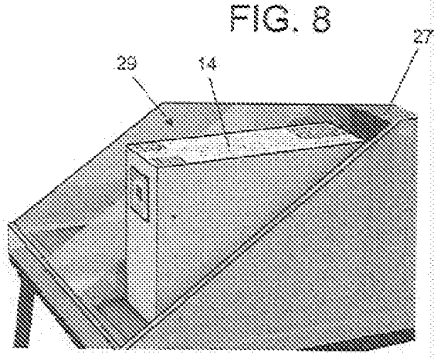


FIG. 8



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MINISTÉRIO DO DESENVOLVIMENTO, INDÚSTRIA E COMÉRCIO EXTERIOR
INSTITUTO NACIONAL DA PROPRIEDADE INDUSTRIAL

EXAME PRELIMINAR

N.º do Pedido: BR102013018558-2
Data de Depósito: 19/07/2013

O pedido atende formalmente as disposições legais, especialmente quanto ao Art. 19 da LPI e a Instrução Normativa 17/2013, estando apto a ser protocolado.

Condições do Pedido	S	N
Requerimento de depósito com os campos obrigatórios preenchidos	X	
Idioma Português	X	
Relatório Descritivo	X	
Reivindicações	X	
PI e C – Apresenta desenhos citados ou não cita nem apresenta desenhos. MU – Apresenta desenhos.	X	
Resumo	X	
Formatado no padrão exigido	X	
Valor correto de Recolhimento	X	

Rio de Janeiro, 8 de outubro de 2013.

Bruno Hugo Cerqueira da Fonseca
Mat. Nº 1529020
DIRPA / COSAP/SEFOR

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 191

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brunoh | Despacho: 2.1 | Pedido: BR102013018558-2

Nº do Pedido (21) :	102013018558-2
Data do Depósito (22) :	19/07/2013
Nome do Depositante (71) :	Romaldo Moises Nadaf (BR/MT)
Procurador (74) :	MODAL MARCAS E PATENTES LTDA
Publicação na RPI (200):	Publicado na RPI nº 2236 de 12/11/2013.

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Nº do Pedido (21) :	102013018558-2
Data do Depósito (22) :	19/07/2013
Classificação Internacional (51) :	G07C 13/00, G06K 9/46, G06Q 50/00
Título (54) :	EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA
Resumo (57) :	EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA", onde um equipamento (1) forma um sistema que possibilita ao próprio eleitor, votar e obter uma cédula de impressão (14) pela qual serão confirmados, o voto eletrônico e a impressão, através de códigos de barra (15), (16), (17) e (18) nela gravados. Tal cédula (13) é transferida para um segundo equipamento (19), de apuração de votos, onde tais informações serão lidas, formando um sistema de armazenamento eletrônico e impresso, em total interação e passivel de ser auditado, caso hajam dúvidas em relação à fraudes, trazendo total segurança ao sistema eleitoral.
Nome do Depositante (71) :	Ronaldo Moises Nadaf (BR/MT)
Nome do Inventor (72) :	Ronaldo Moises Nadaf
Procurador (74) :	MODAL MARCAS E PATENTES LTDA
Publicação na RPI (200):	Publicado na RPI nº 2278 de 02/09/2014.

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06/02/2020 870200017787 15:11

29409161915662515

Cópia oficial para efeito de reivindicação de prioridade unionista

Número do Processo: BR 10 2013 018558 2

Dados do Depositante (71)

Depositante 1 de 1

Nome ou Razão Social: STINSON LEONARD STREET LLP

Tipo de Pessoa: Pessoa Jurídica

CPF/CNPJ: US0022368952

Nacionalidade: Norte Americana

Qualificação Jurídica: Pessoa Jurídica

Endereço: 7700 Forsyth Boulevard, Suite 1100- St. Louis - Missouri - 63105-1821

Cidade:

Estado:

CEP:

País: Estados Unidos da América

Telefone:

Fax:

Email: fpereira@dannemann.com.br

Referência Petição

Pedido : BR102013018558-2

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☑ Papel

Email:

PETICIONAMENTO ELETRÔNICO

Esta solicitação foi enviada pelo sistema Peticionamento Eletrônico em 06/02/2020 às 15:11, Petição 870200017787

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Dados do Procurador

Procurador:

Nome ou Razão Social: Roberto Da Silveira Torres Junior
Numero OAB: 091617RJ
Numero API: 1367
CPF/CNPJ: 90888740778
Endereço: Rua Marquês de Olinda, nº 70 - Botafogo
Cidade: Rio de Janeiro
Estado: RJ
CEP: 22251-040
Telefone: (21) 2237-8700
Fax: 2553-1812
Email: rtorres@dannemann.com.br

Escritório:

Nome ou Razão Social: Dannemann, Siemsen, Bigler & Ipanema Moreira
CPF/CNPJ: 33163049000114

Documentos anexados

Tipo Anexo	Nome
Comprovante de pagamento	Guia Paga - CO TEMP0097014.pdf.pdf
Esclarecimento	ESCLARECIMENTO - COPIA OFICIAL - TEMP0097014.pdf
Procuração	Procuração INPI - DSBIM_compressed.pdf

Declaração de veracidade

☑ Declaro, sob as penas da lei, que todas as informações acima prestadas são completas e verdadeiras.

PETICIONAMENTO ELETRÔNICO Esta solicitação foi enviada pelo sistema Peticionamento Eletrônico em 06/02/2020 às 15:11, Petição 870200017787

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Rio de Janeiro, 13 Fevereiro de 2020.

Flávia Romano Villa Verde
Chefe DIDOC
Mat. 1480674

Processo: BR102013016558-2

Serviço: Cópia oficial para efeito de reivindicação de prioridade unionista -



29409161915662515

Emissor: RIS

IRN: TEMP0097914

Stinson Leonard Street LLP CPF/CNPJ: US0622368992

Endereço: 7700 Forsyth Boulevard, Suite 1100 St. Louis MO, US/ , 63105-182

BANCO DO BRASIL | 001-9 | RECIBO DO SACADO

Nome do Pagador/CPF/CNPJ/Endereço
CPF/CNPJ: 33193049000114

RUA MARQUES DE OLINDA 75, RIO DE JANEIRO/RJ, CEP: 22251-040
Sacador/Avalista

Nosso Número	No documento	Data de Vencimento	(=) Valor documento	(=)Valor Pago
29409161915662515	29409161915662515	06/03/2020	135,00	135,00

Nome do Beneficiário/CPF/CNPJ/End
Instituto Nacional da Propriedade Industrial CPF/CNPJ: 42.521.088.0001-67
PRACA MAUA 7 - 14 ANDAR - SALA 1415 CENTRO RIO DE JANEIRO 20081240 RJ

Agência/Código cedente
2234-9/333.028-1

Autenticação mecânica

Endereço: 7700 Forsyth Boulevard, Suite 1100 St. Louis MO, US/ , 63105-182

Bradesco

Comprovante de pagamento de boleto de cobrança

Número comprovante.....: 815.693
Meio de pagamento.....: Captura eletronica via CBCA
Número do retorno.....: 27.915

Linha digitável.....:
Cedente.....: INPI-Instituto Nacional da Propriedade Industrial

Data vencimento.....: 05/03/2020
Data pagamento.....: 06/02/2020
Valor pago.....: R$ 135,00
Agência/conta débito.....: 03393/011104152

Código de barras.....:

o valor referente ao pagamento foi debitado da conta acima identificado.

Recomendamos que seja feita conciliação de conta corrente relativa ao pagamento.

Conciliação conta corrente x Pagamento boleto cobrança:
[ ] Pagamento conciliado
[ ] Pagamento não conciliado

Havendo divergência, contatar com o Gerente Bradesco de sua Agência.

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Mat. 1480674

ESCLARECIMENTO

Cópia Oficial para efeito de reivindicação de Prioridade Unionista.

Solicito 01 (uma) cópia oficial emitida em papel do pedido ***BR 10 2013 018558-2***, pois a cópia oficial em formato eletrônico não é aceita no Escritório.

Rio de janeiro, 06 de fevereiro de 2020.

TEMP0067014

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DANNEMANN-155

PROCURAÇÃO bastante que faz DANNEMANN, SIEMSEN, BIGLER & IPANEMA MOREIRA, PROPRIEDADE INDUSTRIAL LTDA., na forma abaixo:

CERTIDÃO
Livro: 0956 folhas: 138/141 ato: 74 data: 27/12/2019

SABAM quantos este público instrumento de procuração bastante virem que, no ano dois mil e dezenove dos 27(vinte e sete) dias do mês de Dezembro na cidade do Rio de Janeiro, Estado do Rio de Janeiro, perante mim, **RICARDO DA SILVA DINIZ**, Substituto do 13º Ofício de Notas, que tem sede na Av. Rio Branco nº 135/3º andar, compareceu como **OUTORGANTE**: DANNEMANN, SIEMSEN, BIGLER & IPANEMA MOREIRA, PROPRIEDADE INDUSTRIAL LTDA., sociedade de agentes da propriedade industrial, com escritório na Rua Marquês de Olinda, 70, nesta cidade, inscrita no CNPJ sob o n.º 33.163.049/0001-14, neste ato representada por seus sócios e Gerentes Executivos, **Luiz Henrique Oliveira do Amaral**, brasileiro, casado, advogado, filho de Humberto Rabello do Amaral e Ana Vera Oliveira do Amaral, portador da carteira de identidade n.º 53.759, expedida pela OAB/RJ, inscrito no CPF/MF sob o n.º 351.499.907-44, endereço eletrônico amaral@dannemann.com.br domiciliado nesta cidade, à Rua Marquês de Olinda, 70 e **Carlos Cezar Cordeiro Pires**, brasileiro, solteiro, vivendo em união estável, filho de Carlos Pires e Dejanira Cordeiro Pires, engenheiro, portador da carteira de identidade n.º 82100473-6, expedida pelo CREA/RJ, inscrito no CPF/MF sob o n.º 752.030.347-87, correio eletrônico cpires@dannemann.com.br domiciliado à Rua Marquês de Olinda, 70 – Botafogo; reconhecidos como os próprios pelos documentos que me foram exibidos, do que dou fé, bem como de que pela mandante foi dito que por este instrumento nomeava e constituía como procuradores da sociedade: **Peter Dirk Siemsen**, brasileiro, viúvo, agente de propriedade industrial, API nº161, filho de Peter Erik Siemsen e Felicitas Elisabeth Hedwig Bellingrodt Siemsen, portador da carteira de identidade n.º 9015, expedida pela OAB/RJ, inscrito no CPF/MF sob o n.º 000.638.067-72; **Raul Hey**, brasileiro, casado, agente da propriedade industrial, filho de Perle Raul Hey e Olga Hey, API n.º 137, portador da carteira de identidade n.º 66.370, expedida pela OAB/RJ, inscrito no CPF/MF sob o n.º 430.330.327-53; **Ivan Bacellar Ahlert**, brasileiro, casado, agente da propriedade industrial, filho de Heinz Wolfgang Ahlert e Maryse Bacellar Ahlert, API n.º 204, portador da carteira de identidade n.º 04.335.754-0, expedida pelo IFP, inscrito no CPF/MF sob o n.º 752.030.737-91; **Peter Eduardo Siemsen**, brasileiro, casado, agente da propriedade industrial, API n.º 268, filho de Peter Dirk Siemsen e Maria Thereza Siemsen, portador da carteira de identidade n.º 86.985, expedida pela OAB/RJ, inscrito no CPF/MF sob o n.º 014.669.397-37;**Elisabeth Siemsen da Amaral**, brasileira, casada, agente da propriedade industrial, API n.º 202 filha de Peter Dirk Siemsen e Maria Thereza Siemsen, portadora da carteira de identidade n.º 3.999.974-3, expedida pelo IFP, inscrita no CPF/MF sob o n.º 790.599.177-72; **Attilio José Ventura Gorini**, brasileiro, casado, agente da propriedade industrial, API nº 160, filho de Attilio José Aguiar Gorini e Lygia Ventura Gorini, portador da carteira de identidade OAB/RJ nº 87.468, inscrito no CPF/MF sob o nº 043.026.157-68; **Joaquim Eugênio Gomes da Silva Goulart Pereira**, brasileiro, casado, agente da propriedade industrial, API nº 192, filho de Carlos Eduardo Barbero Goulart Pereira e Sandra Gomes da Silva Goulart Pereira, portador da carteira de identidade OAB/RJ nº 85.629, inscrito no CPF/MF sob o nº 024.876.747-09; **Markus Michael de Mendonça Wolff**, brasileiro, casado, agente da propriedade industrial, APO nº 1651, filho de Kurt Juergen Wolff e Maria Thereza Mendonça Wolff, portador da carteira de identidade nº 85101371?-D, expedida pelo CREA/RJ, inscrito no CPF/MF sob o nº 667.230.547-49; **José Marcelo de Oliveira Fernandes**, brasileiro, casado, agente da propriedade industrial, API nº 1822, filho de José Fernandes e Maria Alice de Oliveira Fernandes, portador da carteira de identidade nº 006.972.983-8, expedida pelo Detran/RJ, inscrito no CPF/MF sob o nº 020.575.407-40; **Bruno Lopes Hollinger**, brasileiro, solteiro, agente da propriedade industrial, API nº 1562, filho de Pal Csaba Hollinger e Belkis Lopes Hollinger, portador da carteira de identidade nº 149524, expedida pela OAB/RJ, inscrito no CPF/MF sob o nº 078743457-39; **Mauricio Teixeira Desiderio da Silva**, brasileiro, casado, agente da propriedade industrial, API 1675, filho de Jair Desiderio da Silva e Marialva Teixeira Desiderio da Silva, portador da carteira de identidade nº 081112?7-1, inscrito no CPF/MF sob o nº 008436137-93; **Marc Hargen Ehlers**, brasileiro, casado, agente da

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propriedade industrial, API nº 1679, filho de Wulf Hargen Ehlers e Ana Maria Ehlers, portador da carteira de identidade nº 169.618, expedida pela OAB/RJ, inscrito no CPF/MF sob o nº 083.576.797-30; **Roberto da Silveira Torres Junior**, brasileiro, casado, agente da propriedade industrial, API nº1367, filho de Roberto da Silveira Torres e Sônia Maria Barreto Torres, portador da carteira de identidade nº 91.617, expedida pela OAB/RJ, inscrito no CPF/MF sob o nº 908.887.407-78; **Maria Maura Malburg**, brasileira, solteira, agente de propriedade industrial, API nº 1835, filha de Carlos Henrique Reis Malburg e Tereza Cristina Moura Malburg, portadora da carteira de identidade IFP/RJ nº 112713987, inscrita no CPF/MF sob o nº 091.291.057-73; **Mariana Mostardeiro**, brasileira, solteira, agente de propriedade industrial, API nº 2218, filha de Rene Mostardeiro Filho e Maria Elisa Salomão Mostardeiro, portadora da carteira de identidade OAB/RJ nº204.387, inscrita no CPF/MF sob o nº 080.600.407-07; **Pedro Paulo Rebelo Moreira**, brasileiro, casado, agente da propriedade industrial, API nº 2235, filho de José Arthur Guimarães Moreira e Lucia Helena Rebelo Moreira, portador da carteira de identidade IFP nº 09534939?, inscrito no CPF/MF sob o nº 079.282.137-88; **Monique Rodrigues Teixeira**, brasileira, solteira, agente de propriedade industrial, API nº 2225, filha de Weliton Estevan Teixeira e Marlene Rodrigues da Silva, portadora da carteira de identidade IFP nº11328049-9, inscrita no CPF/MF sob o nº 103.260.487-58; **Ursula Torres Trindade de Almeida**, brasileira, casada, agente de propriedade industrial, API nº2264, filha de Mario Trindade Junior e Cristina de Lima Torres Trindade, portadora da carteira de identidade DIC/RJ nº12.259.536-6, inscrita no CPF/MF sob o nº 98.129.437-57; **Eduardo da Gama Câmara Junior**, brasileiro, casado, agente da propriedade industrial, API nº 376, filho de Eduardo da Gama Camara e Yurie Manceba Camara, portador da carteira de identidade nº 125.140, expedida pela OAB/RJ, inscrito no CPF/MF sob o nº 021.402.797-00;**Felipe Dannemann Lundgren**, brasileiro, casado, agente de propriedade industrial, API nº 1917, filho de Frederico Axel Lundgren e Beatriz Eloisa Dannemann Lundgren, portador da carteira de identidade OAB/RJ nº 134.774, inscrito no CPF/MF sob o nº 088.832.657-26; **Fernanda Salomão Mascarenhas Magalhães**, brasileira, divorciada, não vive em união estável, agente de propriedade industrial, API nº2162, filha de Flávio Cesar Barba Mascarenhas e Anna Elizabeth Salomão Mascarenhas, portadora da carteira de identidade OAB/RJ nº 149.741, inscrita no CPF/MF sob o nº 052.946.397-35; **Filipe Fonteles Cabral**, brasileiro, casado, agente da propriedade industrial, API nº 1598, filho de Eugenio Cesar Fonteles Cabral e Sandra Maria Fonteles Cabral, portador da carteira de identidade nº 108.901, expedida pela OAB/RJ, inscrito no CPF/MF sob o nº 076.942.357-85; **Gustavo Heñor Piva Luiz de Andrade**, brasileiro, casado, agente de propriedade industrial, API nº 1718, filho de Alexandre Luiz de Andrade e Maria Cristina Teixeira Piva de Andrade, portador da carteira de identidade OAB/RJ nº 119.932, inscrito no CPF/MF sob o nº 889.833.601-34; **Alvaro Loureiro Oliveira**, brasileiro, solteiro, agente da propriedade industrial, API n.º 168, filho de Joaquim da Silva Oliveira e Maria de Jesus Loureiro Oliveira, portador da carteira de identidade n.º 59.439, expedida pela OAB/RJ, inscrito no CPF/MF sob o n.º 768.220.607-15; **Ana Lúcia de Sousa Borda**, brasileira, casada, agente da propriedade industrial, API n.º 153, filha de Armando de Sousa Lima e Adolina Silvina Lima , portadora da carteira de identidade n.º 71.312, expedida pela OAB/RJ, inscrita no CPF/MF sob o n.º 546.779.637-20; **Ana Sylvia Batista Coelho Alves**, brasileira, solteira, agente de propriedade industrial, API nº 1980, filha de Antonio José Coelho Alves e Ana Aparecida Batista Coelho Alves, portadora da carteira de identidade OAB/RJ nº 148.391, inscrita no CPF/MF sob o nº 090.530.197-82; **Cândido Ribeiro Caffé**, brasileiro, casado, agente da propriedade industrial, API nº 1579, filho de Dalton Torres Caffé Filho e Maria Odete Meireles Ribeiro Caffé, portadora da carteira de identidade nº 110.484, expedida pela OAB/RJ, inscrita no CPF/MF sob o nº 079.632.487-54; **José Henrique Vasi Werner**, brasileiro, casado, agente da propriedade industrial, API n.º 225, filho de José Luiz de Avellar Werner e Maria Victoria Vasi Werner, portador da carteira de identidade n.º 83.235, expedida pela OAB/RJ, inscrito no CPF/MF sob o n.º 021.005.347-00; **Marcelo Leite da silva Mazzola**, brasileiro, casado, agente de propriedade industrial, API nº 17◆1, filho de Marco Aurélio da Silva Mazzola e Maria Marta Leite da Silva, portador da carteira de identidade OAB/RJ nº 117.407, inscrito no CPF/MF sob o nº 053.655.257-90; **Marcos Velasco Figueiredo**, brasileiro, casado, agente da propriedade industrial, API n.º 136, filho de Paulo Miranda de Figueiredo Filho e Beatriz Maria Velasco Figueiredo, portador da carteira de identidade n.º 61.424, expedida pela OAB/RJ, inscrito n◆ CPF/MF sob o n.º 407.067.340-87; **Maria Isabel Coelho de Castro Bingemer**, brasileira, casada, agente da propriedade industrial, API nº 1961, filha de Francisco Luiz de Castro e Francisca Drummond Coelho de

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Castro, portadora da carteira de identidade OAB/RJ nº 102.961 e inscrita no CPF/MF sob o n.º 959.992.309-00; **Mariana Reis Abenza**, brasileira, solteira, vivendo em união estável, agente de propriedade industrial, API nº 2006, filha de Francisco Abenza Martinez e Cláudia Reis Abenza, portadora da carteira de identidade OAB/RJ nº 123.279, inscrita no CPF/MF sob o nº 086.736.047-02; **Maura Ivan Coelho Ribeiro dos Santos**, brasileira, casada, agente da propriedade industrial, API n.º 195, filha de Ivan Ribeiro dos Santos e Regina Dias Coelho dos Santos, portador da carteira de identidade n.º 87.519, expedida pela OAB/RJ, inscrita no CPF/MF sob o n.º 029.279.717-65; **Rafael Afab de Araújo**, brasileiro, casado, agente de propriedade industrial, API nº 1638, filho de Sinval Miguens de Araújo e Ione Afab de Araújo, portador da carteira de identidade OAB/RJ nº 119.920, inscrito no CPF/MF sob o nº 053.066.857-22; **Rafael Dias de Lima**, brasileiro, casado, agente da propriedade industrial, API nº 1570, filho de Rogério Gomes de Lima e Vania Dias de Lima, portador da carteira de identidade nº 108.669, expedida pela OAB/RJ, inscrito no CPF/MF sob o nº 074.049.717-05; **Rafaela Borges Walter Carneiro**, brasileira, casada, filha de Franklin Vieira Walter e Vera Maria Borges Walter, agente da propriedade industrial, API n.º 139, portadora da carteira de identidade n.º 79.063, expedida pela OAB/RJ, inscrita no CPF/MF sob o n.º 020.496.067-80; **Roberta Xavier da Silveira Calazans**, brasileira, casada, agente de propriedade industrial, API nº 1540, filha de Paulo Roberto Calazans e Heloísa Xavier da Silveira Calazans, portadora da carteira de identidade OAB/RJ nº 103.650, inscrita no CPF/MF sob o nº 035.349.347-69; **Rodrigo Borges Carneiro**, brasileiro, casado, agente da propriedade industrial, API n.º 138, filho de Paulo Cezar Porto Carneiro e Carmen Silva Pereira Borges, portador da carteira de identidade n.º 87.130, expedida pela OAB/RJ, inscrito no CPF/MF sob o nº 023.446.567-97; **Roberta de Magalhães Fonteles Cabral**, brasileira, casada, agente de propriedade industrial, API nº 1965, filha de Roberto Pimentel Magalhães e Ana Maria e Sá Cabral Moreira Magalhães, portadora da carteira de identidade OAB/RJ nº 133.459, inscrita no CPF/MF sob o nº 055.275.237-17; **Rodrigo de Assis Torres**, brasileiro, casado, agente de propriedade industrial, API nº 2013, filho de Carlos Frederico Vieira Torres e Maria Cristina de Assis Torres, portador da carteira de identidade OAB/RJ nº 121.429, inscrito no CPF/MF sob o nº 053.436.797-65; **Sandra Leis**, brasileira, divorciada, não vive em união estável, agente da propriedade industrial, API nº 1366, filha de Rolando Fritz Leis e Hildegard Bertha Linda Leis, portadora da carteira de identidade nº 99.923, expedida pela OAB/RJ, inscrita no CPF/MF sob o nº 749.235.957-87; **Henrique Steuer Imbassahy de Mello**, brasileiro, casado, agente da propriedade industrial, API n.º 375, filho de Abdelé Imbassahy de Melo e Elfride Erika Steuer Imbassahy de Melo, portador da carteira de identidade 211.110, expedida pela OAB/SP, inscrito no CPF/MF sob o n.º 004.996.317-16; **Adriana Diogo de Ipanema Moreira**, brasileira, solteira, não vive em união estável, agente da propriedade industrial - API 1.578, filha de Carlos Eduardo de Ipanema Moreira e Mynora Diogo de Ipanema Moreira, identidade OAB/RJ 100.416 e CPF/MF 016.796.607-47; **Bernardo Marinho Fontes Alexandre**, brasileiro, casado, agente da propriedade industrial - API 2.125, filho de Francisco de Assis Alexandre e Rosângela Conceição Marinho Fontes, identidade OAB/RJ 218.707 e CPF/MF 103.060.037-56; **Eduardo Cezar de Andrade de Mello e Souza**, brasileiro, casado, agente de propriedade industrial API nº 2.150, filho de Paulo Abreu Fialho de Mello e Souza e de Maria Cristina Cezar de Andrade de Mello e Souza, identidade nº 118/80/4-1 IFP/RJ, CPF/MF nº 084.131.317-23; **Gustavo de Freitas Morais**, brasileiro, casado, agente da propriedade industrial, API n.º 410, filho de Sabino da Silva Morais Neto e Marisa de Freitas Morais, portador da carteira de identidade n.º 158.301, expedida pela OAB/SP, inscrito no CPF/MF sob o n.º 700.055.897-91; **Marina Inês Fuzita Karakanian**, brasileira, casada, agente da propriedade industrial, API n.º 373, filha de Tanehisa Fuzita e Rita Assami Fuzita, portadora da carteira de identidade 131.768, expedida pela OAB/SP, inscrita no CPF/MF sob o n.º 181.865.828-35; **Frank Fischer**, brasileiro, solteiro, não vive em união estável, agente da propriedade industrial, API n.º 377, filho de Dietrich Hermann Fischer e Ingrid Fischer, portador da carteira de identidade n.º 6.167.534-9, expedida pela SSP-SP, inscrito no CPF/MF sob o n.º 142.489.278-37; **Rodrigo Rocha de Souza**, brasileiro, casado, agente da propriedade industrial, API nº 1527, filho de Octavio Augusto de Souza Filho e Maria Elisa Rocha de Souza, portador da carteira de identidade nº191.761, expedida pela OAB/SP, inscrito no CPF/MF sob o nº 954.481.287-34; **Cláudia França Loureiro**, brasileira, casada, agente da propriedade industrial, API nº 1580, filha de Jayme Ferreira Loureiro Netto e Dorothy França Loureiro, portadora da carteira de identidade 129.785, expedida pela OAB/SP, inscrita no CPF/MF sob o nº 123.436.236-53; **Carlos Eduardo Elisiário de Lima**, brasileiro, casado, agente

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da propriedade industrial, API nº 2.041, filho de José Carlos Elziario de Lima e Silvana Diniz de Lima , portador da carteira de identidade nº 234.214, expedida pela OAB/SP, inscrito no CPF/MF sob o nº 288.616.658-88; **Ana Cláudia Mamede Carneiro**, brasileira, casada, agente da propriedade industrial, API 506, filha de Antonio Milton Carneiro e Maria Avany Mamede Carneiro, portadora da carteira de identidade CREA/SP nº 506063940, inscrita no CPF/MF sob o nº 013.904.297-09; **Daniel Ávila Falla**, brasileiro, casado, agente da propriedade industrial, API nº 1992, filho de Antonio Lamartine Falla Filho e Rosemari Delicato Avila Falla, portador da carteira de identidade OAB/SP nº 234.526, inscrito no CPF/MF sob o nº 302.249.358-44; **Luiz Augusto Lopes Paulino**, brasileiro, solteiro, vive em união estável , agente da propriedade industrial, API nº 1980, filho de Marcos Martins Paulino e Beatriz Lopes Paulino, portador da carteira de identidade OAB/SP nº 259.722, inscrito no CPF/MF sob o nº 302.249.358-44 e **Ana Carolina Lee Barbosa Del Bianco**, brasileira, casada, advogada e agente da propriedade industrial, API nº 1634, filha de Otavio Barbosa Junior e Celina Lee Barbosa, portadora da carteira de identidade OAB/SP nº 203.603, inscrita no CPF/MF sob o nº 223.779.408-11; os quarenta e cinco primeiros domiciliados à Rua Marquês de Olinda, 70, Botafogo, Rio de Janeiro – RJ e os dez demais domiciliados à Av. Indianópolis, 757, Moema, São Paulo – SP, todos com endereço eletrônico: mail@dannemann.com.br, com poderes para **SOLIDARIAMENTE** representarem a **Outorgante** perante o **Instituto Nacional da Propriedade Industrial - INPI**, o **Ministério da Economia** e seus órgãos, **Coordenação de Propriedade Industrial da Agência Nacional de Vigilância Sanitária** e órgãos ligados à propriedade industrial do **Ministério da Saúde**, podendo para tanto assinar quaisquer documentos, requerimentos, petições, enfim, representar a **DANNEMANN, SIEMSEN, BIGLER & IPANEMA MOREIRA, PROPRIEDADE INDUSTRIAL LTDA** com os poderes e para os fins aludidos nas procurações a ela conferidas por seus clientes e que instruam processos de seus interesses em trâmite nesses órgãos federais, para os devidos fins, os poderes ora conferidos permanecerão em vigor a cada um dos outorgados até 31.12.2020 (trinta e um de dezembro de dois mil e vinte). O nome e dados dos procuradores foram fornecidos e conferidos pela Outorgante que por eles se responsabiliza. Feito sob minuta apresentada. Certifico que as custas devidas pelo presente ato foram recolhidas ao cartório, de acordo com a portaria 2357/2018 da Corregedoria Geral de Justiça do Rio de Janeiro, da seguinte forma: custas R$ 52,46 (tab. 7, 2, a)); atos gratuitos e FMCMV – R$ 1,04; comunicação ao distribuidor R$ 12,46 (tab. 1,5); Recolhido o acréscimo de 20% instituído pela lei 3217/99, no valor de R$ 12,96 devido ao FETJ, o acréscimo de 5% instituído pela Lei 4664/2005, no valor de R$ 3,24 devido ao FUNDPERJ e o acréscimo de 5% instituído pela Lei Complementar n.º 111/2006, no valor de R$ 3,24 devido ao FUNPERJ; o acréscimo de 4% instituído pela Lei nº 6281/2012 no valor de R$ 2,59, devido ao FUNARPEN; o acréscimo ISS R$ 3,42, distribuição R$ 103,11 (Lei n.º 5.358/2008, certidão R$ 57,30. Eu (ASS) **RICARDO DA SILVA DINIZ**, Substituto, Matrícula 94/4921, lavrei, li e colho as assinaturas. E eu (ASS) **LUIZ FERNANDO CARVALHO DE FARIA**, Tabelião, matrícula 06/1774, o encerro e o subscrevo. (ASS) **Luiz Henrique Oliveira do Amaral**, **Caio Cezar Cardeiro Pires**. Certificado nesta data. Eu ____ digitei. E eu ____ o subscrevo e assino.

Poder Judiciário – TJERJ
Corregedoria Geral da Justiça
Selo de Fiscalização Eletrônico
EDHW 00513 UGM
Consulte a validade do selo em:
https://www3.tjrj.jus.br/sitepublico

1º OFÍCIO DE NOTAS
Antonio C. Haliak
Juiz de Fora - MG
Av. Rio Branco, 2011

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 211

INSTITUTO NACIONAL DA PROPRIEDADE INDUSTRIAL

CERTIFICO, que a presente fotocópia, em número de uma, reproduz fielmente o documento arquivado neste instituto.

Rio de Janeiro, 13 Fevereiro de 2020.

Flávia Romano Villa Verde
Chefe DIDOC
Mat. 1480674

Exhibit D

1007
, Inc.
e 156

(21) BR 10 2013 018558-2 A2

(22) Data de Depósito: 19/07/2013
(43) Data da Publicação: 02/09/2014
(RPI 2278)

(51) Int.Cl.:
G07C 13/00
G06K 9/46
G06Q 50/00

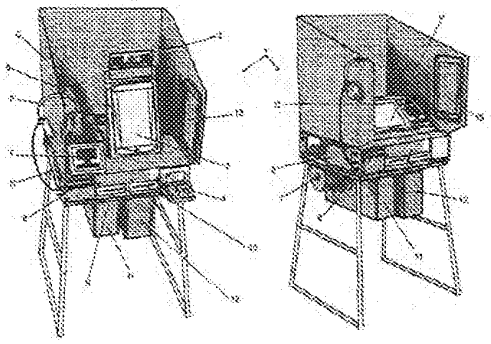
(54) Título: EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA

(73) Titular(es): Ronaldo Moises Nadaf

(72) Inventor(es): Ronaldo Moises Nadaf

(74) Procurador(es): MODAL MARCAS E PATENTES LTDA

(57) Resumo: EQUIPAMENTO DE IMPRESSÃO E COLETA DE CÉDULAS DE SEGURANÇA DO VOTO E EQUIPAMENTO DE AUDITORIA E APURAÇÃO DE VOTOS IMPRESSOS EM CÉDULAS DE SEGURANÇA, PARA MODELO DE VOTAÇÃO MECATRÔNICA", onde um equipamento (1) forma um sistema que possibilita ao próprio eleitor, votar e obter uma cédula de impressão (14) pela qual serão confirmados, o voto eletrônico e a impressão, através de códigos de barra (15), (16), (17) e (18) nela gravados. Tal cédula (13) é transferida para um segundo equipamento (19), de apuração de votos, onde tais informações serão lidas, formando um sistema de armazenamento eletrônico e impresso, em total interação e passível de ser auditado, caso hajam dúvidas em relação a fraudes, trazendo total segurança ao sistema eleitoral.



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Flávia Romano Villa Verde
Chefe DIDOC
Mat. 1480674

Electronic Acknowledgement Receipt

EFS ID:	48736338
Application Number:	18381091
International Application Number:	
Confirmation Number:	1082
Title of Invention:	Optical Character Recognition Of Voter Selections For Cast Vote Records
First Named Inventor/Applicant Name:	James M. Canter
Customer Number:	36275
Filer:	Richard D. Egan/Marty Jones
Filer Authorized By:	Richard D. Egan
Attorney Docket Number:	HART:032C7
Receipt Date:	18-OCT-2023
Filing Date:	
Time Stamp:	16:57:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS.pdf	1038825 d7bf71b2fe487af674aa315792f6d5b218623bd5	no	11

Warnings:

Information:					
2	Foreign Reference	B1.pdf	8642415 624d668e8f886f33a5fdd42bfdea74d8eea2e018	no	75
Warnings:					
Information:					
3	Foreign Reference	B2.pdf	6681697 ce05d9d0fc543cac5d3783e699dd2b459869ecd7	no	77
Warnings:					
Information:					
4	Foreign Reference	B3.pdf	25265615 dd4e74ac157cd3d8b3213d56ab0f1d64cbca65d0	no	158
Warnings:					
Information:					
5	Foreign Reference	B4.pdf	1139856 635ed45bae88202ada29fabb68b99a54fa1d107e	no	26
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Information:					
6	Foreign Reference	B5.pdf	4124779 24069df825c5d61804f89090fa19fb12f5f87467	no	29
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7	Non Patent Literature	C1.pdf	4019683 6359e577d1a63387afc17c07063d2dfc04b1daa7	no	18
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Information:					
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Information:					

9	Non Patent Literature	C3.pdf	1106578 d38838717ee840d7f513e847d949db7c0a14a2bf	no	7
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10	Non Patent Literature	C4.pdf	338094 0b28153d05459d9e2b3a8a016522941f476a6cca	no	16
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11	Non Patent Literature	C5.pdf	3049191 a3fc446894abeb18928e9be671d0d85a90677bb5	no	6
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Information:					
12	Non Patent Literature	C6.pdf	4035115 805797f779ae84ec016301b737c4db6dabafc471	no	5
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Information:					
13	Non Patent Literature	C7.pdf	3689320 38eacd23df6d6f67eac54573ec28da55525fe0e6	no	6
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Information:					
14	Non Patent Literature	C8.pdf	3204748 3b7e145b6d3425f49d4622b6f99f362074408c6e	no	6
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Information:					
15	Non Patent Literature	C9.pdf	2183658 09d0709c3e69bcee014aaaa880e8715fd0f48474	no	11
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Information:					

16	Non Patent Literature	C10.pdf	2837218 371b5e3e320f6b9d900a09e6de4cfbde1b682665	no	7
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25	Non Patent Literature	C19.pdf	2342016 8f56063ebe1e90d45835372b80f79da6fd5f b18c	no	175
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26	Non Patent Literature	C20.pdf	1851137 53c02a35fe702e455f64062578986b3d18d 4ef13	no	3
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27	Non Patent Literature	C21.pdf	12303301 64e1923904c0adad9c3536635da04b1e44(46c57	no	172
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Information:					
28	Non Patent Literature	C22.pdf	1040600 9ec4089a909ddae048e94a1ce20c71ca942 3da67	no	22
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Information:					
29	Non Patent Literature	C23.pdf	817448 7015e150245196dc573763e0ee29e60d649 91312	no	48
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38	Non Patent Literature	C32.pdf	1154171 8c38329a0d24d0dd46309601057d6ca9e832ad6d	no	86
Warnings:					
Information:					
			Total Files Size (in bytes):	155404370	

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
18/381,091	10/17/2023		4300	HART:032C7	40	4

CONFIRMATION NO. 1082

FILING RECEIPT

36275
Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

Date Mailed: 10/31/2023

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

James M. Canter, Austin, TX;
Drew E. Tinney, Austin, TX;
Ievgen Konovalenko, Austin, TX;

Applicant(s)

Hart InterCivic, Inc., Austin, TX;

Power of Attorney: The patent practitioners associated with Customer Number 36275

Domestic Priority data as claimed by applicant

This application is a CON of 17/483,627 09/23/2021
which is a CON of 17/225,357 04/08/2021 ABN
which is a CON of 16/919,267 07/02/2020 PAT 11,004,292
which is a CON of 16/745,621 01/17/2020 PAT 10,950,078
which is a CON of 16/560,222 09/04/2019 PAT 10,573,111
which is a CON of 16/239,607 01/04/2019 PAT 10,445,966
which claims benefit of 62/711,212 07/27/2018

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 10/30/2023
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/381,091**
Projected Publication Date: 02/08/2024
Non-Publication Request: No
Early Publication Request: No
Title

Optical Character Recognition Of Voter Selections For Cast Vote Records

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 18/381,091

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	40 minus 20 =	* 20			OR	x 100 =	2000
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1				x 480 =	480
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	4300

APPLICATION AS AMENDED - PART II

AMENDMENT A		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT B		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)	OR	RATE($)	ADDITIONAL FEE($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/381,091	10/17/2023	James M. Canter	HART:032C7

CONFIRMATION NO. 1082

36275
Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

PUBLICATION NOTICE

OC000000068078541

Date Mailed: 02/09/2024

Title: Optical Character Recognition Of Voter Selections For Cast Vote Records

Publication No.US-2024-0046731-A1
Publication Date:02/08/2024

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Notice of References Cited	Application/Control No. 18/381,091	Applicant(s)/Patent Under Reexamination Canter et al.	
	Examiner LAURA A GUDORF	Art Unit 2876	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-20020072961-A1	2002-06-13	McDermott, Michael R.	G07C13/00	705/12
	B					
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/381,091	Canter et al.
	Examiner	Art Unit
	LAURA A GUDORF	2876

CPC - Searched*		
Symbol	Date	Examiner
G07C13/00;G06V30/40,262,10;G06K7/10346;G06K17/0032	05/03/2024	LAG

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Class	Subclass	Date	Examiner

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Search Notes		
Search Notes	Date	Examiner
Inventor and Applicant name search	05/03/2024	LAG
SEARCH - see attached for detailed cpc and text search string strategies used	05/03/2024	LAG

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/381,091	Canter et al.
	Examiner	**Art Unit**
	LAURA A GUDORF	2876

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CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/03/2024								
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Bibliographic Data

Application No: 18/381,091

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /LAURA A GUDORF/ (Examiner's Signature) | (Initials)

Title: Optical Character Recognition Of Voter Selections For Cast Vote Records

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/17/2023	235	2876	HART:032C7
RULE			

APPLICANTS

Hart InterCivic, Inc.,

INVENTORS

James M. Canter, Austin, TX, UNITED STATES

Drew E. Tinney, Austin, TX, UNITED STATES

Ievgen Konovalenko, Austin, TX, UNITED STATES

CONTINUING DATA

This application is a CON of 17483627 09/23/2021 PAT 11830294

17483627 is a CON of 17225357 04/08/2021ABN

17225357 is a CON of 16919267 07/02/2020 PAT 11004292

16919267 is a CON of 16745621 01/17/2020 PAT 10950078

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FOREIGN APPLICATIONS

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Application Number	18381091
Filing Date	2023-10-17
First Named Inventor	JAMES M. CANTER
Art Unit	
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Attorney Docket Number	HART:032C7

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	Attorney Docket Number	HART:032C7

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	1	0120562A2	WO		2001-03-22	Adler et al.		
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	1	Kim et al., "Improved Support For Machine-Assisted Ballot-Level Audits", Usenix Journal Of Election Technology And Systems (JETS), Vol. 1, No. 1, August 2013, 18 pgs.	
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	Filing Date	2023-10-17
	First Named Inventor	JAMES M. CANTER
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	Examiner Name	
	Attorney Docket Number	HART:032C7

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	18	Declaration Of Carlos Cezar Cordeiro Pires, Election Systems & Software, LLC. v. Hart InterCivic, Inc., Patent No. 10,445,966, 100 pgs.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	HART:032C7

	26	Election Systems & Software, LLC. v. Hart Intercivic, Inc., "Video Conference Deposition Of Daniel P. Lopresti, Ph.D.", Patent No. 10,445,966, February 5, 2021, 87 pgs.	
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Examiner Signature	/LAURA A GUDORF/	Date Considered	04/29/2024

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CERTIFICATION STATEMENT

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That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Richard D. Egan/	Date (YYYY-MM-DD)	2023-10-18
Name/Print	Richard D. Egan	Registration Number	36788

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.G/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.G/

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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	49	("10002481" OR "10147259" OR "10445966" OR "10573111" OR "10950078" OR "20020084325" OR "20050269406" OR "20060041468" OR "20090166417" OR "20090256703" OR "20090289115" OR "20100114674" OR "20110202464" OR "20140012635" OR "20140231513" OR "20160019439" OR "20170344538" OR "20180102013" OR "20180350180" OR "20190213820" OR "20210225109" OR "20220012970" OR "20220012971" OR "2612994" OR "3609685" OR "5377099" OR "5497318" OR "5625721" OR "5703972" OR "5726435" OR "5748807" OR "5764799" OR "5850480" OR "6250548" OR "6873966" OR "6885758" OR "6971574" OR "7080779" OR "7306148" OR "7406201" OR "7635088" OR "7729991" OR "7988047" OR "8261986" OR "8991701" OR "9165417" OR "9361531" OR "9401059" OR "RE40449").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2024/04/29 09:44 AM
L2	8189	G07C13/00.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2024/04/29 09:53 AM

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			CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L3	52394	G06V30/40,262,10.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 09:53 AM
L4	4727	G06K7/10346.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 09:53 AM
L5	1203	G06K17/0032.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 09:53 AM
L6	66281	L2 L3 L4 L5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 09:53 AM
L7	44990	L6 AND @ay<"2019"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2024/04/29 09:54 AM

			CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L8	7429	L7 AND (OCR (character near2 recogni$6)) SAME compar$5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 02:00 PM
L9	2060	L7 AND (OCR (character near2 recogni$6)) SAME compar$5 SAME input	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 02:02 PM
L10	72	L7 AND (OCR (character near2 recogni$6)) SAME compar$5 SAME vote	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 02:02 PM
L11	40	L7 AND (OCR (character near2 recogni$6)) SAME compar$5 SAME ballot	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 02:04 PM
L12	40	(Artificial Intelligence) More like doc: US-20020072961-A1 Text: (US-RE40449-E OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2024/04/29 03:01 PM

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		US-6769613-B2 OR US-20120173307-A1 OR US-20140054377-A1 OR US-20090152339-A1 OR EP-1380002-A2 OR WO-02073509-A2 OR US-20020161628-A1 OR US-7306148-B1 OR WO-2004095180-A2 OR US-7387244-B2 OR US-20050139666-A1 OR US-20080103881-A1 OR US-7913905-B2 OR WO-03088001-A2 OR US-20080164329-A1 OR US-20030195798-A1 OR CA-2513638-C OR US-20120080522-A1 OR US-8584943-B2).did.	EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L13	654	(print$3 near4 (votes ballot)) AND (OCR (character near2 recogni$6))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/30 08:33 AM
L14	154	(print$3 near4 (votes ballot)) AND (OCR (character near2 recogni$6)) SAME compar$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/30 08:33 AM
L15	108	L14 AND @ay<"2019"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/30 08:33 AM
L16	710	(OCR (character near2 recogni$6)) SAME	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2024/05/03 02:42 PM

		compar$6 WITH (print$3 WITH stored)	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L17	479	(OCR (character near2 recogni$6)) SAME compar$6 near4 (print$3 WITH stored)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/03 02:43 PM
L18	390	L17 AND @ay<"2019"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/03 02:43 PM
L20	50	L1 AND (OCR (character near2 recogni$6))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/03 02:52 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/381,091	10/17/2023	James M. Canter	HART:032C7	1082

36275 7590 05/08/2024
Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

EXAMINER	
GUDORF, LAURA A	

ART UNIT	PAPER NUMBER
2876	

NOTIFICATION DATE	DELIVERY MODE
05/08/2024	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

epehadmin@ipaustin.com
mjones@ipaustin.com
uspto@dockettrak.com

Office Action Summary	Application No. 18/381,091	Applicant(s) Canter et al.	
	Examiner LAURA A GUDORF	Art Unit 2876	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 10/17/2023.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-40 is/are pending in the application.

5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☑ Claim(s) 1-40 is/are rejected.

8) ☐ Claim(s) ____ is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on ____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. ____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 10/18/2023.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date ____.

4) ☐ Other: ____.

DETAILED ACTION

Summary

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

This is a first Office Action on the merits.

Claims 1-40 are currently pending.

Claim Objections

Claims 7 and 12 are objected to because of the following informalities:

In claim 7, lines 1-2, please amend "the printed voter record" to recite "the printed vote record";

In claim 12, lines 1-2, please amend "the printed voter record" to recite "the printed vote record";

Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have

been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The filing of a terminal disclaimer by itself is not a complete reply to a nonstatutory double patenting (NSDP) rejection. A complete reply requires that the terminal disclaimer be accompanied by a reply requesting reconsideration of the prior Office action. Even where the NSDP rejection is provisional the reply must be complete. See MPEP § 804, subsection I.B.1. For a reply to a non-final Office action, see 37 CFR 1.111(a). For a reply to final Office action, see 37 CFR 1.113(c). A request for reconsideration while not provided for in 37 CFR 1.113(c) may be filed after final for consideration. See MPEP §§ 706.07(e) and 714.13.

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The actual filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/apply/applying-online/eterminal-disclaimer.

Claims 1-40 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-44 of U.S. Patent No. 11,830,294 in view of MCDERMOTT et al, US 2002/0072961.

Regarding independent claim 1:

Claim 1 of patent '294 recites each of the limitations recited in claim 1 of the instant application, with minor changes in phrasing, except for the following:

1) Claim 1 of the instant application recites "using optical character recognition (OCR) on at least a portion of the electronically captured information to generate a first data set" while claim 1 of the patent recites "electronically scanning the voter readable text on the printed vote record to create a first data set".

2) Claim 1 of the instant application recites "an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set".

With respect to point 1, OCR is merely a well-known and common type of electronic scanning used in the art to scan human readable text from printed documents.

With respect to point 2, MCDERMOTT teaches a method for electronic voting using printed vote records, wherein a first data set is generated based at least in part on the voter readable text indicating the voter's at least one vote selection and is compared to a second data set prior to generating any cast vote record in order to confirm an accuracy of data to be cast [0009]-[0012].

One of ordinary skill in the art would have found it to be obvious to use the comparison of the first data set and the second data set to confirm an accuracy of data to be cast so that machine and human error may be detected and corrected before ballots are finally submitted by the voter for tabulation with the votes of other voters (MCDERMOTT [0001]).

The method of independent claim 15 similarly corresponds to claim 1 of the patent as described above.

Regarding independent claim 29:

The correspondence between claim 29 of the instant application and claim 1 of the patent is the same as noted above. Additionally, while claim 29 recites system limitations not included in claim 1 of the patent, such as a printer, a scanner, and a processor, MCDERMOTT describes an electronic voting system using printed vote records including such components to carry out the method [0009]-[0012]. As such, it would have been obvious to one of ordinary skill in the art to include the printer, scanner, and processor to carry out the method as claimed.

Regarding independent claim 34:

The correspondence between claim 34 of the instant application and claim 1 of the patent is the same as noted above. Additionally, while claim 1 of the patent does not include recitation of "tabulating an election utilizing the cast vote record before vote auditing", it would have been obvious to one of ordinary skill in the art to include the step of tabulating as tabulation is a merely a necessary step in voting to determine election results.

Dependent claims 2-14, 16-28, 30-33, and 35-40 of the instant application correspond to claims 2, 4-6, 12-15, 18-25, 28-31, and 38-44 of the patent.

The following chart illustrates limitation correspondence between claim sets.

Instant Application	**Patent No. 11,830,294**
Claim 1:	**Claim 1:**
A method for electronic voting using printed vote records, comprising:	A method for electronic voting using printed vote records, comprising:
generating a printed vote record of at least one vote selection of a voter;	generating a printed vote record of at least one vote selection of a voter;
providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;	providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;
	providing, on the printed vote record, encoded data, the encoded data based at

	least in part on the voter's at least one vote selection;
electronically capturing information from the printed vote record; using optical character recognition (OCR) on at least a portion of the electronically captured information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection;	electronically scanning the voter readable text on the printed vote record to create a first data set, the first data set based at least in part on the voter's at least one vote selection; electronically scanning the encoded data on the printed vote record to create a second data set, the second data set based at least in part on the voter's at least one vote selection;
comparing the first data set to a second data set; and	comparing the first data set and the second data set; and
generating a cast vote record, which is to be a stored record of all of the voter's final vote selections and to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection, wherein, prior to generating any cast vote record which is to be a stored record of all of the voter's final vote selections and to be the voter's	providing a cast vote record which is to be a stored record of the voter's final vote selections and which is to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection as determined by the first data set, the cast voter record having all of the voter's vote selections from the printed vote record.

casted vote used for vote tabulation, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.	
Claim 15: A method for electronic voting using printed vote records, comprising: generating a printed vote record of at least one vote selection of a voter; providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection; electronically capturing first information from the printed vote record; using optical character recognition (OCR) on the first information to generate a first data set, the first data set based at least in part on the voter readable text indicating the	**Claim 1:** A method for electronic voting using printed vote records, comprising: generating a printed vote record of at least one vote selection of a voter; providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection; providing, on the printed vote record, encoded data, the encoded data based at least in part on the voter's at least one vote selection; electronically scanning the voter readable text on the printed vote record to create a first data set, the first data set based at least in part on the voter's at least one vote selection;

voter's at least one vote selection; electronically capturing second information from the printed vote record, to generate a second data set, the second information comprising encoded data; comparing the first data set to a second data set; and generating a cast vote record indicating the voter's at least one vote selection, the cast vote record being a stored record of all of the voter's final vote selections, wherein, prior to generating any cast vote record which is to be a stored record of all of the voter's final vote selections, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.	electronically scanning the encoded data on the printed vote record to create a second data set, the second data set based at least in part on the voter's at least one vote selection; comparing the first data set and the second data set; and providing a cast vote record which is to be a stored record of the voter's final vote selections and which is to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection as determined by the first data set, the cast voter record having all of the voter's vote selections from the printed vote record.
Claim 29: An electronic voting system for using printed vote records, comprising:	Claim 1: A method for electronic voting using printed vote records, comprising:

a printer configured to generate a printed vote record of at least one vote selection of a voter, the printed vote record including voter readable text indicating the voter's at least one vote selection;	generating a printed vote record of at least one vote selection of a voter; providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;
	providing, on the printed vote record, encoded data, the encoded data based at least in part on the voter's at least one vote selection;
a scanner configured to (1) electronically capture first information from the printed vote record, the first information including the voter readable text, and (2) electronically capture second information from the printed vote record, the second information comprising encoded data; and	electronically scanning the voter readable text on the printed vote record to create a first data set, the first data set based at least in part on the voter's at least one vote selection;
a processor configured to (1) use optical character recognition (OCR) on the first information to generate a first data set based at least in part on the voter readable text indicating the voter's at least one vote selection, (2) generate a	electronically scanning the encoded data on the printed vote record to create a second data set, the second data set based at least in part on the voter's at least one vote selection;

cast vote record which is to be a stored record of all of the voter's final vote selection indicating the voter's at least one vote selection based on the first data set and which is to be the voter's casted vote used for vote tabulation, and (3) generate a second data set from the second information, and wherein, the processor is further configured such that prior to generating the cast vote record which is to be a stored record of all of the voter's final vote selections and to be used for vote tabulation, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.	comparing the first data set and the second data set; and providing a cast vote record which is to be a stored record of the voter's final vote selections and which is to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection as determined by the first data set, the cast voter record having all of the voter's vote selections from the printed vote record.
Claim 34: A method for electronic voting using printed vote records, comprising: generating a printed vote record of at least one vote selection of a voter; providing, on the printed vote record,	Claim 1: A method for electronic voting using printed vote records, comprising: generating a printed vote record of at least one vote selection of a voter; providing, on the printed vote record,

voter readable text indicating the voter's at least one vote selection;	voter readable text indicating the voter's at least one vote selection;
	providing, on the printed vote record, encoded data, the encoded data based at least in part on the voter's at least one vote selection;
electronically capturing first information from the printed vote record; using optical character recognition (OCR) on the first information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection;	electronically scanning the voter readable text on the printed vote record to create a first data set, the first data set based at least in part on the voter's at least one vote selection;
electronically capturing second information from the printed vote record, to generate a second data set, the second information comprising encoded data;	electronically scanning the encoded data on the printed vote record to create a second data set, the second data set based at least in part on the voter's at least one vote selection;
comparing the first data set to a second data set; confirming an accuracy of the at least one vote selection of the voter	comparing the first data set and the second data set; and

based at least in part on a comparison of the first data set and the second data set; after confirming an accuracy of the at least one vote selection, generating a cast vote record which is to be a stored record of all of the voter's final vote selections and which is to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection as determined by the first data set; the cast vote record being generated after the comparing the first data set and the second data set; and tabulating an election utilizing the cast vote record before vote auditing.	providing a cast vote record which is to be a stored record of the voter's final vote selections and which is to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection as determined by the first data set, the cast voter record having all of the voter's vote selections from the printed vote record.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have

> been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim(s) 1, 4, 10, and 11 is/are rejected under 35 U.S.C. 103 as being unpatentable over MCDERMOTT et al, US 2002/0072961 in view of BOLTON et al, US 8,991,701.

Re claim 1:

MCDERMOTT teaches a method for electronic voting using printed vote records, comprising:

Generating a printed vote record of at least one vote selection of a voter [0009] [0012];

Providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection [0009] [0012];

Using computer recognition on at least a portion of the electronically captured information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection (a ballot scanning machine scans the printed ballot to obtain printed vote data [0009] [0012]);

Comparing the first data set to a second data set (printed vote data scanned by the ballot scanning machine is compared to vote data temporarily stored in the computer for the voting station [0009] [0012]); and

Generating a cast vote record, which is to be a stored record of all of the voter's final vote selections and to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection, wherein, prior to generating any cast vote record which is to be a stored record of all of the voter's final vote selection and to be the voter's casted vote used for vote tabulation, an accuracy of data

to be cast is confirmed based at least in part on a comparison of the first data set and the second data set [0012].

MCDERMOTT does not explicitly teach the computer recognition performed on the printed vote record is optical character recognition (OCR).

BOLTON teaches a method for electronic voting using printed vote records, wherein information from a printed vote record is captured electronically and OCR is used on at least a portion of the electronically captured information to generate a first data set, the data set indicating the voter's at least one vote selection (column 18, lines 18-26).

It would have been obvious to one of ordinary skill in the art before the effective filing date to incorporate the teachings of BOLTON in the method of MCDERMOTT such that OCR is used on at least a portion of the electronically captured information. OCR is merely a common character recognition method used in the art for extracting information from human-readable information printed on documents.

Re claim 4:

MCDERMOTT, in view of BOLTON, teaches the method of claim 1, wherein the electronically capturing information from the printed vote record comprises electronically scanning the voter readable text [0009] [0012].

Re claim 10:

MCDERMOTT, in view of BOLTON, teaches the method of claim 1, wherein electronically capturing information form the printed vote record comprises capturing an image of the printed vote record [0009] [0012].

Re claim 11:

MCDERMOTT, in view of BOLTON, teaches the method of claim 1, wherein the cast vote record provides the voter's sole casted vote used for vote tabulation [0012].

Claim(s) 7-8 and 12-13 is/are rejected under 35 U.S.C. 103 as being unpatentable over MCDERMOTT et al, US 2002/0072961 in view of BOLTON et al, US 8,991,701, as applied in claim 1, and further in view of CHUNG et al, US 8,261,986.

Re claims 7-8 and 12-13:

MCDERMOTT, in view of BOLTON, teaches the method of claim 1, wherein the information captured from the printed vote record comprises the voter readable text indicating the voter's at least one vote selection, but does not specify capturing other information.

CHUNG teaches a method for electronic voting using printed vote records, wherein the voter's at least one vote selection and other information is provided on a printed vote record. The voter's at least one vote selection and other information is electronically captured from the printed vote record (column 19, lines 25-67; column 20, lines 1-32). The other information may include a ballot number barcode (120) (column 5, lines 30-41; column 6, lines 57-67; column 7, lines 1-7; column 19, lines 25-55).

It would have been obvious to one of ordinary skill in the art before the effective filing date to further incorporate the teachings of CHUNG in the method of MCDERMOTT, in view of BOLTON, such that the information captured from the printed vote further includes other information. Printed vote records commonly include information other than voter vote selections, such the ballot identifier number described

in CHUNG. Such incorporation would be for the purpose of obtaining additional voting information from the printed vote record that uniquely identify the printed vote record and provide voting contextual information (CHUNG – (column 6, lines 57-67; column 7, lines 1-7).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA A GUDORF whose telephone number is (571)270-7607. If the Examiner cannot be reached by telephone, she can be reached through the following e-mail address: laura.gudorf@uspto.gov. The examiner can normally be reached on M-F 6:00-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lee, can be reached at telephone number (571)272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from Patent Center. Status information for published applications may be obtained from Patent Center. Status information for unpublished applications is available through Patent Center for authorized users only. Should you have questions about access to Patent Center, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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/LAURA A GUDORF/
Primary Examiner, Art Unit 2876

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Best,

Vaishali Udupa
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Application	Document	Mailroom Date	Attorney Docket No.
18381091	CTNF	05/08/2024	HART:032C7
18381091	892	05/08/2024	HART:032C7
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/381,091	Filing Date 10/17/2023	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	05/31/2024	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 40	Minus	** 40	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
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** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/JULIET MCMILLAN/
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The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/381,091	**05/31/2024 10:00:13 AM Z ET**	**HART:032C7**

Title of Invention

Optical Character Recognition Of Voter Selections For Cast Vote Records

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1082	FILED BY	Marty Jones
PATENT CENTER #	65748076	FILING DATE	10/17/2023
CUSTOMER #	36275	FIRST NAMED INVENTOR	James M. Canter
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Richard Egan

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
ROA.pdf	13	Amendment/Request for Reconsideration-After Non-Final Rejection	69 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
ROA.pdf	E9429576717452941617576 9C548C74D7E53E7DD26A56652E457FA045FAE3996C2C34E5F277519CBAC6AB86B4F0D234C863F7CFD73DA88CEB69FCD0C90850249

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	JAMES M. CANTER ET AL.
Filed:	OCTOBER 17, 2023
For:	OPTICAL CHARACTER RECOGNITION OF VOTER SELECTIONS FOR CAST VOTE RECORDS
Serial No.:	18/381,091
Group Art Unit:	2876
Examiner:	GUDORF, L.
Atty Docket No.:	HART:032C7

Electronically filed with the PTO

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Alexandria, VA 22313-1450

Dear Sir:

RESPONSE TO OFFICE ACTION DATED MAY 8, 2024

This paper is submitted in response to the Office Action dated May 8, 2024.

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 275

Amendments to the Claims

Please amend Claims 1, 7 and 12 as follows:

1. (Currently Amended) A method for electronic voting using printed vote records, comprising:

generating a printed vote record of at least one vote selection of a voter;

providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;

electronically capturing information from the printed vote record;

using optical character recognition (OCR) on at least a portion of the electronically captured information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection;

comparing the first data set to a second data set, the second data set obtained from the printed vote record; and

generating a cast vote record, which is to be a stored record of all of the voter's final vote selections and to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection, wherein, prior to generating any cast vote record which is to be a stored record of all of the voter's final vote selections and to be the voter's casted vote used for vote tabulation, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

2. (Original) The method of claim 1, wherein the printed vote record further comprises encoded data based at least in part on the voter's at least one vote selection, and wherein the second data set is generated at least in part from the encoded data.

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 276

3. (Original) The method of claim 2, wherein electronically capturing information from the printed vote record includes capturing the encoded data.

4. (Original) The method of claim 1, wherein the electronically capturing information from the printed vote record comprises electronically scanning the voter readable text.

5. (Original) The method of claim 4, wherein the printed vote record further comprises encoded data based at least in part on the voter's at least one vote selection, and wherein the electronically capturing information from the printed vote record further comprises electronically scanning the encoded data.

6. (Original) The method of claim 5, wherein the encoded data is contained in a visual representation of encoded data.

7. (Currently Amended) The method of claim 1, wherein the information captured from the printed vote[[r]] record comprises the voter readable text indicating the voter's at least one vote selection and other information.

8. (Original) The method of claim 7, wherein the other information is contained in a bar code.

9. (Original) The method of claim 7, wherein the second data set is based at least in part on the other information.

10. (Original) The method of claim 1, wherein electronically capturing information from the printed vote record comprises capturing an image of the printed vote record.

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11. (Original) The method of claim 1, wherein the cast vote record provides the voter's sole casted vote used for vote tabulation.

12. (Currently Amended) The method of claim 11, wherein the information captured from the printed vote[[r]] record comprises the voter readable text indicating the voter's at least one vote selection and other information.

13. (Original) The method of claim 12, wherein the other information is contained in a bar code.

14. (Original) The method of claim 12, wherein the second data set is based at least in part on the other information.

15. (Original) A method for electronic voting using printed vote records, comprising:

generating a printed vote record of at least one vote selection of a voter;

providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;

electronically capturing first information from the printed vote record;

using optical character recognition (OCR) on the first information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection;

electronically capturing second information from the printed vote record, to generate a second data set, the second information comprising encoded data;

comparing the first data set to a second data set; and

generating a cast vote record indicating the voter's at least one vote selection, the cast vote record being a stored record of all of the voter's final vote

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selections, wherein, prior to generating any cast vote record which is to be a stored record of all of the voter's final vote selections, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

16. (Original) The method of claim 15, wherein the encoded data is contained in a visual representation of encoded data.

17. (Original) The method of claim 15, further comprising confirming an accuracy of an optical character recognition (OCR) by utilizing a first hash produced from the first data set.

18. (Original) The method of claim 15, further comprising confirming an accuracy of an optical character recognition (OCR) by comparing a first hash produced from the first data set to a second hash, wherein the second hash is at least part of the encoded data.

19. (Original) The method of claim 15, wherein the comparison of the first data set and the second data set is used to confirm an accuracy of an optical character recognition (OCR) process by confirming that the at least one vote selection that the first data set is based at least in part on matches the at least one vote selection that the second data set is based at least in part on.

20. (Original) The method of claim 15, wherein the cast vote record is based on the first data set.

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21. (Original) The method of claim 15, wherein using optical character recognition (OCR) on the first information to generate a first data set further comprises recursively modifying an OCR process applied to the voter readable text.

22. (Original) The method of claim 21, wherein after the cast vote record is generated, the cast vote record is utilized during a tabulation of an election.

23. (Original) The method of claim 15, wherein the cast vote record provides the voter's sole casted vote used for vote tabulation.

24. (Original) The method of claim 23, further comprising confirming an accuracy of an optical character recognition (OCR) by utilizing a first hash produced from the first data set.

25. (Original) The method of claim 23, further comprising confirming an accuracy of an optical character recognition (OCR) by comparing a first hash produced from the first data set to a second hash, wherein the second hash is at least part of the encoded data.

26. (Original) The method of claim 23, wherein the comparison of the first data set and the second data set is used to confirm an accuracy of an optical character recognition (OCR) process by confirming that the at least one vote selection that the first data set is based at least in part on matches the at least one vote selection that the second data set is based at least in part on.

27. (Original) The method of claim 23, wherein the cast vote record is based on the first data set.

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28. (Original) The method of claim 27, wherein using optical character recognition (OCR) on the first information to generate a first data set further comprises recursively modifying an OCR process applied to the voter readable text.

29. (Original) An electronic voting system for using printed vote records, comprising:

a printer configured to generate a printed vote record of at least one vote selection of a voter, the printed vote record including voter readable text indicating the voter's at least one vote selection;

a scanner configured to (1) electronically capture first information from the printed vote record, the first information including the voter readable text, and (2) electronically capture second information from the printed vote record, the second information comprising encoded data; and

a processor configured to (1) use optical character recognition (OCR) on the first information to generate a first data set based at least in part on the voter readable text indicating the voter's at least one vote selection, (2) generate a cast vote record which is to be a stored record of all of the voter's final vote selection indicating the voter's at least one vote selection based on the first data set and which is to be the voter's casted vote used for vote tabulation, and (3) generate a second data set from the second information, and

wherein, the processor is further configured such that prior to generating the cast vote record which is to be a stored record of all of the voter's final vote selections and to be used for vote tabulation, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

30. (Original) The system of claim 29, wherein the processor is configured to recursively modify the first data set.

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31. (Original) The system of claim 29, wherein the processor is further configured to generate an OCR hash from the first data set, and to compare the OCR hash to an encoded hash extracted from the encoded data on the printed vote record.

32. (Original) The system of claim 31, wherein the processor is configured to recursively modify the first data set by generating an additional OCR hash for comparison to the encoded hash until the additional OCR hash matches the encoded hash.

33. (Original) The system of claim 31, wherein the processor is configured to recursively modify the first data set by, in response to a mismatch between the OCR hash and the encoded hash, selecting a valid alternate OCR output.

34. (Original) A method for electronic voting using printed vote records, comprising:

generating a printed vote record of at least one vote selection of a voter;

providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection;

electronically capturing first information from the printed vote record;

using optical character recognition (OCR) on the first information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection;

electronically capturing second information from the printed vote record, to generate a second data set, the second information comprising encoded data;

comparing the first data set to a second data set;

confirming an accuracy of the at least one vote selection of the voter based at least in part on a comparison of the first data set and the second data set;

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after confirming an accuracy of the at least one vote selection, generating a cast vote record which is to be a stored record of all of the voter's final vote selections and which is to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection as determined by the first data set; the cast vote record being generated after the comparing the first data set and the second data set; and

tabulating an election utilizing the cast vote record before vote auditing.

35. (Original) The method of claim 34, wherein comparing the first data set to the second data set comprises comparing a first hash produced from the first data set to a second hash extracted from the encoded data on the printed vote record.

36. (Original) The method of claim 35, further comprising recursively modifying the first data set, prior to generating the cast vote record.

37. (Original) The method of claim 36, wherein the recursively modifying the first data set comprises generating an additional OCR hash for comparison to a second hash extracted from the encoded data on the printed vote record, until the additional OCR hash matches the second hash.

38. (Original) The method of claim 35, wherein recursively modifying the first data set further comprises: based on the comparison of the first data set to the second data set, selecting a valid alternate OCR output based on the OCR process applied to the voter readable text.

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39. (Original) The method of claim 34, further comprising utilizing the printed vote record for auditing the election, the auditing of the election being separate from the tabulation of the election.

40. (Original) The method of claim 34, wherein the cast vote record provides the voter's sole casted vote used for vote tabulation.

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REMARKS

Claims 1-40 are pending. Claims 1-40 have been rejected for double patenting over US Patent 11,830,294 (a parent patent) in view of McDermott. A terminal disclaimer over US Patent 11,830,294 is filed concurrently herewith. Claims 1 and dependent claims 4, 10 and 11 (depending from claim 1) are rejected under 35 USC 103 over McDermott in view of Bolton. Dependent claims 7-8 and 12-13 (depending from claim 1) are rejected over McDermott in view of Bolton and Chung. Claim 1 has been amended herein.

Claims Objected To For Informalities

Claims 7 and 12 were objected to for informalities. Claims 7 and 12 have been amended as suggested in the Office Action to address those informalities.

Terminal Disclaimer

Claims 1-40 have been rejected for double patenting over US Patent 11,830,294 (a parent application) in view of McDermott. A terminal disclaimer over US Patent 11,830,294 is filed concurrently herewith. It is respectfully noted that for claims 2-6, 9, and 14-40 the double patent rejection was the only rejection. It is respectfully asserted that claims 2-6, 9, and 14-40 are now in condition for allowance.

35 USC 103 Rejections: Claims 1, 4, 7-8, 10-13

The rejected claims all depend from claim 1. The Office Action relies primarily on McDermott and then cites to Bolton for teaching OCR of a voter's vote selections. [Office Action p. 14-15] The Applicant disagrees with the asserted combination, however to render that issue moot, claim 1 was amended to expedite prosecution. It is respectfully asserted that as amended, claim 1 and all claims that depend therefrom contain limitations not found in the cited combination and are patentably distinct from the combination.

McDermott teaches a system in which a voter's vote selections are recorded by computer voting station. [McDermott Paragraph 0009] The computer voting station produces a paper ballot which includes filled circles indicating a voter's vote selection. [McDermott Paragraph 0009] The voter's vote selections are also temporarily stored in the computer voting station.

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[McDermott Paragraph 0009] A ballot scanning device is interfaced to the computer voting station to read the filled circles which indicate a voter's vote selection. [McDermott Paragraph 0009] The results of the ballot scan are then compared to the voter's vote selection that had been stored in the computer voting station at the time of the initial selection by the voter. [McDermott Paragraph 0009] The Office Action equates the claimed "first data set" with the data from McDermott's scan for filled circles and **equates the claimed "second data set" with the data retained in the computer voting system**: **"vote data temporarily stored in the computer for the voting station [0009] [0012]."** [Office Action p. 14]

It is noted that in various claims not rejected under 35 USC 103 the second data set is obtained from the printed vote record: "the printed vote record further comprises encoded data … the second data set is generated at least in part from the encoded data" (dependent claim 2), "the printed vote record further comprises encoded data … capturing information from the printed vote record further comprises electronically scanning the encoded data" (dependent claim 5); "electronically capturing second information from the printed vote record, to generate a second data set" (independent claim 15); and "electronically capture second information from the printed vote record" (independent claim 29); and "electronically capturing second information from the printed vote record, to generate a second data set," (independent claim 34).

Claim 1 has been amended to make clear that the second data set is "obtained from the printed vote record." Thus as amended in claim 1, both the first data set and the second data set are based on information obtained from the printed vote record. It is respectfully asserted that McDermott and the claimed combination of art do not teach such steps. Thus, it is respectfully requested that the rejection of claims 1, 4, 7-8, and 10-13 be withdrawn.

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The fee for the request for extension of time is being paid concurrently herewith. Should any additional fees under 37 CFR 1.16-1.21 be required for any reason relating to the enclosed materials, the Commissioner is authorized to deduct such fees from Deposit Account No. 10-1205/HART:032C7. The examiner is invited to contact the undersigned at the phone number indicated below with any questions or comments, or to otherwise facilitate expeditious and compact prosecution of the application.

Respectfully submitted,

/Richard D. Egan/
Richard D. Egan
Registration No.: 36,788
Attorney for Applicant

EGAN, ENDERS & HUSTON, LLP
1101 South Capital of Texas Highway
Building C, Suite 200
Austin, Texas 78746
(512) 347-1611
FAX: (512) 347-1615

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UNITED STATES
PATENT AND TRADEMARK OFFICE

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/381,091	05/31/2024 11:12:49 AM Z ET	HART:032C7

Title of Invention

Optical Character Recognition Of Voter Selections For Cast Vote Records

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1082	FILED BY	Marty Jones
PATENT CENTER #	65748113	AUTHORIZED BY	Richard Egan
CUSTOMER #	36275	FILING DATE	10/17/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	James M. Canter

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 101205	E20245UB13227633	Richard Egan

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
101205	37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1814	STATUTORY DISCLAIMER, INCLUDING TERMINAL DISCLAIMER	170.00	1	170.00
			TOTAL AMOUNT:	$170.00

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code : DISCLE.FILE
Description : Electronic Terminal Disclaimer - Approved

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APPROVAL LETTER

APPLICATION #	FILING DATE	APPLICANT/PATENT UNDER REEXAMINATION
18/381,091	10/17/2023	James Canter

Title of Invention

Optical Character Recognition Of Voter Selections For Cast Vote Records

Electronic terminal disclaimer filed on 05/31/2024

☑ Approved

This patent is subject to a Terminal Disclaimer

Approved / Disapproved by: Electronic Terminal Disclaimer automatically approved

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/381,091	**05/31/2024 11:12:49 AM Z ET**	**HART:032C7**

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PATENT CENTER #	65748113	FILING DATE	10/17/2023
CUSTOMER #	36275	FIRST NAMED INVENTOR	James M. Canter
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Richard Egan

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
petition-request.pdf	3	Terminal Disclaimer-Filed (Electronic)	48 KB
grantLetter.pdf	1	Terminal Disclaimer-Electronic-Approved	19 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
petition-request.pdf	788C7C95BB73584D06B04A46EBE3859785FD050CD8B00C623D795214748C36520991824E5BCF1117514C5C55A4FBCC59CD

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grantLetter.pdf

B5E057A46F2CB3DC0D9E8E2DDC6980CD97EF638F32C95D75
2A16B0A771C64973ED572D25C8AE916350B9FB119D6C68588
F482A8AB6AC71780D4CB8A84C75C85A

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New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT

APPLICATION #	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET #
18381091	10/17/2023	James Canter	HART:032C7

Title of Invention

Optical Character Recognition Of Voter Selections For Cast Vote Records

☑ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☑ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent interest
Hart InterCivic, Inc.	100%
Total	100%

The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending reference Application Number(s)

Application #	Filing Date

as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the

instant application and is binding upon the grantee, its successors or assigns.
In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that any such patent granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

Patent #
11830294

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.
In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.



Terminal disclaimer fee under 37 CFR 1.20(d) included with Electronic Terminal Disclaimer request.

Applicant claims the following entity status:
Regular Undiscounted

I hereby declare that all statements made herein of my own knowledge are true and that all statemnts made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I certify, in accordance with 37 CFR 1.4(d)(4) that I am: An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Signature	Name	Registration #
/Richard D. Egan/	Richard Egan	36788

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* Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner). Form PTO/SB/96 may be used for making this certification. See MPEP 324.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/381,091	Canter et al.
	Examiner	**Art Unit**
	LAURA A GUDORF	2876

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/03/2024	06/15/2024							
	1	✓	=							
	2	✓	=							
	3	✓	=							
	4	✓	=							
	5	✓	=							
	6	✓	=							
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	39	✓	=							
	40	✓	=							

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/381,091	Canter et al.
	Examiner	Art Unit
	LAURA A GUDORF	2876

CPC - Searched*		
Symbol	**Date**	**Examiner**
G07C13/00;G06V30/40,262,10;G06K7/10346;G06K17/0032	05/03/2024	LAG

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor and Applicant name search	05/03/2024	LAG
SEARCH - see attached for detailed cpc and text search string strategies used	05/03/2024	LAG
Updated search	06/15/2024	LAG

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
G07C	13/00	06/15/2024	LAG
G06V	30/40,262,10	06/15/2024	LAG
G06K	7/10346; 17/0032	06/15/2024	LAG

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/381,091	Canter et al.
	Examiner	**Art Unit**
	LAURA A GUDORF	2876

CPC							
Symbol						**Type**	**Version**
G07C	/	13	/	00		F	2013-01-01
G06K	/	17	/	0032		I	2013-01-01
G06K	/	7	/	10346		I	2013-01-01
G06V	/	30	/	40		I	2022-01-01
G06V	/	30	/	262		I	2022-01-01
G06V	/	30	/	10		A	2022-01-01

CPC Combination Sets								
Symbol						**Type**	**Set**	**Ranking**	**Version**
	/		/						

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	40	
/LAURA A GUDORF/ Primary Examiner, Art Unit 2876	15 June 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	3

U.S. Patent and Trademark Office — Part of Paper No.: 20240615

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/381,091	Canter et al.
	Examiner	**Art Unit**
	LAURA A GUDORF	2876

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G07C13/00	/	13	/	00
G06K17/00	/	17	/	00
G06K7/10	/	7	/	10
G06V30/40	/	30	/	40
G06V30/262	/	30	/	262
G06V30/10	/	30	/	10

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
235	386

CROSS REFERENCES(S)							
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**						

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	40	
/LAURA A GUDORF/ Primary Examiner, Art Unit 2876	15 June 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	3

U.S. Patent and Trademark Office — Part of Paper No.: 20240615

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/381,091	Canter et al.
	Examiner	**Art Unit**
	LAURA A GUDORF	2876

☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		10		19		28		37						
	2		11		20		29		38						
	3		12		21		30		39						
	4		13		22		31		40						
	5		14		23		32								
	6		15		24		33								
	7		16		25		34								
	8		17		26		35								
	9		18		27		36								

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	40	
/LAURA A GUDORF/ Primary Examiner, Art Unit 2876	15 June 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	3

U.S. Patent and Trademark Office — Part of Paper No.: 20240615

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
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PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	49	("10002481" OR "10147259" OR "10445966" OR "10573111" OR "10950078" OR "20020084325" OR "20050269406" OR "20060041468" OR "20090166417" OR "20090256703" OR "20090289115" OR "20100114674" OR "20110202464" OR "20140012635" OR "20140231513" OR "20160019439" OR "20170344538" OR "20180102013" OR "20180350180" OR "20190213820" OR "20210225109" OR "20220012970" OR "20220012971" OR "2612994" OR "3609685" OR "5377099" OR "5497318" OR "5625721" OR "5703972" OR "5726435" OR "5748807" OR "5764799" OR "5850480" OR "6250548" OR "6873966" OR "6885758" OR "6971574" OR "7080779" OR "7306148" OR "7406201" OR "7635088" OR "7729991" OR "7988047" OR "8261986" OR "8991701" OR "9165417" OR "9361531" OR "9401059" OR "RE40449").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2024/04/29 09:44 AM
L2	8189	G07C13/00.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2024/04/29 09:53 AM

Election Systems & Software, LLC - Exhibit 1002
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			CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L3	52394	G06V30/40,262,10.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 09:53 AM
L4	4727	G06K7/10346.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 09:53 AM
L5	1203	G06K17/0032.cpc.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 09:53 AM
L6	66281	L2 L3 L4 L5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 09:53 AM
L7	44990	L6 AND @ay<"2019"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU,	OR	ON	ON	2024/04/29 09:54 AM

			CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L8	7429	L7 AND (OCR (character near2 recogni$6)) SAME compar$5	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 02:00 PM
L9	2060	L7 AND (OCR (character near2 recogni$6)) SAME compar$5 SAME input	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 02:02 PM
L10	72	L7 AND (OCR (character near2 recogni$6)) SAME compar$5 SAME vote	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 02:02 PM
L11	40	L7 AND (OCR (character near2 recogni$6)) SAME compar$5 SAME ballot	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/29 02:04 PM
L12	40	(Artificial Intelligence) More like doc: US-20020072961-A1 Text: (US-RE40449-E OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2024/04/29 03:01 PM

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 303

		US-6769613-B2 OR US-20120173307-A1 OR US-20140054377-A1 OR US-20090152339-A1 OR EP-1380002-A2 OR WO-02073509-A2 OR US-20020161628-A1 OR US-7306148-B1 OR WO-2004095180-A2 OR US-7387244-B2 OR US-20050139666-A1 OR US-20080103881-A1 OR US-7913905-B2 OR WO-03088001-A2 OR US-20080164329-A1 OR US-20030195798-A1 OR CA-2513638-C OR US-20120080522-A1 OR US-8584943-B2).did.	EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L13	654	(print$3 near4 (votes ballot)) AND (OCR (character near2 recogni$6))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/30 08:33 AM
L14	154	(print$3 near4 (votes ballot)) AND (OCR (character near2 recogni$6)) SAME compar$6	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/30 08:33 AM
L15	108	L14 AND @ay<"2019"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/04/30 08:33 AM
L16	710	(OCR (character near2 recogni$6)) SAME	(US-PGPUB; USPAT; USOCR; FIT (AP, AT,	OR	ON	ON	2024/05/03 02:42 PM

		compar$6 WITH (print$3 WITH stored)	AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L17	479	(OCR (character near2 recogni$6)) SAME compar$6 near4 (print$3 WITH stored)	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/03 02:43 PM
L18	390	L17 AND @ay<"2019"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/03 02:43 PM
L20	50	L1 AND (OCR (character near2 recogni$6))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/03 02:52 PM
L21	45	L1 AND (barcode (bar near2 code))	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2024/05/03 04:17 PM
L22	6	"17483627"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY,	OR	ON	ON	2024/05/03 04:57 PM

			CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	15311	(G07C13/00.cpc.) (G06V30/40,262,10.cpc.) (G06K7/10346.cpc.) (G06K17/0032.cpc.)	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/15 01:39 PM
N2	43	N1 AND (OCR (character near2 recogni$6)) SAME compar$5 SAME ballot	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/15 01:40 PM
N3	343	N1 AND (OCR (character near2 recogni$6)) SAME compar$5 same2 (barcode ((bar qr 2d matrix) near2 code))	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/15 01:41 PM
N4	83	N3 AND (election ballot vote voting)	(US-PGPUB; USPAT)	OR	ON	ON	2024/06/15 01:41 PM

Bibliographic Data

Application No: 18/381,091

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /LAURA A GUDORF/ (Examiner's Signature) (Initials)

Title: Optical Character Recognition Of Voter Selections For Cast Vote Records

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/17/2023	235	2876	HART:032C7
RULE			

APPLICANTS

Hart InterCivic, Inc.,

INVENTORS

James M. Canter, Austin, TX, UNITED STATES

Drew E. Tinney, Austin, TX, UNITED STATES

Ievgen Konovalenko, Austin, TX, UNITED STATES

CONTINUING DATA

This application is a CON of 17483627 09/23/2021 PAT 11830294

17483627 is a CON of 17225357 04/08/2021ABN

17225357 is a CON of 16919267 07/02/2020 PAT 11004292

16919267 is a CON of 16745621 01/17/2020 PAT 10950078

16745621 is a CON of 16560222 09/04/2019 PAT 10573111

16560222 is a CON of 16239607 01/04/2019 PAT 10445966

16239607 has PRO of 62711212 07/27/2018

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

10/30/2023

STATE OR COUNTRY

UNITED STATES

ADDRESS

Egan, Enders & Huston LLP.

1101 S. Capital of Texas Highway

Bldg C, Suite 200

Austin, TX 78746

UNITED STATES

FILING FEE RECEIVED

$4,300

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

36275 7590 07/03/2024

Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

EXAMINER	
GUDORF, LAURA A	
ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 07/03/2024

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/381,091	10/17/2023	James M. Canter	HART:032C7	1082

TITLE OF INVENTION: Optical Character Recognition Of Voter Selections For Cast Vote Records

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	10/03/2024

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

36275 7590 07/03/2024
Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/381,091	10/17/2023	James M. Canter	HART:032C7	1082

TITLE OF INVENTION: Optical Character Recognition Of Voter Selections For Cast Vote Records

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	10/03/2024

EXAMINER	ART UNIT	CLASS-SUBCLASS
GUDORF, LAURA A	2876	235-386000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via the USPTO patent electronic filing system ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 310

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/381,091	10/17/2023	James M. Canter	HART:032C7	1082

36275 7590 07/03/2024

Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

EXAMINER	
GUDORF, LAURA A	

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 07/03/2024

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 11/23)

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).
https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
2) a federal, state, local, or international agency, in response to its request;
3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 18/381,091	Applicant(s) Canter et al.	
	Examiner LAURA A GUDORF	Art Unit 2876	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to amendments filed 05/31/2024.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-40 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/LAURA A GUDORF/
Primary Examiner, Art Unit 2876

DETAILED ACTION

Summary

This Office Action is responsive to amendments filed 05/31/2024

Claims 1, 7, and 12 have been amended. Claims 1-40 are currently pending.

Terminal Disclaimer

The terminal disclaimer filed on 05/31/2024 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. patent No. 11,830,294 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

Applicant amended claims 7 and 12 to address minor informalities. The claim objects have been withdrawn.

The terminal disclaimer filed on 05/31/2024 overcome the double patenting rejection of claims 1-40. The double patenting rejections of claim 1-40 have been withdrawn.

Applicant amended claim 1 to recite "comparing the first data set to a second data set, the second data set obtained from the printed vote record". Applicant argues that MCDERMOTT does not teach or suggest that the second data set is obtained from the printed vote record on pages 11-12 of applicant remarks. The examiner agrees that MCDERMOTT does not teach the amended limitation. As such, the rejection of claims 1, 4, 7-8, and 10-13 has been withdrawn.

Allowable Subject Matter

Claims 1-40 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1:

The prior art of record fails to teach or fairly suggest, either singularly or in combination thereof, a method for electronic voting using printed vote records, comprising each of the following limitations:

generating a printed vote record of at least one vote selection of a voter; providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection; electronically capturing information from the printed vote record; using optical character recognition (OCR) on at least a portion of the electronically captured information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection; comparing the first data set to a second data set, the second data set obtained from the printed vote record; and generating a cast vote record, which is to be a stored record of all of the voter's final vote selections and to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection, wherein, prior to generating any cast vote record which is to be a stored record of all of the voter's final vote selections and to be the voter's casted vote used for vote tabulation, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

Regarding independent claim 15:

The prior art of record fails to teach or fairly suggest, either singularly or in combination thereof, a method for electronic voting using printed vote records, comprising each of the following limitations:

generating a printed vote record of at least one vote selection of a voter; providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection; electronically capturing first information from the printed vote record; using optical character recognition (OCR) on the first information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection; electronically capturing second information from the printed vote record, to generate a second data set, the second information comprising encoded data; comparing the first data set to a second data set; and generating a cast vote record indicating the voter's at least one vote selection, the cast vote record being a stored record of all of the voter's final vote selections, wherein, prior to generating any cast vote record which is to be a stored record of all of the voter's final vote selections, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

Regarding independent claim 29:

The prior art of record fails to teach or fairly suggest, either singularly or in combination thereof, an electronic voting system for using printed vote records, comprising each of the following limitations:

a printer configured to generate a printed vote record of at least one vote selection of a voter, the printed vote record including voter readable text indicating the voter's at least one vote selection; a scanner configured to (1) electronically capture first

information from the printed vote record, the first information including the voter readable text, and (2) electronically capture second information from the printed vote record, the second information comprising encoded data; and a processor configured to (1) use optical character recognition (OCR) on the first information to generate a first data set based at least in part on the voter readable text indicating the voter's at least one vote selection, (2) generate a cast vote record which is to be a stored record of all of the voter's final vote selection indicating the voter's at least one vote selection based on the first data set and which is to be the voter's casted vote used for vote tabulation, and (3) generate a second data set from the second information, and wherein, the processor is further configured such that prior to generating the cast vote record which is to be a stored record of all of the voter's final vote selections and to be used for vote tabulation, an accuracy of data to be cast is confirmed based at least in part on a comparison of the first data set and the second data set.

Regarding independent claim 24:

The prior art of record fails to teach or fairly suggest, either singularly or combination thereof, a method for electronic voting using printed vote records, comprising each of the following limitations:

generating a printed vote record of at least one vote selection of a voter; providing, on the printed vote record, voter readable text indicating the voter's at least one vote selection; electronically capturing first information from the printed vote record; using optical character recognition (OCR) on the first information to generate a first data set, the first data set based at least in part on the voter readable text indicating the voter's at least one vote selection; electronically capturing second information from the

printed vote record, to generate a second data set, the second information comprising encoded data; comparing the first data set to a second data set; confirming an accuracy of the at least one vote selection of the voter based at least in part on a comparison of the first data set and the second data set; after confirming an accuracy of the at least one vote selection, generating a cast vote record which is to be a stored record of all of the voter's final vote selections and which is to be the voter's casted vote used for vote tabulation, the cast vote record indicating the voter's at least one vote selection as determined by the first data set; the cast vote record being generated after the comparing the first data set and the second data set; and tabulating an election utilizing the cast vote record before vote auditing.

Claims 2-14, 16-28, 30-33, and 35-40 depend from claims 1, 15, 29, and 34, respectively, and are therefore allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA A GUDORF whose telephone number is (571)270-7607. If the Examiner cannot be reached by telephone, she can be reached through the following e-mail address: laura.gudorf@uspto.gov. The examiner can normally be reached on M-F 6:00-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lee, can be reached at telephone number (571)272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from Patent Center. Status information for published applications may be obtained from Patent Center. Status information for unpublished applications is available through Patent Center for authorized users only. Should you have questions about access to Patent Center, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) Form at https://www.uspto.gov/patents/uspto-automated- interview-request-air-form.

/LAURA A GUDORF/
Primary Examiner, Art Unit 2876

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/381,091	**09/23/2024 11:23:55 AM Z ET**	**HART:032C7**

Title of Invention

Optical Character Recognition Of Voter Selections For Cast Vote Records

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1082	FILED BY	Marty Jones
PATENT CENTER #	67277303	FILING DATE	10/17/2023
CUSTOMER #	36275	FIRST NAMED INVENTOR	James M. Canter
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Richard Egan

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Issuefee.pdf	1	Issue Fee Payment (PTO-85B)	192 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Issuefee.pdf	9C12521F7DE9DE4B5BF2B2FE49DA8685A0C27954EA2A729C 7CAE4DEDB9A55A101F37465710BA3283D8D94125F71BD8852 12956F9B436C666675C8193A369DCD3

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/381,091	**09/23/2024 11:23:55 AM Z ET**	**HART:032C7**

Title of Invention

Optical Character Recognition Of Voter Selections For Cast Vote Records

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	1082	FILED BY	Marty Jones
PATENT CENTER #	67277303	AUTHORIZED BY	Richard Egan
CUSTOMER #	36275	FILING DATE	10/17/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	James M. Canter

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 1008	**E20249MB24547922**	**Marty Jones**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
101205	**37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.20 (Post Issuance fees); 37 CFR 1.21 (Miscellaneous fees and charges)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1501	UTILITY ISSUE FEE	1200.00	1	1200.00
			TOTAL AMOUNT:	**$1,200.00**

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement

Receipt will establish the filing date of the application

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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

36275 7590 07/03/2024
Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

Marty Jones (Typed or printed name)
/Marty Jones/ (Signature)
September 23, 2024 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/381,091	10/17/2023	James M. Canter	HART.032C7	1082

TITLE OF INVENTION: Optical Character Recognition Of Voter Selections For Cast Vote Records

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	10/03/2024

EXAMINER	ART UNIT	CLASS-SUBCLASS
GUDORF, LAURA A	2876	235-386000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Egan, Enders & Huston LLP.
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Hart InterCivic, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Austin, Texas

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☒ Electronic Payment via the USPTO patent electronic filing system ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 101205

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29
NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

☐ Applicant asserting small entity status. See 37 CFR 1.27
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

☐ Applicant changing to regular undiscounted fee status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Richard D. Egan/ Date September 23, 2024

Typed or printed name Richard D. Egan Registration No. 36788

PTOL-85 Part B (11/23) Approved for use through 03/31/2026 OMB 0651-0033 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Election Systems & Software, LLC - Exhibit 1002
Election Systems & Software, LLC v. Hart Intercivic, Inc.
Page 324

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/381,091	10/22/2024	12125319	HART:032C7	1082

36275 7590 10/02/2024

Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at https://patentcenter.uspto.gov/. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at https://certifiedcopycenter.uspto.gov/index.html. The Certified Copy Center may be reached at (800)972-6382.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Center (https://patentcenter.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional inventors):

James M. Canter, Austin, TX;
Drew E. Tinney, Austin, TX;
Ievgen Konovalenko, Austin, TX;

APPLICANT(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional applicants):

Hart InterCivic, Inc., Austin, TX;

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Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Bldg C, Suite 200
Austin, TX 78746

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GUDORF, LAURA A	

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epehadmin@ipaustin.com
mjones@ipaustin.com
uspto@dockettrak.com

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Egan, Enders & Huston LLP.
1101 S. Capital of Texas Highway
Austin, TX 78746

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