

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Stanley Black & Decker, Inc.
Petitioner

v.

Viking Arm AS
Patent Owner

IPR2025-00665
U.S. Patent No. 11,554,473

PETITION FOR INTER PARTES REVIEW UNDER 37 C.F.R. § 42.100

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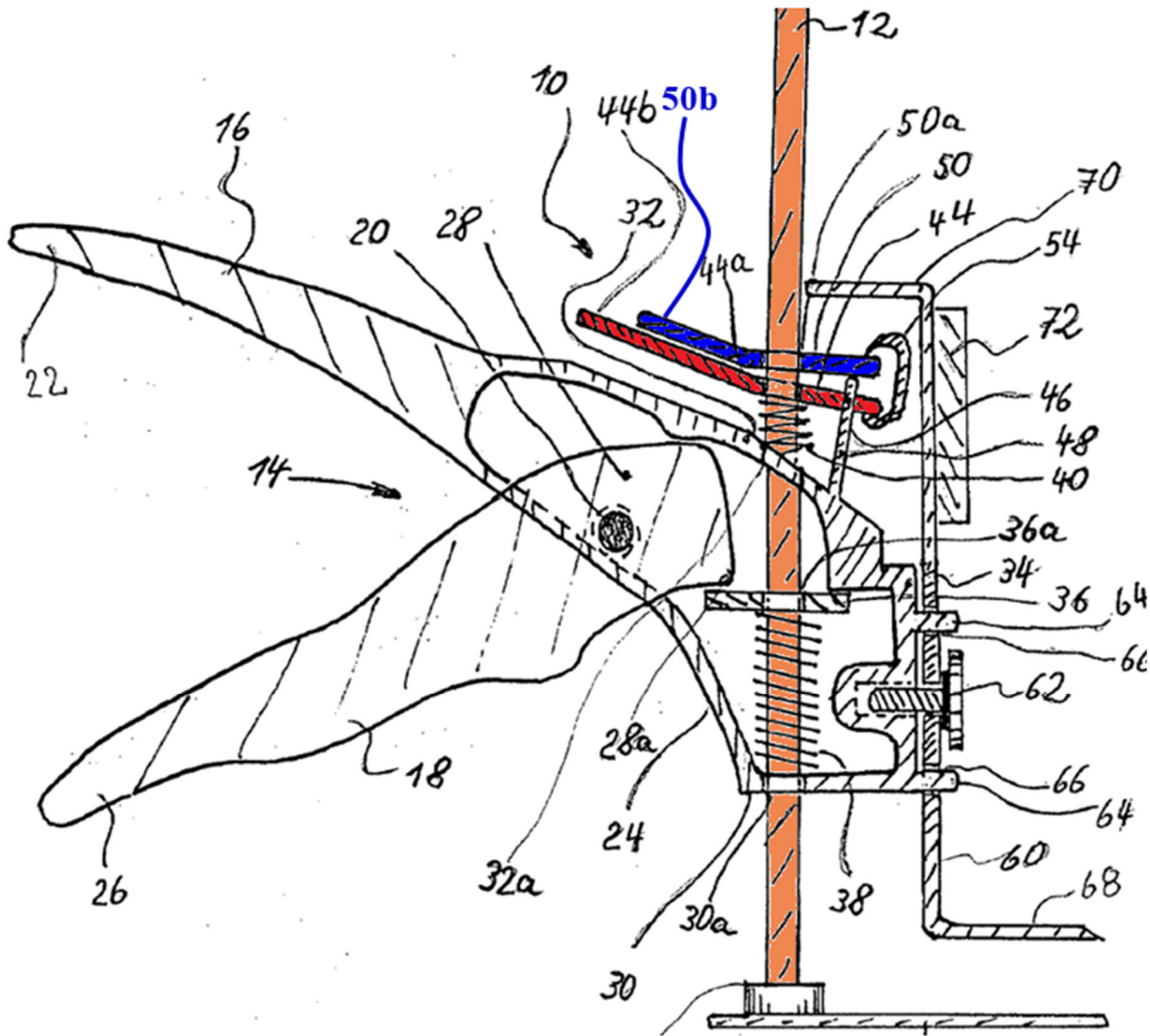
Exhibit	Description
1001	U.S. Patent No. 11,554,473 ('473 Patent)
1002	Declaration of Richard W. Klopp, Ph.D., P.E., F.A.S.M.E.
1003	German Patent Specification Pub. No. DE 101 27 718 A1 ("Gruber")
1004	English Translation of Gruber (Including Translator's Declaration)
1005	U.S. Patent No. 2,820,608 ("Brasemann")
1006	'473 Patent Prosecution History, 11/14/22 Notice of Allowability
1007	August 1964 Volkswagen 1200 Instruction Manual
1008	December 27, 2024 Viking Arm AS Response To Opposition Against European Patent No. 3953541B1
1009	https://web.archive.org/web/20161215232438/http://www.thesamba.com/vw/archives/manuals/8_64bug/1965_Beetle_Owners_Manual.pdf ; https://web.archive.org/web/20161215232314/https://www.thesamba.com/vw/archives/manuals/8_64bug.php
1010	Declaration of Benjamin L. Kiersz

I. INTRODUCTION

Stanley Black & Decker, Inc. (“Petitioner”) requests that claims 1-3 of U.S. Patent No. 11,554,473 (Ex. 1001) (“’473 Patent”) be found unpatentable as obvious over German Patent Specification Publication No. DE10127718A1 (Exs. 1003/1004) (“Gruber”), which was not of record during prosecution, in view of U.S. Patent No. 2,820,608 (Ex. 1005) (“Brasermann”).

Conventional jacking tools used caulking gun jacking mechanisms to lift and level heavy loads. For example, as shown below, Gruber’s jack 10 includes a caulking gun jacking mechanism with a jacking plate 36 biased toward an open/disengaged state, and a **holding plate 44**¹ biased toward a tilted/gripping state. When an operator actuates a handle 26, the jacking plate 36 grips/engages a **jacking shaft 12** such that further actuation lifts the jack’s frame 22/24/30/32/34/48. The **holding plate 44** grips the **jacking shaft 12**, which prevents the frame from falling back down when the handle 26 is released. Pumping the handle 26 lifts the frame more and more.

¹ All color and emphasis in this petition are added.



Gruber, FIG. 1 (annotated; excerpt)

The '473 Patent (at 1:33-34) postures that when conventional jacking mechanisms were released, the jack's frame and load could "'fall[]" uncontrollably along the jacking shaft." Patent Owner allegedly solved this problem via a lowering mechanism that "control[s] the downward movement of the frame along the jacking shaft in a caulking gun jacking mechanism in an adjustable stepwise manner." Ex. 1001, 1:33-35.

But such stepwise lowering mechanisms were already well known. As shown above, Gruber already taught that a “**lowering plate 50**” provided stepwise/gradual/intermittent lowering. Gruber, ¶¶ [0021], [0032]-[0033]. Braselmann taught another jack with a caulking gun jacking mechanism and a safety-enhancing, adjustable, incremental lowering mechanism like taught by the ’473 Patent. Braselmann, 1:16-42, 4:3-64. It would have been obvious to incorporate Braselmann’s incremental lowering mechanism into Gruber’s jack to provide safer and/or adjustable control of Gruber’s incremental lowering, rendering obvious claims 1-3 of the ’473 Patent.

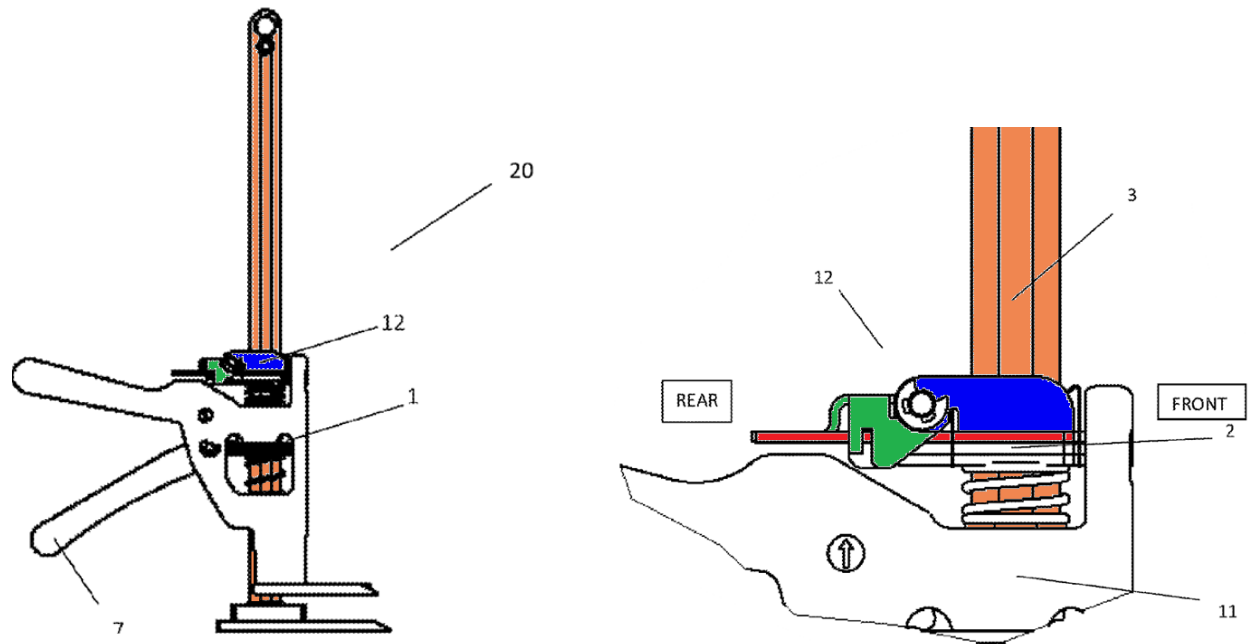
II. THE ’473 PATENT

The ’473 Patent claims priority to Norwegian Application No. 20190508, filed April 12, 2019, and is subject to AIA statutes. Ex. 1001, coversheet. The ’473 Patent discloses a jacking tool 20 with a jacking/lifting mechanism, an incremental lowering mechanism 12, and a complete release lever 10.

A. Caulking Gun Jacking Mechanism

The ’473 Patent concedes that caulking gun jacking mechanisms were conventional. Ex. 1001, 1:15-30; Ex. 1002, ¶30. As shown below, the ’473 Patent’s own jacking tool 20 included a jacking frame 11, **jacking shaft 3**, and a conventional caulking gun jacking mechanism comprising a jacking plate 1 biased towards an open state and a holding plate 2, above the jacking plate 1, biased

towards a locked/gripping state. Ex. 1001, 1:22-31, 2:25-31, claim 1, and FIGS. 1-2; Gruber, FIG. 1; Braselmann, FIG. 1.



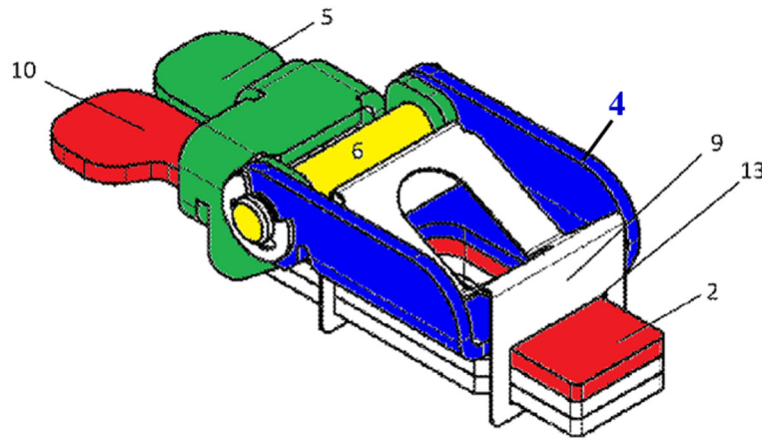
'473 Patent, FIGS. 1-2

B. Incremental Lowering Mechanism 12

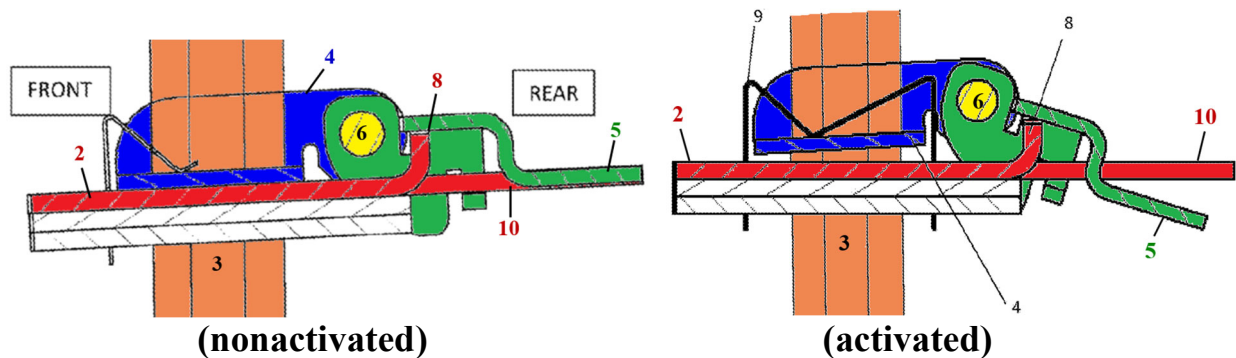
The '473 Patent's Background cautions that when the holding plate of a conventional jacking mechanism is released, the jack's frame and load can “‘fall’ uncontrollably along the jacking shaft.” '473 Patent, 1:33-34. The '473 Patent's solution is a lowering mechanism 12 that “control[s] the downward movement of the frame along the jacking shaft in a caulking gun jacking mechanism in an adjustable stepwise manner.” *Id.*, 1:33-35.

As shown below, the '473 Patent's lowering mechanism 12 comprises: a **lowering plate 4** on top of the **holding plate 2** and parallel to the **holding plate 2** when not activated, a spring 9 biasing the **lowering plate 4** towards the **holding**

plate 2, a thumb operable **pushing lever 5**, a **release lever 10** which is an extension of **holding plate 2**, a **hinge attachment 6** connecting the thumb operable **pushing lever 5** to the **lowering plate 4** at a rear end towards an operating handle 7, and a **pivot structure 8** connected to the **holding plate 2** a distance backward from the **hinge attachment 6**. Ex. 1001, claim 1 and 2:51-4:7.



'473 Patent, FIG. 4 (annotated)



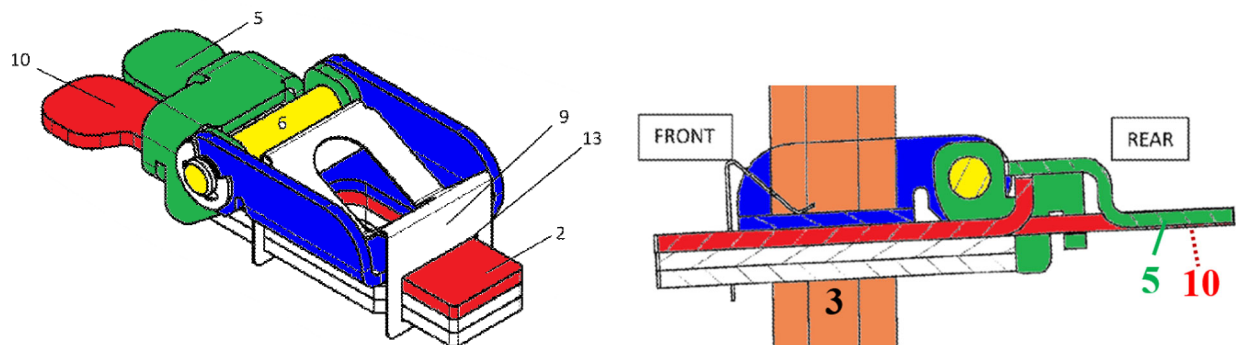
'473 Patent, FIGS. 7a-7b: Lowering Mechanism (annotated)

Starting from the nonactivated position in FIG. 7a, the stepwise lowering mechanism 12 is activated by pressing the **pushing lever 5** downward, which causes the **lever 5** to pivot around the **pivot structure 8**, which lifts the **lowering plate 4** up and causes the **lowering plate 4** to grip the **jacking shaft 3**. Ex. 1001,

2:57-63 and claim 1. As shown in FIG. 7b, pushing the **pushing lever 5** further pushes the **holding plate 2** downwards, which loosens the **holding plate 2** from the **jacking shaft 3** and moves the jacking frame 11 (see Ex. 1001, FIG. 2) down along the **jacking shaft 3** until the **holding plate 2** reaches an angle that stops the **holding plate 2** against the **jacking shaft 3** while the **lowering plate 4** still grips the **jacking shaft 3**. Ex. 1001, claim 1 and 2:63-3:20. When the operator releases the **pushing lever 5**, the spring 9 forces the **lowering plate 4** down towards the **holding plate 2** and the lowering mechanism 12 returns to the nonactivated position shown in FIG. 7a. Ex. 1001, 3:18-20. Repeatedly pushing the **pushing lever 5** lowers the frame 11 in a controlled, incremental/stepwise fashion.

C. Complete Release Lever 10

The jacking tool 20 includes a **release lever 10**, which is an extension of the **holding plate 2**. Ex. 1001, 4:4-5. Pressing the **release lever 10** disengages the **holding plate 2** from the **shaft 3**, which allows the frame 11 (see Ex. 1001, FIG. 2) to fall down the **shaft 3** in an unrestricted/continuous manner. Ex. 1002, ¶34.



'473 Patent, FIGS. 4, 7a (annotated)

As shown above, “the **rear end** of the **pushing lever [5]** and **release lever 10** ... is [sic] positioned beside each other for easy operation by the thumb of an operator as seen in FIG. 3, 4.” Ex. 1001, 4:4-7.

D. Challenged Claims

Challenged claims 1-3 are quoted below with added reference numbers from the specification for context:

1. A lowering mechanism [12] for a hand held jacking tool [20] comprising a jacking frame [11], a **jacking shaft [3]**, and a caulking gun jacking mechanism comprising at least one jacking plate [1] biased towards an open state and at least one holding plate [2], above the at least one jacking plate [1], being biased towards a gripping state, wherein the lowering mechanism [12] comprises:

a **lowering plate [4]** on top of the at least one **holding plate [2]** being parallel to the at least one **holding plate [2]** when not activated,

a spring [9] biasing the **lowering plate [4]** towards the at least one **holding plate [2]**,

a thumb operable **pushing lever [5]**,

a **release lever [10]** which is an extension of the at least one **holding plate [2]**,

a **hinge attachment [6]** connecting the thumb operable **pushing lever [5]** to the **lowering plate [4]** at a rear end towards an operating handle [7],

a **pivot structure [8]** connected to the thumb operable **pushing lever [5]** or the at least one **holding plate [2]** a distance backward from the **hinge attachment [6]**,

wherein the **lowering plate [4]** is lifted up and grips the **jacking shaft [3]** when the thumb operable **pushing lever [5]** is pushed downwards and pivots around the **pivot structure [8]** and in turn, pushes the at least one **holding plate [2]** downwards loosening the at least one **holding plate [2]** from the **jacking shaft [3]** and moving the jacking frame [11] down along the **jacking shaft [3]** a distance until the at least one **holding plate [2]** reaches an angle that stops the at least one **holding plate [2]** against the **jacking shaft [3]** while the **lowering plate [4]** still grips the **jacking shaft [3]**.

2. The lowering mechanism [12] according to claim 1, wherein the rear end of the thumb operable **pushing lever [5]** and the **release lever [10]** are positioned beside each other.

3. The lowering mechanism [12] according to claim 1, wherein the **pivot structure [8]** is moveable in a rear-front direction and/or in an up-down direction to regulate the distance of the downward movement of the jacking frame [11].

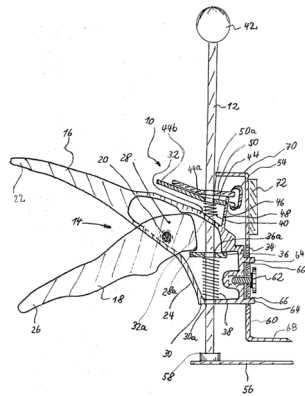
III. PRIOR ART

Gruber's December 12, 2002 publication date (Ex. 1003/1004, coversheet) and Braselmann's January 21, 1958 issue date (Ex. 1005, p. 3) were years before the '473 Patent's earliest claimed April 12, 2019 filing date (Ex. 1001, coversheet), so Gruber and Braselmann are 35 U.S.C. § 102(a)(1) [AIA] prior art.

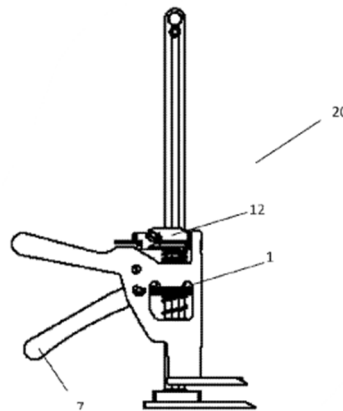
The '473 Patent's jacking mechanism, lowering mechanism, and release lever were all well known from Gruber and/or Braselmann. Ex. 1002, ¶37.

A. Gruber (Ex. 1003 (original)/ Ex. 1004 (translation)): Handheld Jack With Caulking Gun Jacking Mechanism, Complete Release Lever, And Incremental Lowering Mechanism

Gruber was not of record during prosecution of the '473 Patent. Gruber taught a handheld lifting jack that is very similar to the '473 Patent's jack. Ex. 1002, ¶39. Both have caulking gun jacking mechanisms, continuous/complete release levers, and incremental lowering mechanisms. *Id.*



Gruber, FIG. 1

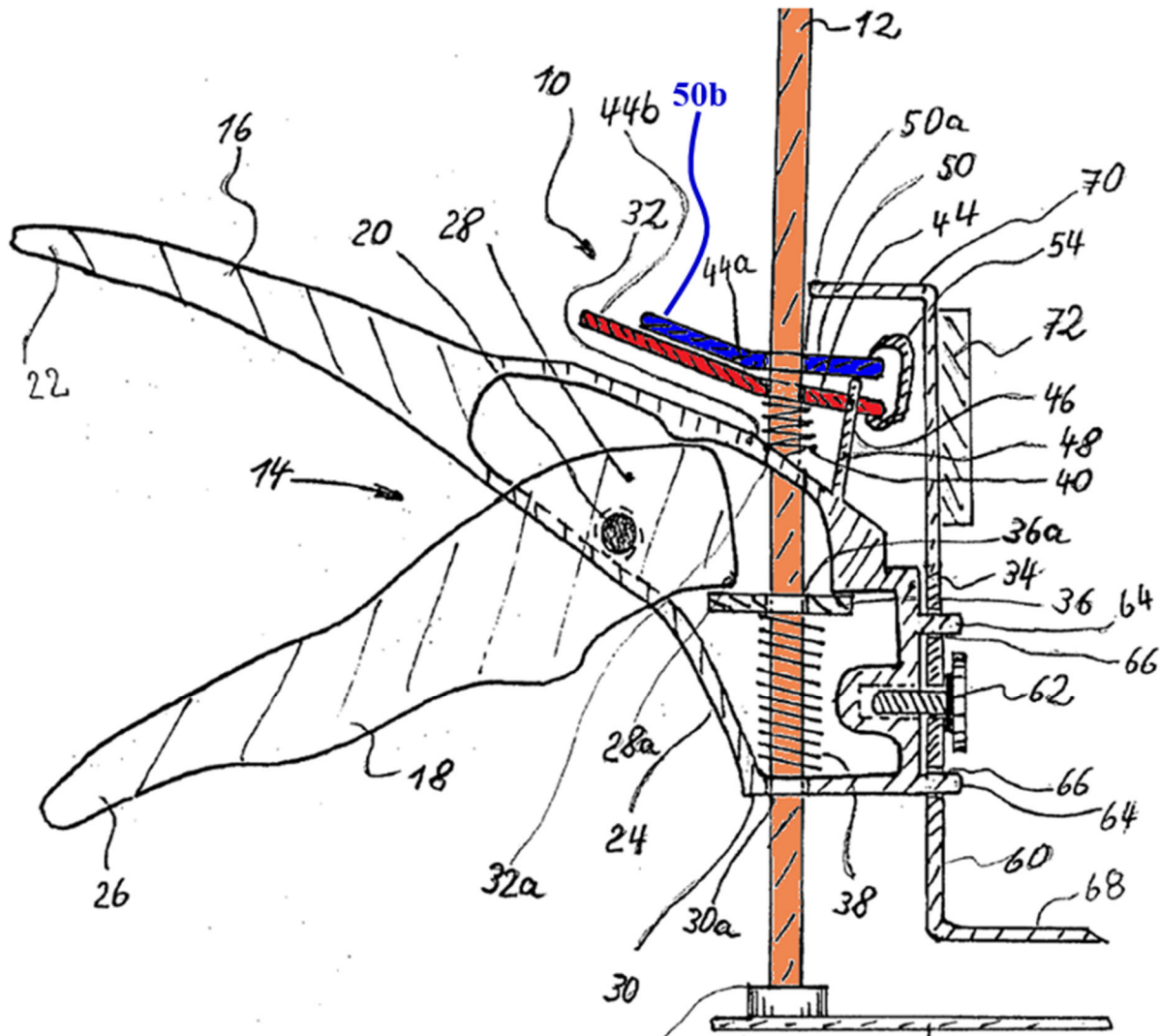


'473 Patent, FIG. 1

As shown below, just like in the '473 Patent, Gruber's "lifting device 10" includes: a jacking frame 22/24/30/32/34/48, a **jacking shaft** ("rod 12"), a caulking gun jacking mechanism comprising a jacking plate ("lifting disc 36") biased towards an open state, a **holding plate 44** ("**lowering plate 44**"), above the jacking plate 36, being biased towards a gripping state by a "spring 40," and an operating handle 18/26. Gruber, ¶¶ [0012]-[0018]²; *see also* Ex. 1002, ¶40.

² All cites to Gruber's text are to the English translation (Ex. 1004).

Gruber's caulking gun jacking mechanism works in the same way as disclosed and claimed in the '473 Patent. Gruber, ¶¶ [0029]-[0031]; Ex. 1002, ¶40.



Gruber, FIG. 1 (annotated; excerpt)

Like the '473 Patent, Gruber's lowering mechanism "makes it possible to lower the load both continuously [by pushing **release lever 44b**] and gradually[/incrementally]" by pushing **lever 50b**. Gruber, ¶ [0021]; Ex. 1002, ¶41.

Like the '473 Patent and as shown above, Gruber provides for complete/“continuous” lowering of the frame and load by using a thumb to push a

release lever (“**lowering operating area 44b**”) which is an extension of Gruber’s **holding plate 44**. Gruber, ¶¶ [0018], [0020]-[0021]; Ex. 1002, ¶42.

Like the ’473 Patent and as shown above, Gruber also includes an incremental/gradual lowering mechanism, which includes a “**lowering plate 50**” on top of the **holding plate** (“**lowering plate 44**”), and a thumb operable **pushing lever** (“**lowering operating area 50b**”). Gruber, ¶ [0019]-[0020], [0032]-[0033]; Ex. 1002, ¶43. Pressing the **pushing lever** (“**lowering operating area 50b**”) provides “controlled,” “intermittent,” “gradual[]” lowering. Gruber, ¶ [0021]; Gruber, ¶[0033] (“The intermittent downward movement allows the load to be lowered to the desired height in a controlled manner.”); Ex. 1002, ¶43. In particular:

[0032] When lowering the load, the second lowering **operating portion 50b** of the second **lowering plate 50** is pressed, thereby pressing the first lowering operating portion 44b of the first **lowering plate 44**. First, the first **lowering plate 44** is pivoted so that jamming with the rod 12 no longer occurs and the tongs 14 can be lowered. Since the second **lowering plate 50** is tilted at the same time, the downward movement is inhibited again after a short distance.

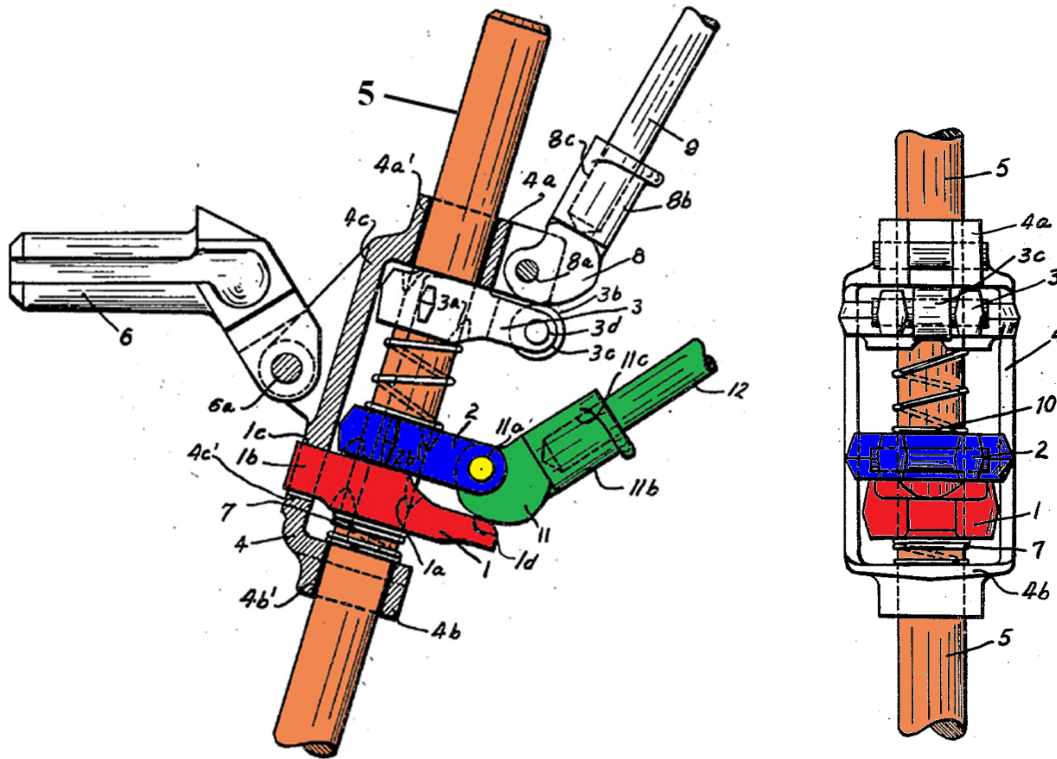
[0033] The second compression spring 40 and the return spring 54 return the first **lowering plate 44** and the second **lowering plate 50** to their initial position after each pressing of the lowering operating portion 50b or 44b. The intermittent downward movement

allows the load to be lowered to the desired height in a controlled manner.

Gruber, ¶¶ [0032]-[0033].

B. Braselmann (Ex. 1005): Lifting Jack with Caulking Gun Jacking Mechanism and Safer, Adjustable, Incremental Lowering Mechanism

Braselmann taught a lifting jack that utilizes the same type of caulking gun jacking mechanism as in the '473 Patent and Gruber. Braselmann, FIG. 1; Ex. 1002, ¶45. As shown below, just like in the '473 Patent and Gruber, Braselmann's jack includes: a jacking frame 4, a **jacking shaft 5**, and a jacking mechanism comprising a jacking plate 3 biased towards an open state by a spring 10, a **holding plate 1** biased towards a gripping state by a spring 7, and a jacking lever 8/9. *Id.*; Braselmann, 3:5-62.

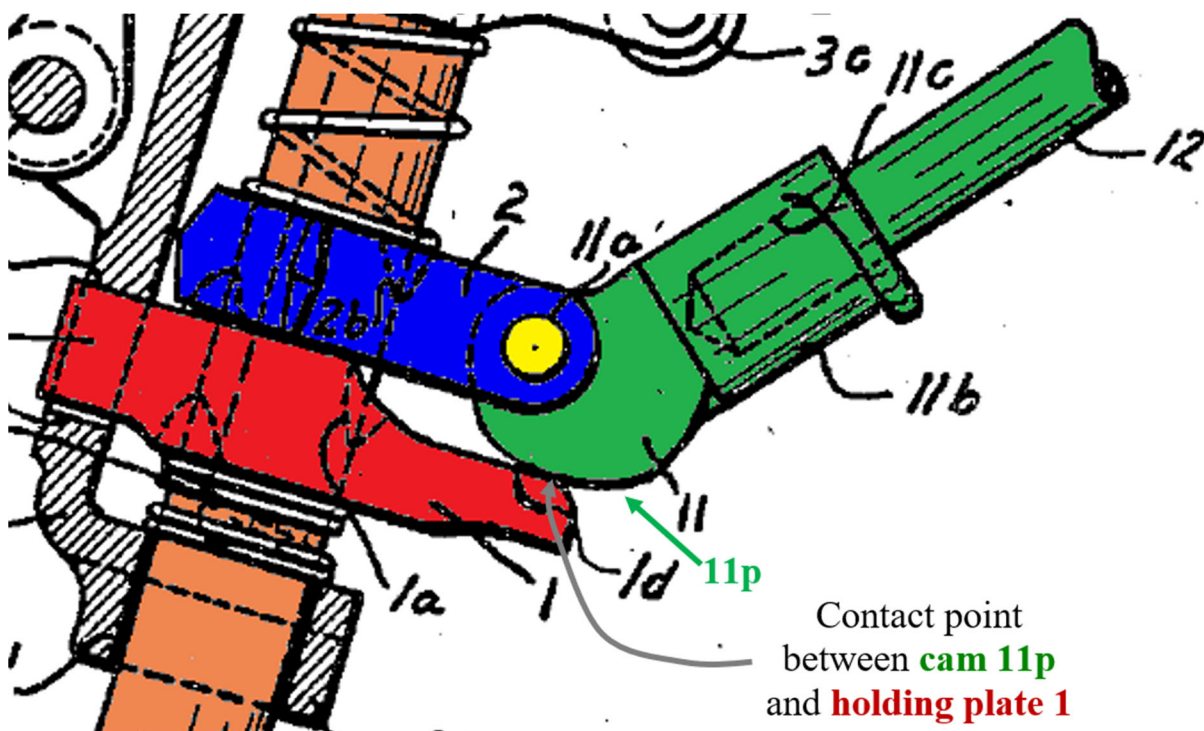


Braselmann, FIGS. 1-2 (annotated; excerpt)

Braselmann's jack is "hand held" (Ex. 1001, claim 1) because it can be held by the operator's hand(s). Braselmann, FIG. 1; Ex. 1002, ¶79(b). Braselmann's jack can also be positioned and operated by hand. Braselmann, 4:67 (hand operated "lever 12"); Ex. 1002, ¶79(b). A POSITA would have understood that Braselmann's jack was the type of handheld jack commonly used in the art to change an automobile tire. Ex. 1002, ¶79(b); August 1964 VW Instruction Manual (Ex. 1007), pp. 28-29 (showing hand transportation, positioning, and operation of a jack like Braselmann's).

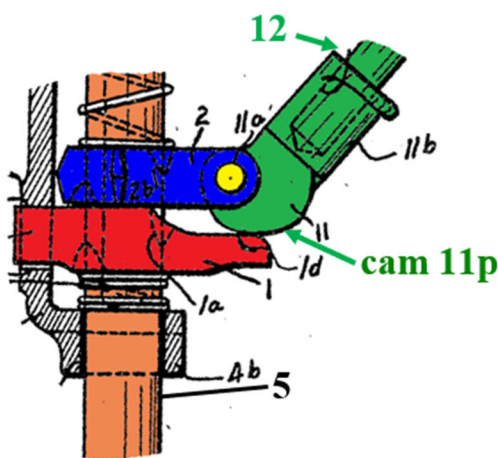
Braselmann has a step-wise/incremental lowering mechanism that provides safe lowering of the jack and "prevents rapid and uncontrolled descent" of the

frame 4. Braselmann, 1:16-42; Ex. 1002, ¶47. As shown below, Braselmann's incremental lowering mechanism includes: a **lowering plate** ("clamping member 2") on top of a **holding plate** ("clamping member 1") and parallel to the **holding plate 1** when not activated, a "spring 10" biasing the **lowering plate 2** towards the **holding plate 1**, a **pushing lever 11/12** ("lever or cam 11" either alone or in combination with "lever 12"), and a **hinge attachment 11a** connecting the **pushing lever 11/12** to the **lowering plate 2** at a rear end towards an operating handle 8/9. Braselmann, 3:63-5:36; Ex. 1002, ¶47. Braselmann's **pushing lever 11/12** includes a **cam portion 11p** that contacts the **holding plate 1** backward (to the right and down as shown in Braselmann's skewed FIG. 1) from the **hinge attachment 11a**. Ex. 1002, ¶47.

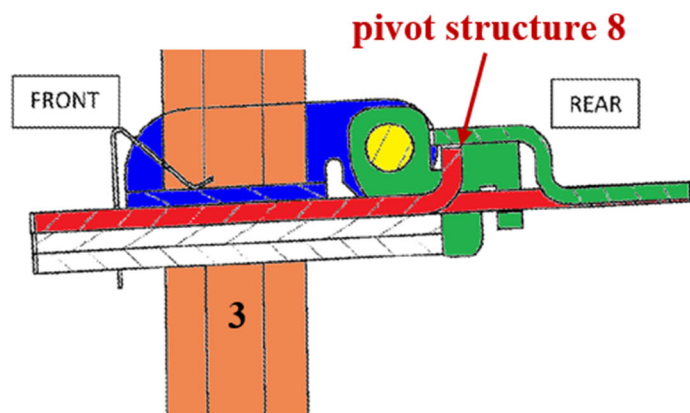


Braselmann, FIG. 1 (excerpt; annotated)

Brasemann's controlled/incremental lowering mechanism functions similarly to the '473 Patent's lowering mechanism 12, except that Brasemann utilizes a **cam 11p** that is connected to the **pushing lever 11/12** (below, left) instead of the '473 Patent's **pivot structure 8** connected to the **holding plate 2** (below, right). Brasemann, FIG. 1; Ex. 1001, FIG. 6; Ex. 1002, ¶48.



Brasemann, FIG. 1
(excerpt; rotated; annotated)



'473 Patent, FIG. 7a (annotated)

As shown above left, when Brasemann's **pushing lever 11/12** is initially pushed downwards, it pushes the **hinge attachment 11a** upward, which causes the **lowering plate 2** to lift up and grip the **jacking shaft 5**. Brasemann, 4:3-60; Ex. 1002, ¶49. Further downward pushing of the **pushing lever 11/12** causes the **cam 11p** to push the **holding plate 1** downwards loosening the **holding plate 1** from the **jacking shaft 5** and moving the jacking frame 4 down along the **jacking shaft 5** a distance until the **holding plate 1** reaches an angle that stops **holding plate 1**

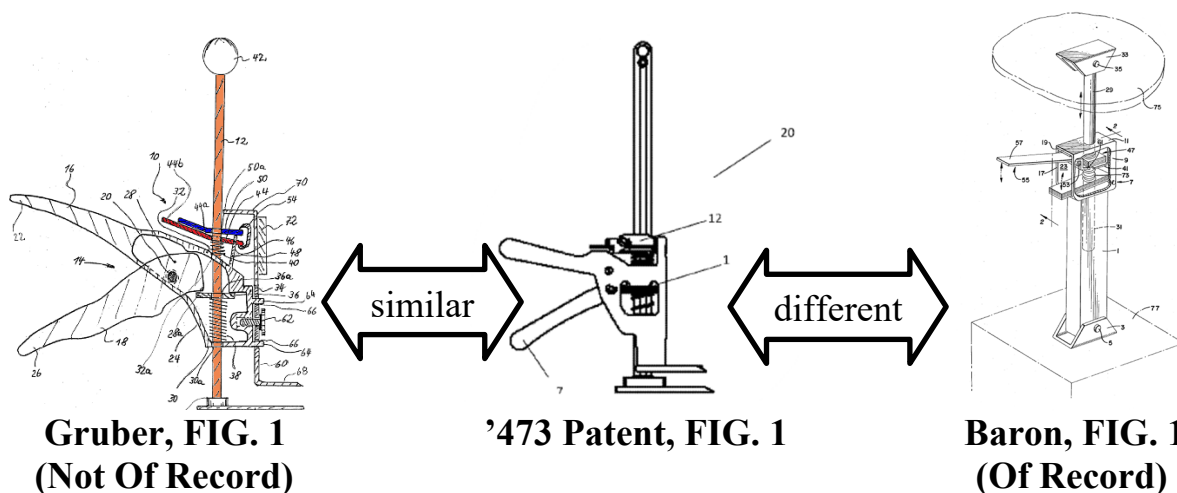
against the **jacking shaft 5** while the **lowering plate 2** still grips the **jacking shaft 5**. Braselmann, 4:3-60; Ex. 1002, ¶49. The amount of lowering is proportional to the extent to which the operator pivots the **pushing lever 11/12** downwardly, which enables the operator to adjust and precisely control the amount of lowering provided by Braselmann's lowering mechanism. Braselmann, 4:3-46; Ex. 1002, ¶49.

Braselmann is representative of the widespread conventional use of adjustable, incremental lowering mechanisms like claimed in the '473 Patent. *See* August 1964 VW Instruction Manual (Ex. 1007), pp. 28-29.

IV. USPTO ERRORS IN ISSUING THE '473 PATENT

The USPTO erroneously issued claims 1-3 of the '473 Patent for two reasons, first because the USPTO lacked the most relevant prior art (Gruber), and second because it mistakenly found that multiple claim limitations were unknown in the art.

Specifically, the USPTO's Notice of Allowability identified U.S. Patent No. 4,084,792 ("Baron") as the "closest prior art" (Ex. 1006, p. 6), but Gruber, which was not of record, was far closer. The USPTO allowed the '473 Patent because Baron "does not teach a release lever" (Ex. 1006, p. 6), but Gruber taught the claimed **release lever 44b**. Gruber, FIG. 1 and ¶ [0018]. Even a cursory comparison of these references shows that Gruber is far more relevant than Baron:



Gruber was also closer prior art than Baron because unlike Baron, Gruber taught of a hand held jacking tool with (1) a “caulking gun jacking mechanism,” (2) a complete “release lever,” and (3) an incremental “lowering mechanism,” as recited in challenged claim 1. *See* Section III.A, above. Indeed, the below invalidity analysis confirms that Gruber taught every limitation in the challenged claims, except that Gruber used a different type of incremental lowering mechanism than claimed in the '473 Patent (but which was already well known in Braselmann).

In addition, the USPTO further erred by allowing the '473 Patent on the ground that: (a) Baron failed to teach the claimed lowering mechanism in which the “holding plate is pushed downwards when the pushing lever is pushed downwards and the lowering plate is lifted up,” and (b) another reference -- U.S. Patent No. 3,064,945 (“Forbes”) -- likewise failed to teach such a lowering mechanism. Ex. 1006, pp. 6-7. The USPTO erred by not recognizing that Braselmann already taught the type of controlled lowering mechanism that was

found missing from Baron and Forbes. Braselmann's **holding plate 1** is pushed downwards when the **pushing lever 11/12** is pushed downwards and the **lowering plate 2** is lifted up. *See* Section III.B, above.

Absent these errors, the USPTO would have rejected the challenged claims as obvious over Gruber in view of Braselmann, as explained below.

V. PERSON OF ORDINARY SKILL IN THE ART (“POSITA”)

A POSITA would have had a Bachelor of Science degree in Mechanical Engineering or a related field, and at least two (2) years of professional or practical experience with mechanical devices, or a comparable combination of education and experience, such as ten years of practical experience in industry. Ex. 1002, ¶26. All assertions in this petition are made from this POSITA's perspective before April 12, 2019, as supported by Dr. Klopp's expert declaration (Ex. 1002).

VI. CLAIM CONSTRUCTION

A. Construing “Pivot Structure” (Claim 1)

Challenged claim 1 requires “a pivot structure,” which the pushing lever “pivots around.” In a parallel UPC proceeding involving the '473 Patent's European counterpart (EP3953541B1), Patent Owner alleges that a cam like Braselmann's **cam 11** is an infringing “pivot structure.” Petitioner disagrees because “pivot structure” should be construed to have “a fixed pivot point around which the pushing lever pivots.” Claim 1 was obvious either way, so the Board can

likely avoid resolving this construction dispute. Petitioner nonetheless takes this opportunity to highlight the parties' constructions.

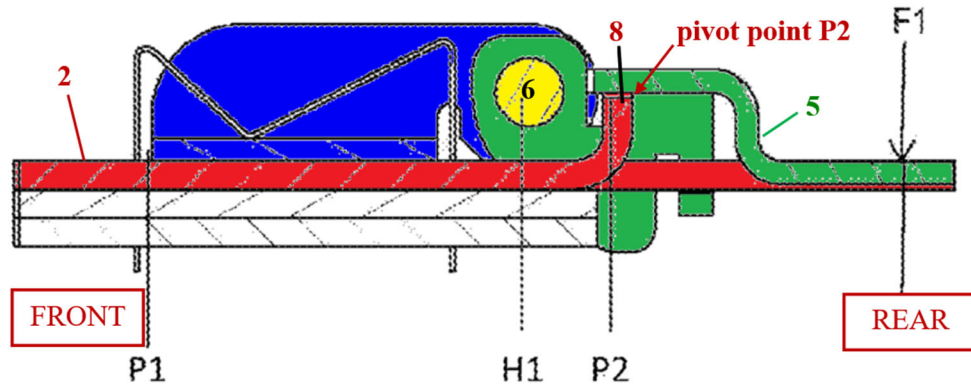
1. Petitioner's Construction: "Pivot Structure" Means "A Structure Having A Fixed Pivot Point Around Which The Pushing Lever Pivots"

The claims and specification of '473 Patent show that "pivot structure" means "a structure having a fixed pivot point around which the pushing lever pivots." Ex. 1002, ¶56. This is true for several reasons.

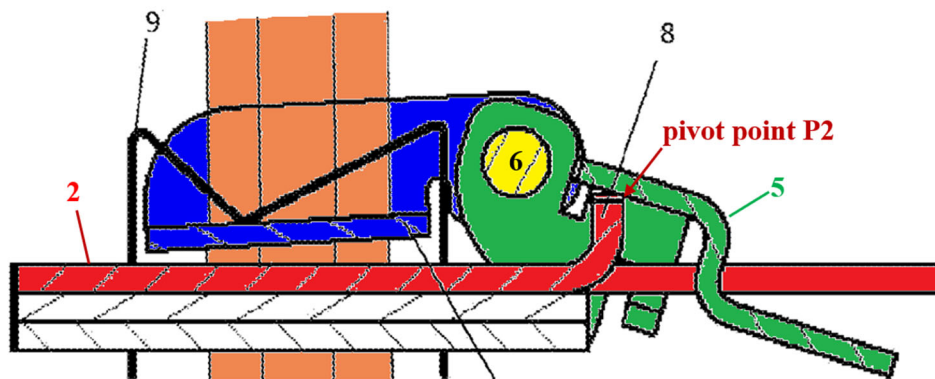
First, the language of claim 1 specifically requires that the "pushing lever ... pivots around the pivot structure." Ex. 1001, 4:35-37; *id.*, 2:60-61 ("[T]he **pushing lever [5]** is pivoting around a **pivot structure 8**[.]"). The pivot structure must have a fixed pivot point for this "pivot[ing] around" to occur. Ex. 1002, ¶57.

Second, the language of claim 1 also requires that the **pivot structure** "connect[s] to the thumb operable **pushing lever** or the at least one **holding plate a distance** backward from the **hinge attachment**." The specification refers to this distance as "the distance H1-P2" (Ex. 1001, 3:31) shown below in FIG. 5. Ex. 1002, ¶58. For there to be "a" distance, per claim 1, **pivot point P2** must have a fixed position backward from the **hinge attachment 6**. *Id.*

Third, the specification confirms this construction by illustrating that the “**pivot point, P2**³, associated with the **pivot structure 8**” (Ex. 1001, 3:24-25) is what the **pushing lever 5** pivots around, as shown in FIGS. 5 and 7. Ex. 1002, ¶59.



'473 Patent, FIG. 5 (annotated)



'473 Patent, FIG. 7b (annotated)

Fourth, the specification makes clear that the positions and “positional distribution” of the **pivot point P2** and other points “must” be known and calculated to ensure correct operation of the lowering mechanism. Ex. 1001, 3:22-

³ A POSITA would have understood that the locations of pivots H1 and P2 are crudely shown in FIG. 5. Ex. 1002, ¶59, n.3. H1 is actually at the center of the **hinge 6**'s circle. *Id.* P2 is actually at the upper right corner of the **pivot structure 8**, as confirmed by FIGS. 5, 7b, and 7c. *Id.*

42; Ex. 1002, ¶60. And, in the context of the illustrated **pivot structure 8** with its fixed **pivot point P2**, the '473 Patent admits that the critical “positional distribution of P1, P2, H1 and F1 are hard to calculate and have to be tested and tried.” Ex. 1001, 3:27-29; Ex. 1002, ¶60. If the position of the **pivot structure 8** and its **pivot point P2** contemplated by the '473 patent was construed broadly to allow variability, such calculations would be even more complex and outside the teachings of the '473 Patent. Ex. 1002, ¶60.

A POSITA would have understood that the “pivot structure” claimed, disclosed, and contemplated by the '473 Patent covered only a fixed pivot point, just as shown in FIGS. 5, 7b, and 7c, to facilitate such calculations. Ex. 1001, 3:27-29; Ex. 1002, ¶61. It is only by virtue of **pivot point P2** being in a fixed position, when actuating the **pushing lever 5**, that **point P2** can provide a fixed, known ratio, such as (H1-P2):(P1-H1). Ex. 1001, 3:22-42; Ex. 1002, ¶61.

Fifth, the '473 Patent recognizes that the illustrated embodiment's **pivot structure 8** connects to the **holding plate 2**, not the **pushing lever 5**. Ex. 1001, 2:59-60 and FIGS. 5 and 7b; Ex. 1002, ¶62. Only the **pivot structure 8** connected to the **holding plate 2** has a **pivot point P2**, which the **pushing lever 5** “pivots about” (Ex. 1001, claim 1). When actuated/pushed, the **pushing lever 5** slides along and pivots about the **pivot point P2**. Ex. 1001, FIGS. 5, 7b, 7c; Ex. 1002, ¶62. The illustrated **pushing lever 5** does not “pivot about” any portion of the

pushing lever 5 itself, so the specification correctly never states that a pivot point/pivot structure connects to the **pushing lever 5** in the illustrated embodiment. Ex. 1002, ¶62. If the sliding contact surface of the **pushing lever 5** could somehow be a “pivot structure” (it cannot), then the specification would have stated that a pivot structure connects to the **pushing lever 5**. *Id.* It does not. *Id.* A POSITA would have therefore understood from the patent’s disclosure of the **pivot structure 8** being connected to the **holding plate 2**, not the **pushing lever 5**, that only a structure with a fixed **pivot point** (e.g., **P2**) “around” which the **pushing lever** “pivots” is a “pivot structure.” ’473 Patent, claim 1; Ex. 1002, ¶62.

To be consistent with the claims and specification, “pivot structure” should be construed to mean “a structure having a fixed pivot point around which the pushing lever pivots.” Ex. 1002, ¶63.

2. Patent Owner’s Construction: “Pivot Structure” Encompasses A Sliding Cam

In the parallel UPC proceeding involving the ’473 Patent’s European counterpart (EP3953541B1), Patent Owner alleges that in Petitioner’s allegedly infringing tool, a cam like Braselmann’s **cam 11** is an infringing “pivot structure,” despite making sliding contact with Braselmann’s **holding plate 2** via a point-of-contact that varies as a function of the cam’s orientation. As best Petitioner can tell, Patent Owner somehow construes “pivot structure” to encompass a sliding cam.

Patent Owner's implicit construction is incorrect because it is inconsistent with the claims and specification, as explained above in Section VI.A.1.

Although Petitioner disputes Patent Owner's implicit construction, the Board likely need not resolve this dispute because claim 1 would have been obvious under either construction, as explained below in Section VII.B.10.

B. Construing “Beside” (Claim 2)

Challenged claim 2 requires that “the rear end of the thumb operable pushing lever and the release lever are positioned **beside** each other.” In the parallel UPC proceeding, Patent Owner asserts that “beside” means “nearby” (i.e., in any direction such as up/down or sideways). Patent Owner is mistaken because “beside” means “laterally adjacent.” Claim 2 was obvious under either construction, as shown below in Section VII.C, so the Board can likely avoid resolving this construction dispute. Petitioner nonetheless highlights the parties' different constructions.

1. Petitioner's Construction: “Beside” Means “Laterally Adjacent”

The claims, specification, figures, and prosecution history of the '473 Patent show that “beside” refers to a lateral direction, rather than just proximity (nearby). Ex. 1002, ¶66.

The claims themselves define a precise directional reference frame having orthogonal up/down, front/rear, and side directions:

- a “holding plate, **above** the ... jacking plate” (claim 1);
- “a lowering plate **on top of** the ... holding plate” (claim 1);
- “a hinge attachment connecting the thumb operable pushing lever to the lowering plate at **a rear end** towards an operating handle” (claim 1);
- “a pivot structure connected to the thumb operable pushing lever or the ... holding plate a distance **backward** from the hinge attachment” (claim 1);
- “the lowering plate is lifted **up**” (claim 1);
- “the thumb operable pushing lever is pushed **downwards**” (claim 1);
- “pushes the ... holding plate **downwards**” (claim 1);
- “moving the jacking frame **down along the jacking shaft**” (claim 1);
- “the **rear end** of the thumb operable pushing lever and the release lever are positioned **beside** each other” (claim 2); and
- “the pivot structure is moveable in a **rear-front direction** and/or in an **up-down direction** to regulate the distance of the **downward** movement of the jacking frame” (claim 3).

Ex. 1001, claims 1-3. A POSITA would have understood from this claim language that the claims define the following 3D reference frame:

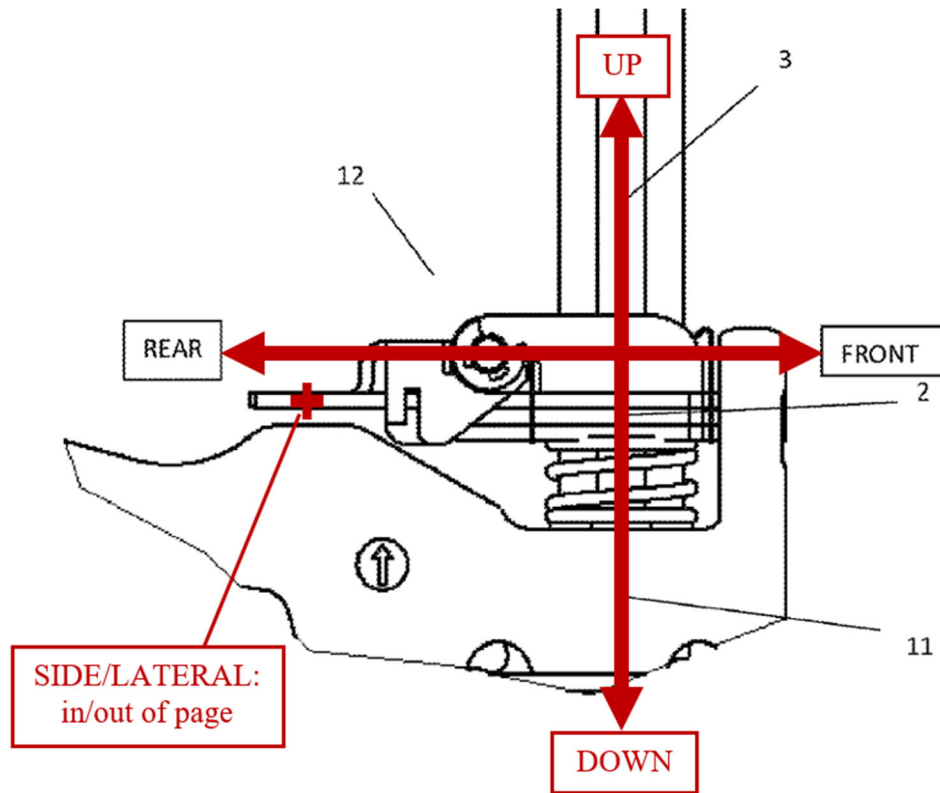
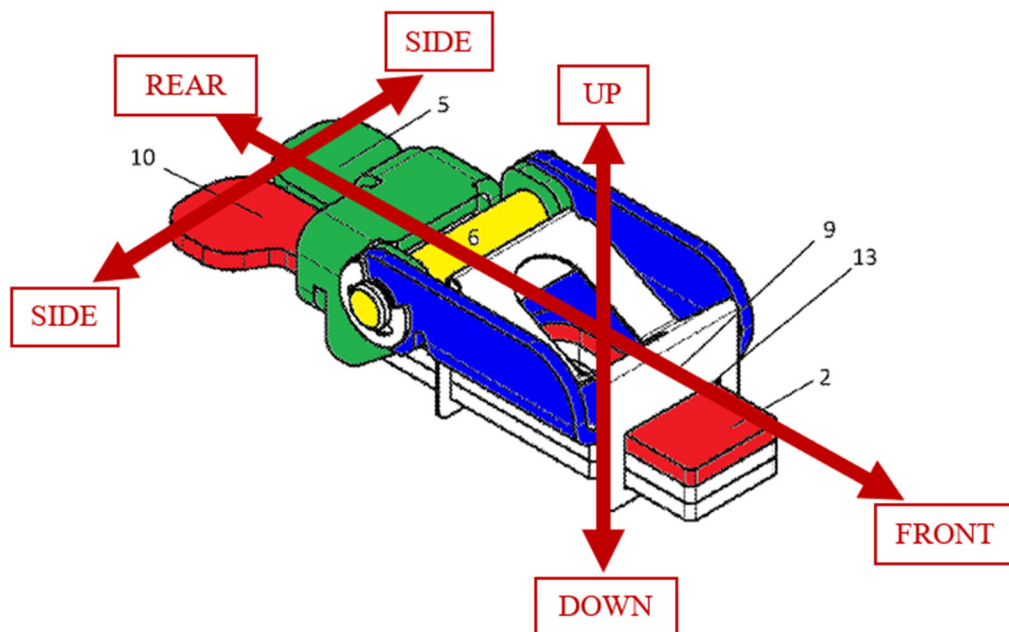


Fig. 2

'473 Patent, FIG. 2 (red annotations added)

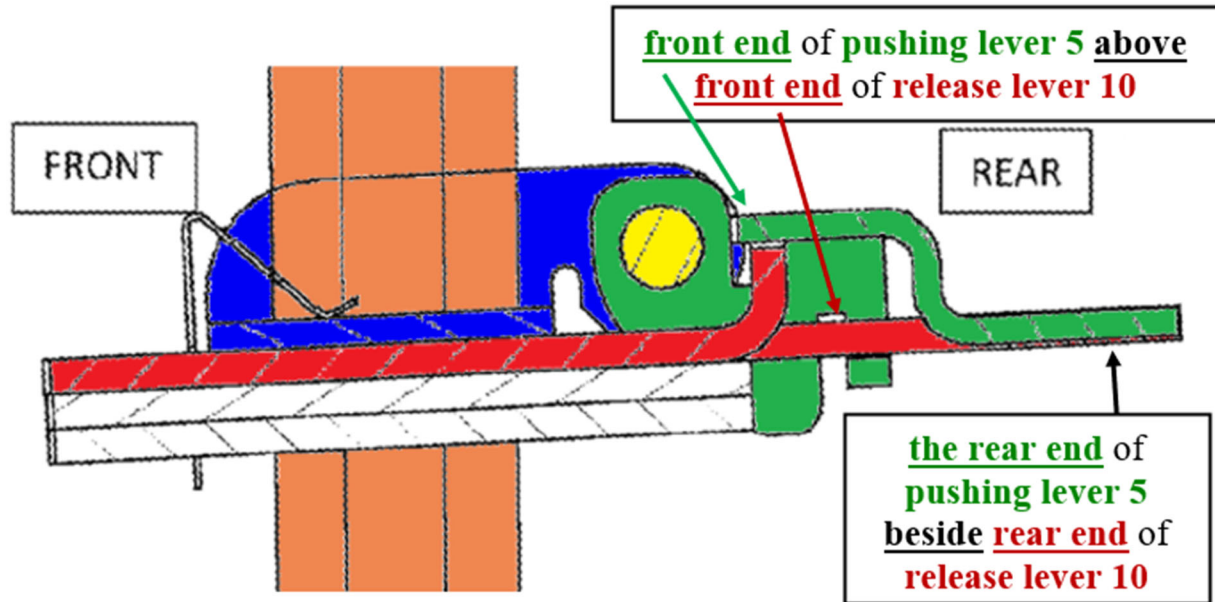


'473 Patent, FIG. 4 (annotated)

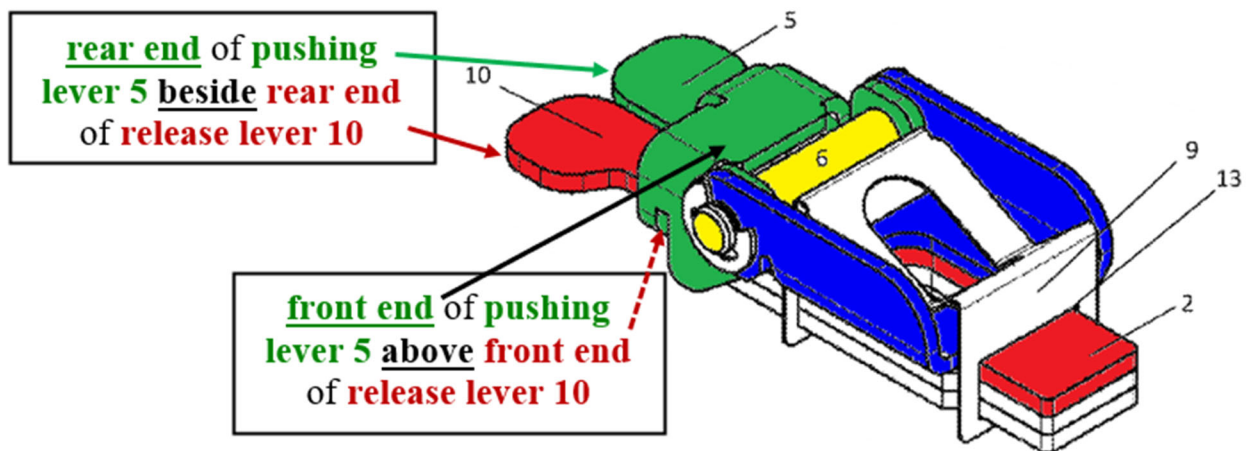
Ex. 1002, ¶67; Ex. 1001, FIG. 7a (“FRONT”/“REAR”). Given the specificity with which the claims recite these orthogonal directions, a POSITA would have understood that “beside” refers to the lateral direction, not the up/down direction of the jacking shaft or the front/rear direction. Ex. 1002, ¶67.

If Patent Owner intended to merely recite proximity (“nearby”), without directionality, Patent Owner would have used a word of proximity like “nearby,” rather than the directional word “beside.” Ex. 1002, ¶68.

Claim 2’s precise language further supports Petitioner’s construction by requiring that “the rear end of the thumb operable **pushing lever** and the **release lever** are positioned beside each other.” In the patent’s illustrated embodiment, only the claimed “rear end of the thumb operable **pushing lever**” **5** is actually “beside” (i.e., laterally adjacent) the “rear end of ... the **release lever 10**.” A front end of the thumb operable **pushing lever 5** is above (not laterally adjacent) the **front end** of the **release lever 10**. Ex. 1002, ¶69.



'473 Patent, FIG. 7a (annotated)



'473 Patent, FIG. 4 (annotated)

If “beside” meant “nearby” (e.g., above or beside), there would have been no reason to specify that only the “the rear end of the thumb operable pushing lever” is what is beside “the rear end of ... the release lever.” Ex. 1002, ¶70. Claim 2’s needed clarification that only the rear ends of these levers were “beside” each

other, when read in the context of the specification, would have informed a POSITA that “beside” referred to the lateral direction. Ex. 1002, ¶70.

The specification provides further support by explaining and illustrating that “the rear end of the pushing lever [5] and a release lever 10 ... is [sic] positioned beside each other **for easy operation by the thumb of an operator as seen in FIG. 3, 4.**” Ex. 1001, 4:4-7. A POSITA would have understood from this disclosure that laterally adjacent (i.e., beside) arrangement of the rear end of the **pushing lever 5** and the **release lever 10** is what provides “easy operation by the thumb of an operator.” Ex. 1001, 4:4-7; *see also* Ex. 1002, ¶71. It would be more difficult for an operator’s thumb to reach the levers if they were arranged one over the other. Ex. 1002, ¶71. As a result, a POSITA reading claim 2 in the context of the specification would have understood “beside” to mean laterally adjacent. *Id.*

The specification further confirms that Patent Owner intended to distinguish between different directions in a 3D reference frame by “describ[ing] the invention with directions up-down as seen in FIG. 1 and rear as pointing towards the user.” Ex. 1001, 2:20-21; Ex. 1002, ¶72.

During an EPO opposition involving the ’473 Patent’s European counterpart (EP3953541B1), even Patent Owner admitted that because Gruber’s levers 44b, 50b have an over/under relationship (*see* Gruber, ¶ [0020] and FIG. 1), they are not

“positioned beside each other according to claim 2.” Ex. 1008, p. 27; Ex. 1002, ¶73.

In view of this record, “beside” in claim 2 should be construed to mean “laterally adjacent,” rather than merely “nearby.” Ex. 1002, ¶74.

2. Patent Owner’s Construction: “Beside” Means “Nearby”

Patent Owner’s “nearby” construction is incorrect because it is inconsistent with the claims, specification, and prosecution history of the patent, as explained above in Section VI.B.1. However, claim 2 would have been obvious under either construction, as explained below in Section VII.C, so the Board can likely find claim 2 obvious without resolving this dispute.

VII. CHALLENGE AND REQUESTED RELIEF

Claims 1-3 of the ’473 Patent are unpatentable under 35 U.S.C. §103 as obvious over Gruber in view of Braselmann.

A. Invalidity Ground: Gruber In View Of Braselmann

1. Gruber And Braselmann Are Analogous Art

A POSITA would have obviously looked to Braselmann for ways to improve Gruber’s jack because they are analogous art for at least two reasons. *In re Clay*, 966 F.2d 656, 658-59 (Fed. Cir. 1992) (“Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is

not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.”).

First, Gruber, Braselmann, and the '473 Patent are in the same field of endeavor: incremental/gradual/stepwise lowering mechanisms for jacking tools. Ex. 1001, 1:14-18; Sections II.B and III, above; Ex. 1002, ¶78. Even if the field of endeavor was overly narrowly limited to hand held tools, Gruber and Braselmann are still in this same field because they are “hand held” (e.g., they can be held in the operator’s hands (and/or be operated by hand)). *See* Sections III.A.-III.B., above; Ex. 1002, ¶79. Similarly, even if the field was overly limited to caulking gun jacking mechanisms, Gruber and Braselmann use caulking gun jacking mechanisms. *See* Sections III.A.-III.B., above; Ex. 1002, ¶¶80-81.

Second, Braselmann and Gruber are alternatively analogous art because their lowering mechanisms are reasonably pertinent to the particular problem faced by the '473 Patent’s inventor and by Gruber and Braselmann, i.e., providing a lowering mechanism to control the lowering of a lifting jack in a stepwise and/or safe manner. Ex. 1001, 1:31-35; Sections III.A.-III.B., above; Ex. 1002, ¶82.

A POSITA therefore would have obviously looked to Braselmann as analogous art for ways to improve Gruber’s jack. Ex. 1002, ¶83.

2. It Would Have Been Obvious To Have Incorporated Braselmann's Incremental Lowering Mechanism Into Gruber

It would have been obvious to incorporate Braselmann's incremental lowering mechanism (i.e., the concept embodied in Braselmann's **lowering plate 2**, **pushing lever 11/12 and cam 11**, **hinge attachment 11a**, and spring 10) into Gruber's jack, for example in place of Gruber's **lowering plate 50** and spring 54, for at least the following reasons.

First, a POSITA would obviously make this modification to make Gruber's lowering mechanism safer. Ex. 1002, ¶¶84-85. To use Gruber's "intermittent," "gradual[]" lowering mechanism, the operator pushes Gruber's **pushing lever 50b**, which pushes down and disengages the **holding plate 44**, which causes the frame to fall a "short distance" until the **lowering plate 50** engages the **shaft 12**. Gruber, ¶¶ [0032]-[0033]; Ex. 1002, ¶85. Although Gruber's "intermittent" lowering mechanism provides safer, more "controlled" lowering (Gruber, ¶¶ [0020]-[0021], [0032]-[0033]), a POSITA would nonetheless recognize that a risk remains that pushing Gruber's **pushing lever 50b** might cause Gruber's **holding plate 44** to disengage from the **shaft 12** without the **lowering plate 50** quickly engaging the **shaft 12**, which could disadvantageously result in an unintended, larger, and less controlled free fall. Ex. 1002, ¶85; Braselmann, 1:20-32.

Braselmann recognized that incremental/"step-wise" lowering mechanisms like Gruber's could result in the "[un]safe[]," "undesirable," "rapid and unchecked

descent of the load.” Braselmann, 1:20-31; Ex. 1002, ¶86. Braselmann overcame such “disadvantages” via an improved adjustable lowering mechanism that “prevents rapid and uncontrolled descent of the load.” Braselmann, 1:33-42. As shown above in Section III.B, Braselmann’s improved/safer incremental lowering mechanism comprises: (a) a **lowering plate 2** disposed above the **holding plate 1**, (b) a spring 10 biasing the **lowering plate 2** toward the **holding plate 1**, (c) a **pushing lever 11/12** pivotally connected to the **lowering plate 2** at a **hinge attachment 11a**, and (d) contact between the **holding plate 1** and a **cam portion 11p** of the **pushing lever 11/12**. Braselmann, 3:63-4:60; Ex. 1002, ¶86.

Braselmann’s incremental lowering mechanism ensures that when the **pushing lever 11/12** is pressed (resulting in clockwise movement as shown in FIG. 1 of Braselmann), the **lowering plate 2** engages the **shaft 5** before the **holding plate 1** disengages from the **shaft 5**. Braselmann, 4:10-16 (“This arrangement of the parts is such that the **clamping member [i.e., lowering plate] 2** is first moved into its clamping position” and then “the **clamping member [i.e., holding plate] 1** is thereupon moved out of its clamping position...”); Ex. 1002, ¶86.

Conversely, Braselmann’s lowering mechanism ensures that the **holding plate 1** reengages with the **shaft 5** when the **lowering plate 2** disengages from the **shaft 5**. Braselmann, 4:24-46; Ex. 1002, ¶87. A POSITA would have understood that Braselmann’s incremental lowering mechanism prevents the type of

uncontrolled freefall that is possible with Gruber’s incremental lowering mechanism by preventing a scenario in which both the **holding plate 1** and **lowering plate 2** are simultaneously disengaged from the **shaft 5** during incremental lowering. Ex. 1002, ¶87.

In sum, it would have been obvious to have replaced Gruber’s incremental lowering mechanism with Braselmann’s safer incremental lowering mechanism to ensure that under all circumstances, the incremental lowering mechanism “prevents rapid and uncontrolled descent of the load supported by the lifting device.” Braselmann, 1:41-42. This obvious modification retains Gruber’s separate “continuous” lowering mechanism (**release lever 44b**), so the operator can still advantageously choose between “continuous[] and gradual[/incremental]” lowering, as taught by Gruber. Gruber, ¶¶[0020]-[0021]. Ex. 1002, ¶88.

Second, it would have been obvious to incorporate Braselmann’s incremental lowering mechanism into Gruber’s jack to enable the operator to adjust the amount of lowering. Ex. 1002, ¶89. Gruber’s intermittent lowering mechanism does not afford precise, adjustable control over the “short distance” free fall resulting from each push of the **pushing lever 50b**. *See* Section III.A; Ex. 1002, ¶89. In a parallel EPO opposition proceeding, Patent Owner asserted that Gruber lacks “adjustable lowering movement,” and “only allows lowering in a

fixed incremental step for each actuation push on the second lowering actuation region 50b.” Ex. 1008, p. 18.

In contrast, a POSITA would have understood that Braselmann’s incremental lowering mechanism advantageously enables the operator to adjust the amount of lowering by adjusting how much the operator pivotally actuates Braselmann’s **pushing lever 11/12**. *See* Section III.B, above; Braselmann, 4:3-46; Ex. 1002, ¶90. Pushing Braselmann’s **pushing lever 11/12** downwardly a small amount results in a small amount of lowering, and further pushing yields proportionally more lowering. *See* Section III.B, above; Ex. 1002, ¶90. It would have been obvious to incorporate Braselmann’s adjustable, incremental lowering mechanism into Gruber’s jack to achieve Braselmann’s more precisely controlled, adjustable lowering. Ex. 1002, ¶90.

Third, such a “mere application of a known technique [(Braselmann’s safer, adjustable, incremental lowering mechanism)] to a piece of prior art ready for the improvement,” i.e., Gruber’s incremental lowering mechanism, would have been obvious because it involves no “more than the predictable use of prior art elements according to their established functions.” *KSR Int’l. Co. v. Teleflex Inc.*, 550 U.S. 398, 417-18 (2007); Ex. 1002, ¶91.

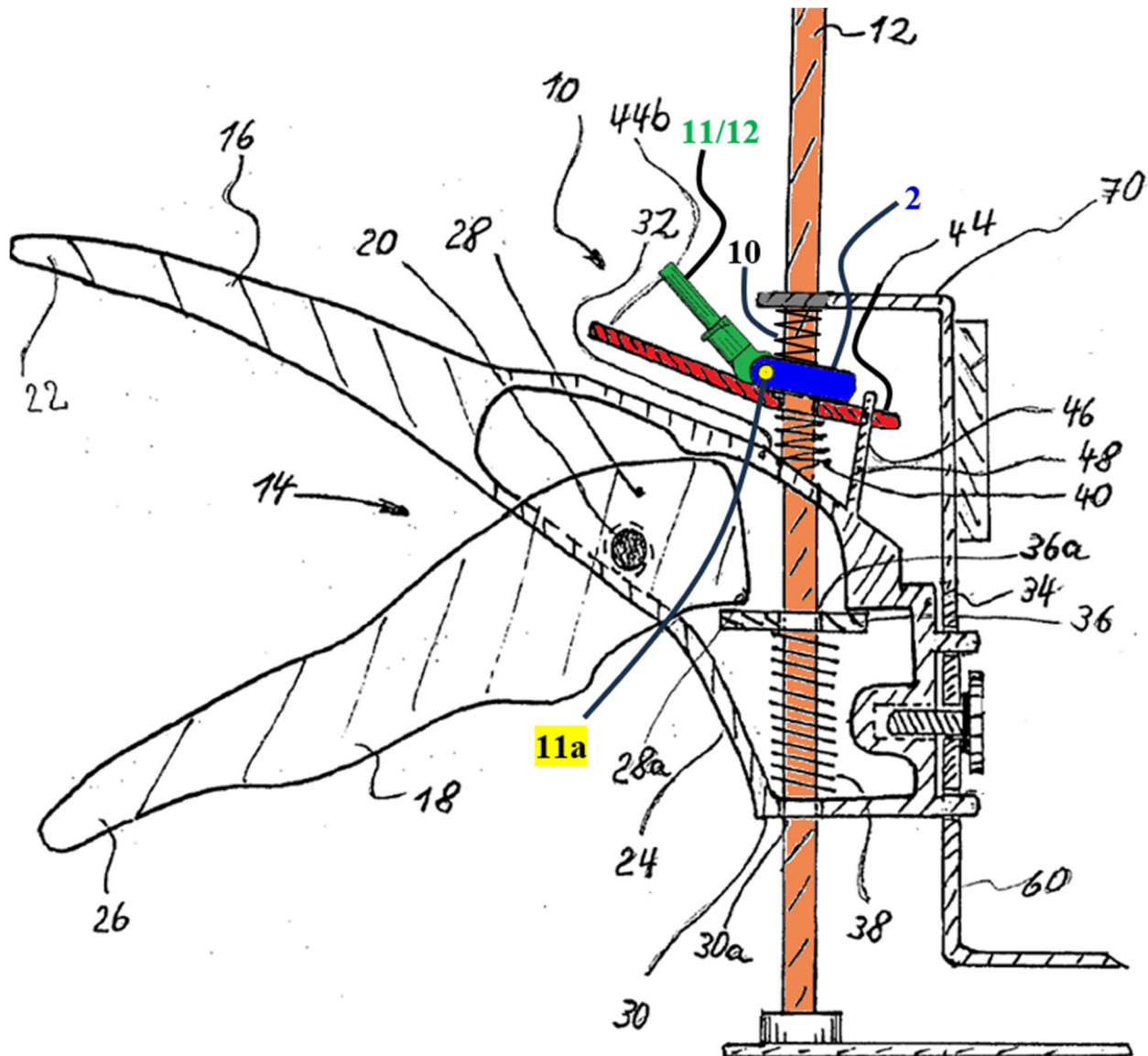
Fourth, such a modification was similarly obvious because it involved the “simple substitution of one known element [(Braselmann’s incremental lowering

mechanism)] for another [(Gruber’s incremental lowering mechanism)]” and therefore involves no “more than the predictable use of prior art elements according to their established functions.” *KSR*, 550 U.S. at 417-18; Ex. 1002, ¶¶92-93.

Fifth, the obvious applicability of Braselmann’s incremental lowering mechanism to other lifting devices such as Gruber’s is explicitly confirmed by Braselmann’s teaching that “each of the elements described above [e.g., Braselmann’s incremental lowering mechanism] ... may also find a useful application in other types of lifting devices differing from the types described above.” Braselmann, 5:44-46; Ex. 1002, ¶94.

3. Obviously Modified Gruber Jack

When Gruber’s jack is obviously modified to incorporate Braselmann’s incremental lowering mechanism, Braselmann’s lowering mechanism (e.g., **lowering plate 2**, **pushing lever 11/12**, **hinge attachment 11a**, and spring 10) would obviously replace Gruber’s incremental lowering mechanism (**lowering plate 50** and spring 54) and interact with Gruber’s **holding plate 44** in the way Braselmann’s lowering mechanism interacted with Braselmann’s own **holding plate 1**, for example as shown below, which will obviously and advantageously provide safer, adjustable, intermittent lowering. Ex. 1002, ¶96.



Exemplary, Non-Limiting Illustration of Obviously Modified Gruber Jack

Ex. 1002, ¶96. As shown above, the **jacking shaft 12** passes through holes in the plates **2, 44, 36** and frame, despite these holes not always being visible in the drawings in this petition because these drawings are amalgamated from a mixture of cross-sectional and side views from Gruber and Braselmann. Ex. 1002, ¶97.

The above illustration is provided to show how Braselmann's actual lowering mechanism could be obviously and physically incorporated into Gruber's

jack. Ex. 1002, ¶98. However, Petitioner’s obviousness ground does not depend on such physical compatibility. *Id.*; see also *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, but rather whether a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention.”) (quotations/citations omitted). Rather, it would have been obvious to have incorporated the teachings of Braselmann and Gruber in a way that meets every limitation in claims 1-3, as explained below. Ex. 1002, ¶98.

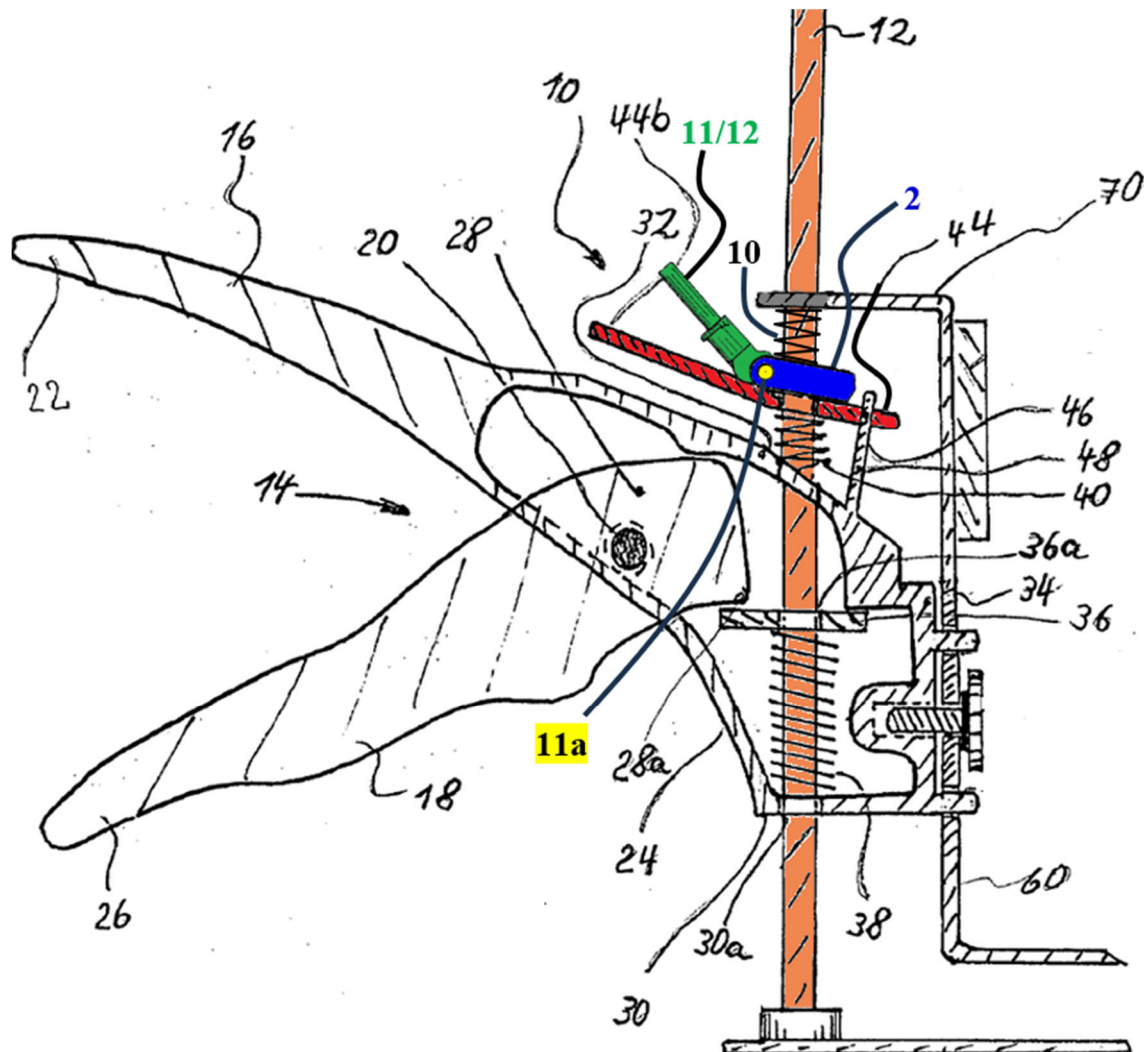
The obviously modified Gruber jack satisfies every limitation in the challenged claims, as shown below. Ex. 1002, ¶¶99-167.

B. Claim 1

1. Limitation 1(a): “1. A lowering mechanism for a hand held jacking tool comprising a jacking frame, a jacking shaft, and a caulking gun jacking mechanism comprising at least one jacking plate biased towards an open state”

As shown below, the obviously modified Gruber jack includes a lowering mechanism (**lowering plate 2**, **pushing lever 11/12**, **hinge attachment 11a**, a spring (e.g., Braselmann’s spring 10, Gruber’s spring 54), **holding plate 44**, and **release lever 44b**)), as explained in greater detail below with respect to the

specific limitations 1(d)-1(k) that make up the claimed lowering mechanism. Ex.
1002, ¶100.



Exemplary, Non-Limiting Illustration of Obviously Modified Gruber Jack

Ex. 1002, ¶96. These components form a lowering mechanism because they enable lowering of Gruber’s jacking frame, as explained above in Section VII.A.3. Ex. 1002, ¶100.

The lowering mechanism is for Gruber's hand held jacking tool ("lifting device 10") comprising Gruber's jacking frame 22/24/30/32/34/48, **jacking shaft**

(“**rod 12**”), and caulking gun jacking mechanism (Gruber’s jacking plate 36 biased by spring 38, **holding plate 44** biased by spring 40, and jacking handle/lever 18/26), which provides a one way jacking system. Ex. 1002, ¶101. If “caulking gun jacking mechanism” is overly narrowly construed to require actuation via squeezing and/or operation via a single hand, Gruber’s jack 10 has a caulking gun jacking mechanism because Gruber’s handle parts 16/22, 18/26 can be held by a single hand and squeezed with a single hand to jack the frame up. Gruber, FIG. 1; Gruber, ¶¶ [0013], [0029]-[0031]; Ex. 1002, ¶¶101-102.

Gruber’s caulking gun jacking mechanism comprises a jacking plate (“lifting disc 36”) biased by a “spring 38.” Gruber, ¶¶ [0012]-[0014], [0015], [0019], [0029] and FIG. 1. Ex. 1002, ¶103. A POSITA would have understood, as is standard to facilitate the functionality of such jacking mechanisms, that Gruber’s jacking plate 36 was or would obviously have been biased by the spring 38 toward the open (i.e., nonengaged) state generally perpendicular to the shaft 12, as shown in Gruber’s FIG. 1, until actuation of the handle 26 tilts the plate 36 so it engages the **shaft 12**. Gruber, ¶ [0014] (“lifting disc 36, which is preloaded in the direction of the second wall part 32 by means of a first compression spring 38”), ¶ [0015]; Braselmann, 3:58-62 (“The clamping member [i.e., jacking plate] 3 may have a tendency normally to occupy its unclamping position, but may be constantly urged thereinto by the coil spring 10...”); Ex. 1002, ¶103.

As a result, the obviously modified Gruber jack provides “[a] lowering mechanism [Brasemann’s **lowering plate 2**, **pushing lever 11/12**, and **hinge attachment 11a**, a spring (e.g., Brasemann’s spring 10, Gruber’s spring 54), Gruber’s **holding plate 44** and **release lever 44b**), and the components identified below as satisfying limitations 1(d)-1(k)] for [Gruber’s] hand held jacking tool [10] comprising [Gruber’s] jacking frame [22/24/30/32/34/48], [Gruber’s] **jacking shaft [12]**, and [Gruber’s] caulking gun jacking mechanism [Gruber’s jacking plate 36 biased by spring 38, **holding plate 44** biased by spring 40, and jacking handle/lever 18/26] comprising at least one jacking plate [36] biased towards an open state,” as recited in limitation 1(a). Ex. 1002, ¶¶100-104.

2. Limitation 1(b): “and at least one holding plate, above the at least one jacking plate”

In the obviously modified Gruber jack, the jacking mechanism includes “[Gruber’s] at least one holding plate [Gruber’s ‘**lowering plate 44**’], above [Gruber’s] at least one jacking plate [36],” as recited in limitation 1(b). Gruber, ¶ [0017] & FIG. 1; Ex. 1002, ¶¶105-106. Gruber’s “**lowering plate 44**” is a **holding plate 44** because it holds up Gruber’s jacking frame when not released. Gruber, ¶ [0030] (“[T]he inclined position of the first **lowering plate 44** prevents the tongs 14 from being lowered[.]”); Ex. 1002, ¶105.

3. Limitation 1(c): “being biased towards a gripping state”

In the obviously modified Gruber jack, Gruber’s **holding plate 44** is “biased towards a gripping state,” as recited in limitation 1(c), by a spring 40. Gruber, FIG. 1; Gruber, ¶[0017] (“The second compression spring 40 presses against a first **lowering plate 44**....”); Gruber, ¶[0018] (“[B]y an inclined position of the first **lowering plate 44**, set up by a corresponding articulation of the first **lowering plate 44** on the first pivot bearing 46 and by an angular position of the first **lowering plate 44**, a tilting of the first **lowering plate 44** in relation to the rod 12 is present in the starting position.”); Gruber, ¶[0030] (“[T]he inclined position of the first **lowering plate 44** prevents the tongs 14 from being lowered in the downward direction[.]”); Ex. 1002, ¶¶107-108.

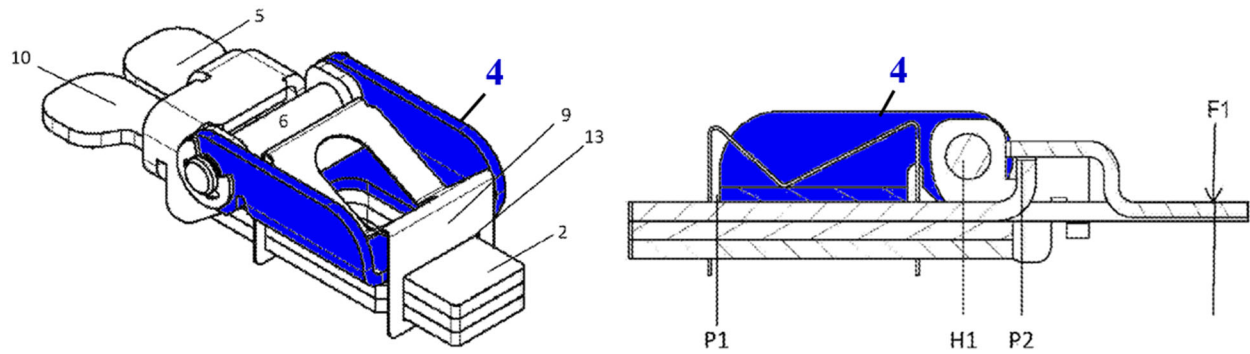
4. Limitation 1(d): “wherein the lowering mechanism comprises: a lowering plate on top of the at least one holding plate”

The obviously modified Gruber jack’s “lowering mechanism comprises: a **lowering plate** [Brasermann’s ‘**clamping member 2**’ (Brasermann, 3:31)] on top of [Gruber’s] at least one **holding plate [44]**,” as recited in limitation 1(d). In particular, Braserman’s **lowering plate 2** would have obviously been positioned relative to Gruber’s **holding plate 44** in the same way as Brasermann’s **lowering plate 2** was positioned relative to Brasermann’s **holding plate 1**, i.e., on top, to function in the manner taught by Brasermann to facilitate controlled, adjustable

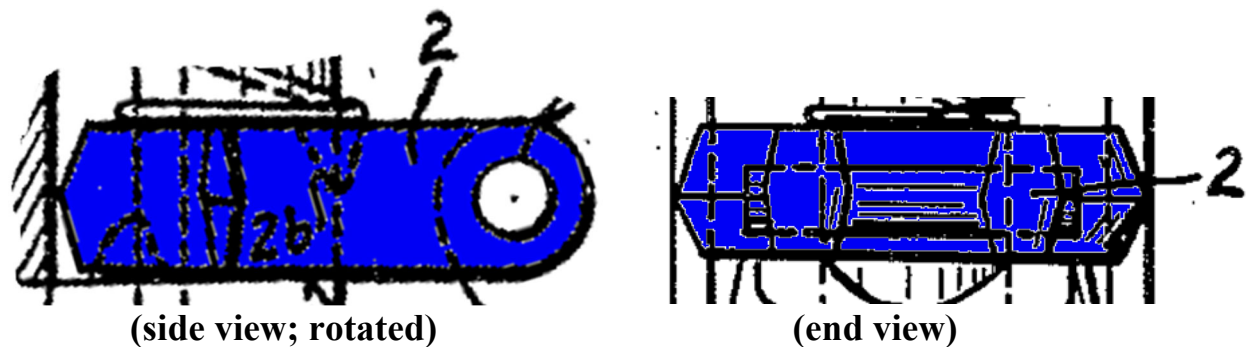
lowering. Braselmann, FIG. 1, 4:3-4:64; Ex. 1002, ¶¶109-113; *cf.* Gruber, FIG. 1 (showing Gruber's **lowering plate 50** on top of Gruber's **holding plate 44**).

In the context of the '473 Patent, a POSITA would have understood that Braselmann's "**clamping member 2**" (Braselmann, 3:31) was a "plate," as recited in claim 1 of the '473 Patent, because Braselmann's **clamping member 2** has the structure and functionality of a caulking gun jacking mechanism's plate (e.g., a structure with a hole through which the jacking shaft extends such that the structure is pivotable between a gripping state (tilted relative to the jacking shaft to bind against the shaft) and an open state (generally perpendicular to the jacking shaft so that the structure can slide up/down the jacking shaft)). Ex. 1002, ¶110; Ex. 1001, 1:15-31.

The '473 Patent's specification does not define or limit the term "plate" with respect to any particular dimensions, thickness ratios, or aspect proportions, nor require any specific edge geometry (e.g., square or rounded). Ex. 1002, ¶111. As shown below, the '473 Patent's own disclosed "**lowering plate 4**" (2:52) has a deep U-shape, making it non-flat, quite thick relative to its width and length, and far less plate-like than Braselmann's **lowering plate 2**, which is substantially thinner than it is wide or long. Ex. 1002, ¶111.



'473 Patent, FIGS. 4-5 (annotated)



Braselmann, FIGS. 1-2 (excerpt)

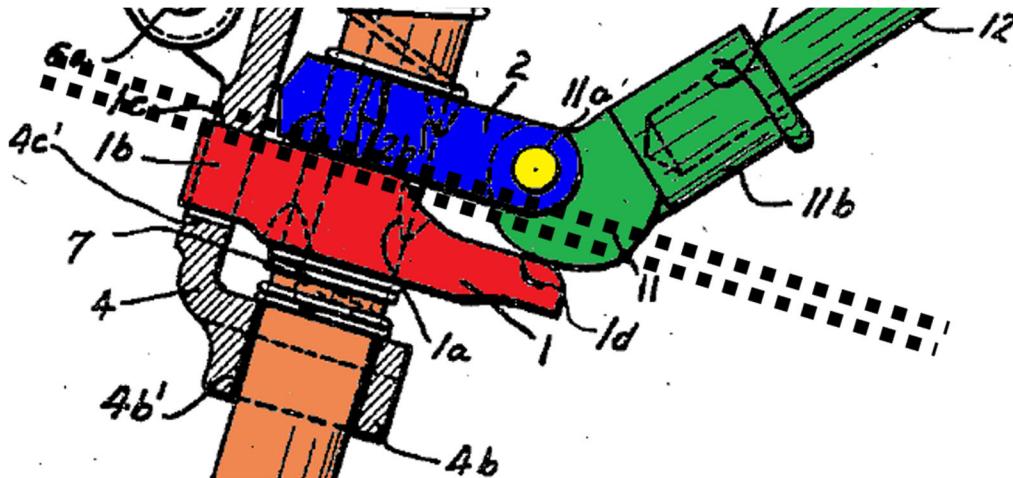
If the '473 Patent's disclosed **lowering plate 4** is a "plate," Braselmann's **clamping member 2** is, too. Ex. 1002, ¶111.

Moreover, even if Braselmann's "**clamping member 2**" was not a plate, it would have been obvious to have incorporated Braselmann's **clamping member 2** into Gruber's jack in "plate" form because Gruber taught that it was known to implement such lowering members (e.g., Gruber's "**lowering plate 50**") in plate form, e.g., to provide efficient, easy-to-manufacture, compact clamping/lowering members. Gruber, FIG. 1 and ¶ [0019] ("lowering[/holding] plate 44" and "lowering plate 50"); Ex. 1002, ¶112.

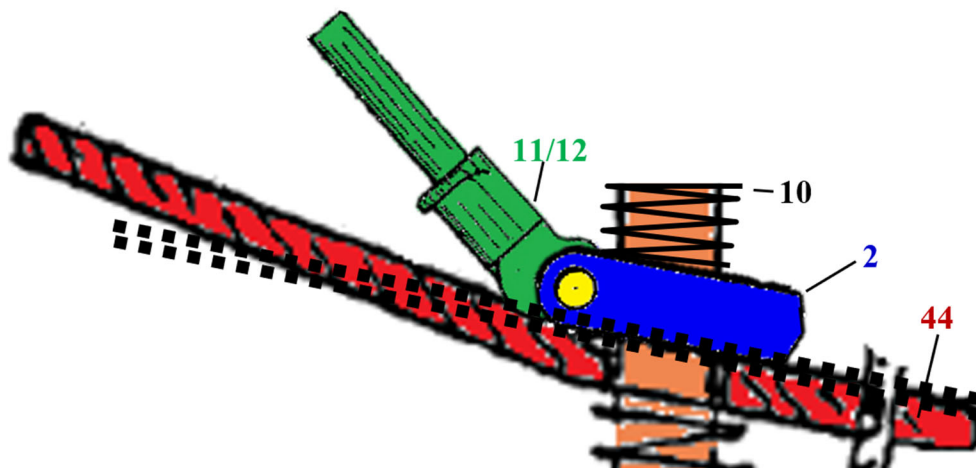
5. Limitation 1(e): lowering plate “being parallel to the at least one holding plate when not activated”

As explained below in Section VII.B.6., the obviously modified Gruber jack’s **lowering plate 2** is spring-biased toward and against Gruber’s **holding plate 44**. This spring bias causes Braselmann’s **lowering plate 2** and **holding plate 1** to be parallel when the **lowering plate 2** is not activated, so the same would remain true in the obviously modified Gruber jack, as shown below.

Braselmann, FIG. 1 and 4:50-55; Ex. 1002, ¶114.



Braselmann, FIG. 1 (excerpt; annotated)



Obviously Modified Gruber Jack

Ex. 1002, ¶114.

Such parallelism is the obvious and intended result of biasing Braselmann's **lowering plate 2** toward and against Braselmann's **holding plate 1**, as would obviously occur to maintain the functionality of Braselmann's spring-biased **lowering plate 2**. Braselmann, FIG. 1; Ex. 1002, ¶115.

Furthermore, this parallelism ensures that the **lowering plate 2** does not inadvertently lock while jacking up the load. Ex. 1002, ¶116. Parallelism guarantees that the **lowering plate 2** is in a known orientation. *Id.* That would not be the case if the **lowering plate 2** were somehow floating above the **holding plate 1**. *Id.* Alternatively, clockwise rotation of the **lowering plate 2** in the released condition could be limited by the fit of the **shaft** in the **lowering plate 2's** hole, but that would increase friction and raise the risk of the **lowering plate 2** accidentally rotating the **holding plate 1** into the released direction, resulting in the unintended dropping of the jack. *Id.* Parallel contact helps prevent the **holding plate 1** from accidentally being rotated by the **lowering plate 2**. *Id.* In view of these benefits of such parallelism, it would obviously have been maintained/applied this parallelism in the obviously modified Gruber jack, for example as shown below. *Id.*

As a result, in the obviously modified Gruber jack, the **lowering plate 2** is “parallel to [Gruber's] at least one **holding plate [44]** when not activated,” as recited in limitation 1(d). *Id.*, ¶117.

6. Limitation 1(f): “a spring biasing the lowering plate towards the at least one holding plate”

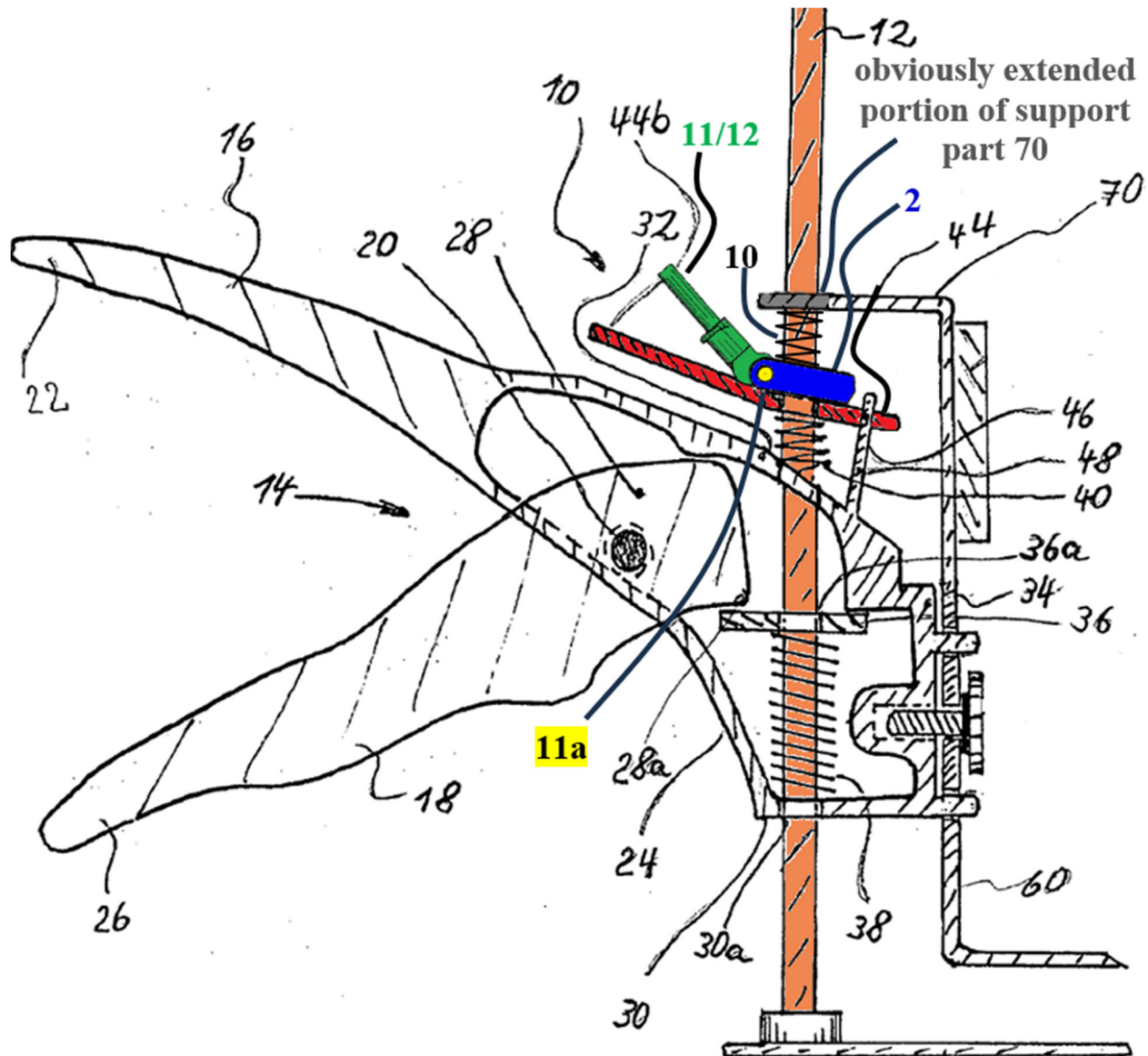
Brasemann’s spring 10 biases Brasemann’s **lowering plate 2** towards Brasemann’s **holding plate 1** so that Brasemann’s lowering mechanism functions correctly (e.g., ensuring the intended functionality of Brasemann’s adjustable lowering mechanism, returning the **lowering plate 2** to its natural/neutral position abutting the **holding plate 1** when the **pushing lever 11/12** is not activated, causing the **lowering plate 2** to engage the **shaft 5** when the rear end of the **lowering plate 2** is lifted upwardly by the pressing of the **pushing lever 11/12**).

Brasemann, FIG. 1 and 4:50-55 (“The **clamping member[/lowering plate] 2** ... will move downwardly under the influence of ... the spring 10 into abutting relationship with the **clamping member[/holding plate] 1** so that the parts will .. assume the position illustrated in Fig. 1.”); Ex. 1002, ¶118. In the obviously modified Gruber jack, Brasemann’s **lowering plate 2** would obviously have been biased by a spring towards Gruber’s **holding plate 44** for the same reason(s): ensuring the intended functionality for the lowering mechanism, returning Brasemann’s **lowering plate 2** to its natural/neutral position abutting Gruber’s **holding plate 44** when the **pushing lever 11/12** is not activated, ensuring that the **lowering plate 2** engages the **shaft 12** when the **pushing lever 11/12** is pushed, etc.. Brasemann, FIG. 1; Ex. 1002, ¶118.

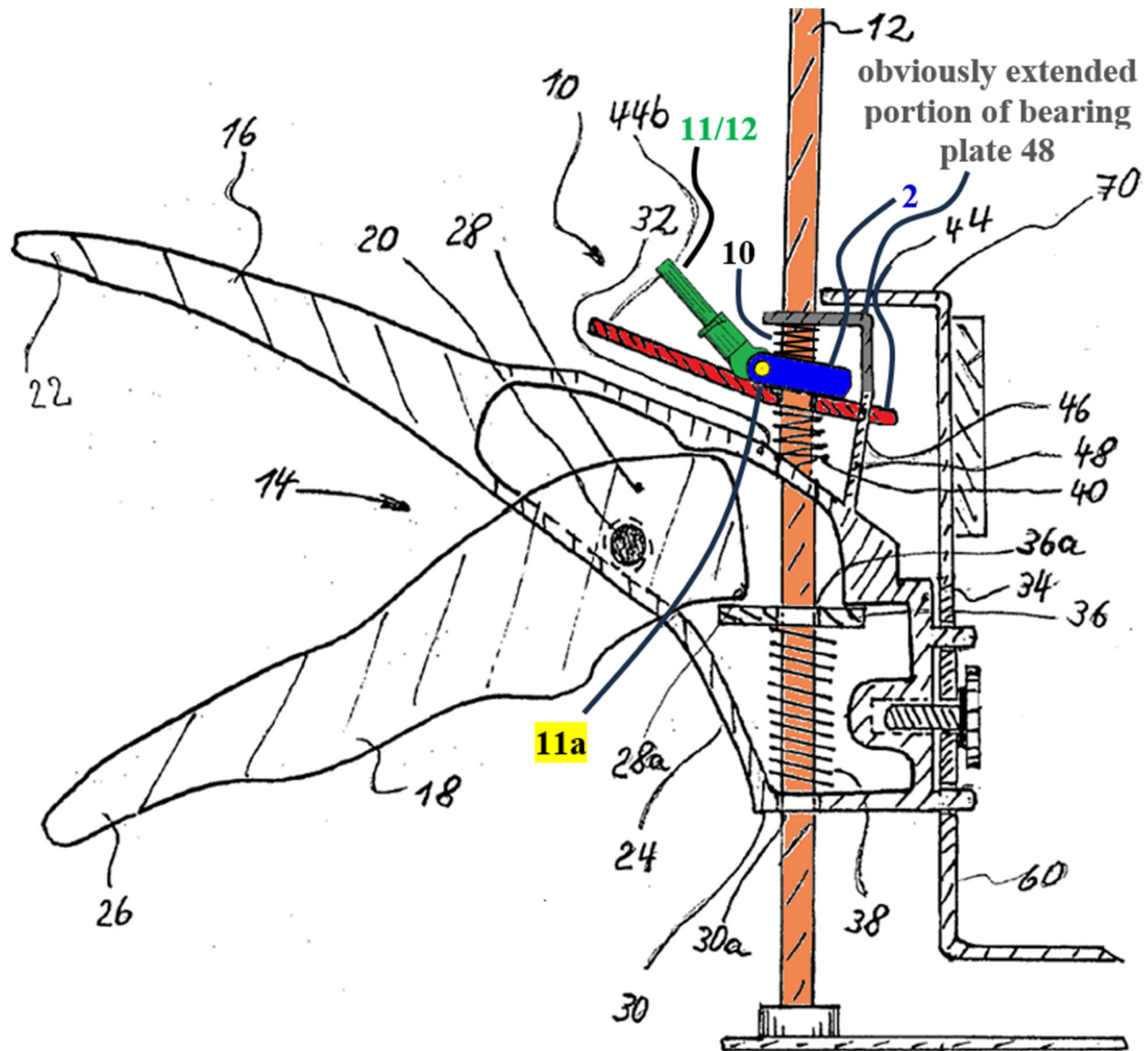
In the obviously modified Gruber jack, it would have been obvious to implement the biasing spring in numerous ways. Ex. 1002, ¶119.

For example, Braselmann taught that the **lowering plate 2** is biased by a compression spring 10 that extends, on a force transfer basis, between the **lowering plate 2** and the frame 4. Braselmann, FIG. 1, 3:42-45, 4:50-55; Ex. 1002, ¶120. In view of Braselmann's teaching, it would have been obvious to have positioned the spring (e.g., like compression spring 10) between the **lowering plate 2** and a portion of Gruber's frame to achieve the intended spring bias. Ex. 1002, ¶120.

It would have been obvious to have arranged a portion of Gruber's frame or an extension thereof above the lowering plate 2 so that the spring 10 is compressed therebetween and the spring's force appropriately transfers from the frame to the lowering plate 2, as taught by Braselmann. Ex. 1002, ¶121; Braselmann, FIG. 1. For example, as shown in gray below, it would have been obvious to have extended Gruber's support part 70 above the **lowering plate 2** to support Braselmann's spring 10. Ex. 1002, ¶121.



Id. Alternatively, as shown in gray below, it would have been obvious to have extended Gruber's bearing plate 48, which is part of Gruber's jacking frame, above the **lowering plate 2** to support Braselmann's spring 10. *Id.*, ¶122.

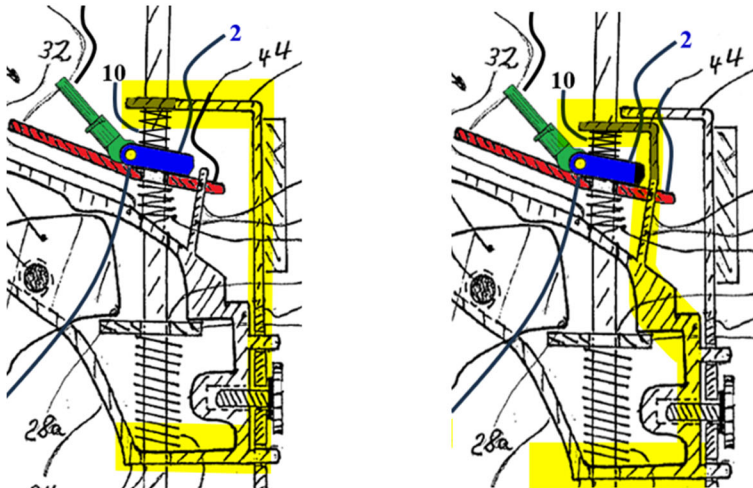


Obviously Modified Gruber Jack

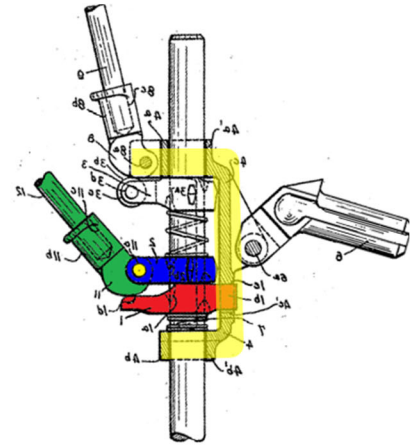
Id.

Indeed, as highlighted in yellow below, the backward “C” shape of the resulting portions of Gruber’s frame would have been obvious in view of the comparable C shape of Braselmann’s frame 4 for this same purpose (i.e., providing a support for an end of a compression spring 10 that biases the **lowering plate 2**

toward the **holding plate 1**), as well as other purposes (e.g., guiding the **jacking shaft**). Ex. 1002, ¶123.



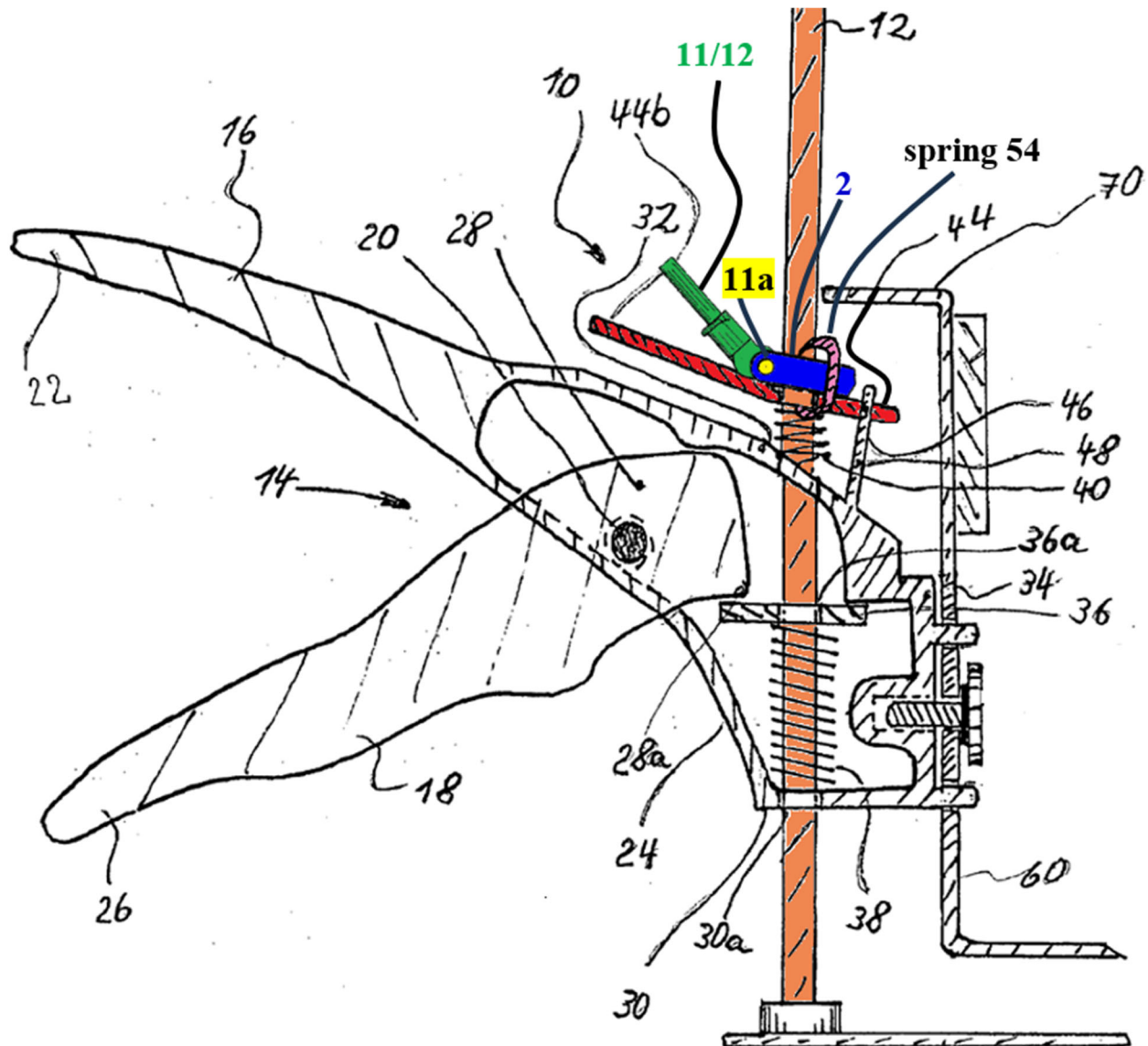
Obviously Modified Gruber Jack Variants



**Braselmann, FIG. 1
(excerpt; mirrored; rotated)**

Alternatively, as shown below, it would have been obvious to have extended one or more tensile springs like Gruber's spring 54 between the plates **2**, **44** to bias Braselmann's **lowering plate 2** toward Gruber's **holding plate 44**. Gruber, FIG. 1 and ¶ [0023] ("**lowering plate 50** ... connected to ... **lowering plate 44** ... via a return spring 54."); Ex. 1002, ¶ 124. In this obvious variant, the tensile force axis of the spring(s) 54 would obviously have been aligned with Gruber's **shaft 12** (as was the case with Braselmann's spring 10) to bias the holding plate 2 toward its neutral position abutting the **holding plate 1**, as taught by Braselmann.

Braselmann, FIG. 1 and 4:50-55; Ex. 1002, ¶124.



Obviously Modified Gruber Jack

Ex. 1002, ¶124.

In these obvious variants, the obviously modified Gruber jack's lowering mechanism included "a spring [e.g., Braselmann's compression spring 10, tensile spring(s) like Gruber's spring 54] biasing [Braselmann's] **lowering plate [2]** towards [Gruber's] at least one **holding plate [44]**," as recited in limitation 1(f).

Ex. 1002, ¶¶125-126.

7. Limitation 1(g): “a thumb operable pushing lever”

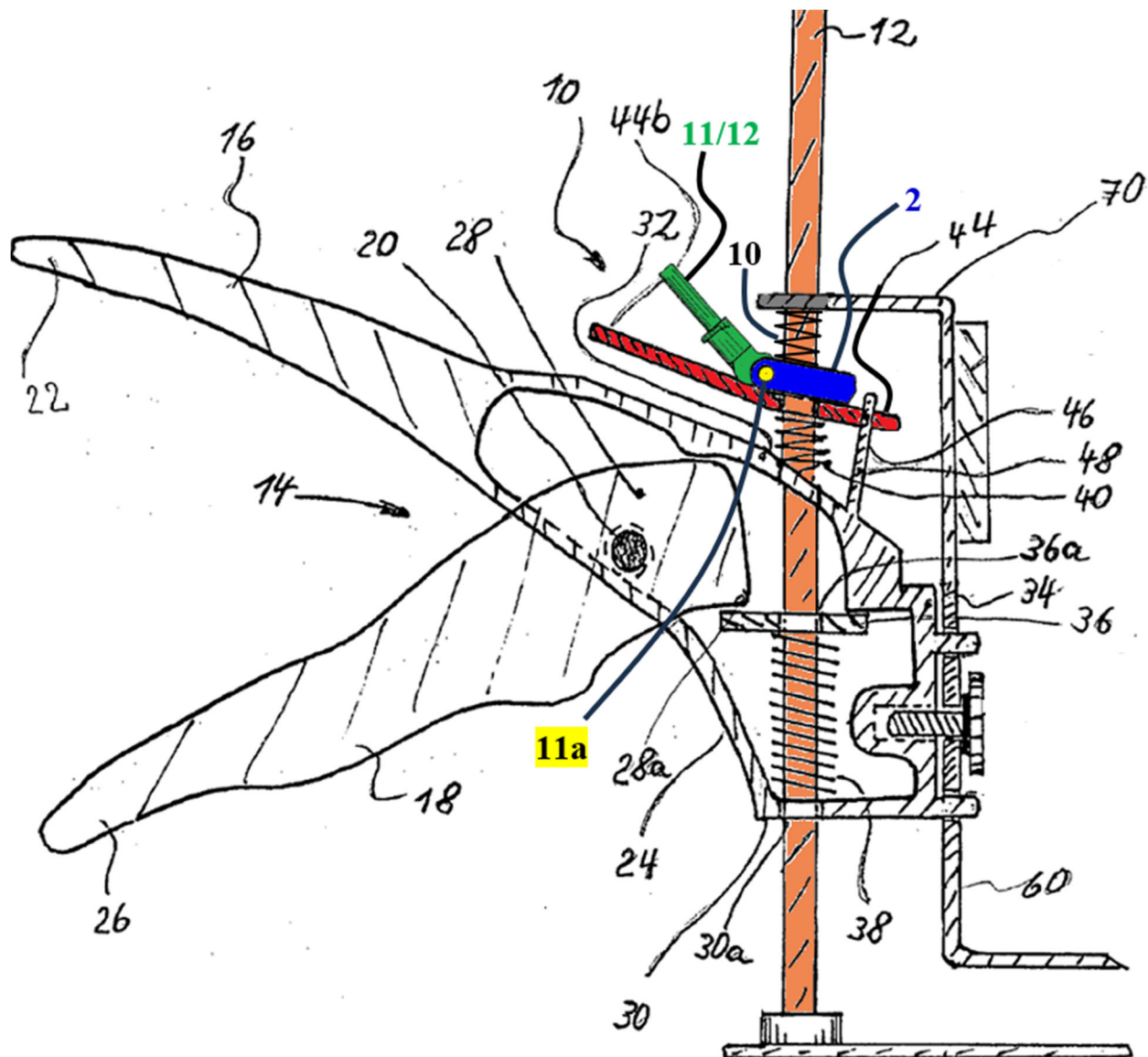
The obviously modified Gruber jack incorporates Braselmann’s **pushing lever 11/12**, which was obviously “thumb operable” (to the extent that “thumb operable” is not indefinite⁴). Ex. 1002, ¶127. The **pushing lever 11/12** in Braselmann as well as in the obviously modified Gruber jack are “thumb operable” because they are capable of being operated by the operator’s thumb. *Id.*, ¶128.

Moreover, in the obviously modified Gruber jack, it would have been obvious to have sized and shaped Braselmann’s **pushing lever 11/12** to be “thumb operable” to make the lever 11/12 more convenient to operate, for example as illustrated above. Ex. 1002, ¶129. Braselmann’s **pushing lever 11/12** has a length appropriate for the load and lifting/lowering stroke/speed to which Braselmann’s jack is directed. Braselmann, FIG. 1; Ex. 1002, 129. Likewise, Gruber’s release lever 44b and pushing lever 50b have leverage arm lengths that are appropriate for the load and intended stroke length/speed to which Gruber’s jack 10 is directed. Gruber, FIG. 1; Ex. 1002, ¶129. A POSITA would have understood that Gruber’s **release lever 44b** and incremental lowering/pushing lever 50b were sized and located to be operated by the operator’s thumb. Gruber, FIG. 1; Gruber, ¶ [0018] (“**lowering plate 44** is extended and forms a first lowering actuation region 44b”);

⁴ “[T]humb operable” is indefinite, but Petitioner cannot raise indefiniteness here, so Petitioner does its best to apply this phrase despite its indefiniteness.

Gruber, ¶ [0019] (“second **lowering plate 50** is extended and forms a second lowering operating area 50b”); Gruber, ¶¶[0020]-[0021]; Ex. 1002, ¶129. When Braselmann’s **lowering plate 2** and **pushing lever 11/12** are obviously incorporated into Gruber, it would have been obvious to size and position Braselmann’s **pushing lever 11/12** similarly to Gruber’s pushing lever 50b, in view of Gruber’s teachings and the loads to which Gruber’s jack is directed, with the resulting **pushing lever 11/12** being thumb operable to be more convenient for the operator.⁵ Ex. 1002, ¶129.

⁵ Such “thumb operable” appropriate sizing and positioning of the **pushing lever 11/12** must have been within the skill of a POSITA, or else claim 1 was non-enabled in view of the ’473 Patent’s failure to provide such dimensions. Ex. 1001, 3:26-28 (admitting that the pertinent dimensions and relationships “are hard to calculate and have to be tested and tried”). *See In re Paulsen*, 30 F.3d 1475, 1481 n.9 (Fed. Cir. 1994) (“[U]nder the enablement standard that [patentee] would have us apply to [the reference], the... [patentee’s] patent itself would be nonenabling.”); *Motorola, Inc. v. Interdigital Tech. Corp.*, 121 F.3d 1461, 1471 (Fed. Cir. 1997) (affirming enablement of reference with “a level of detail similar to ... the patent”).



Obviously Modified Gruber Jack

Ex. 1002, ¶129.

As shown above, it would have been obvious to have the **release lever 44b** extend rearwardly farther than the **pushing lever 11/12** to provide convenient thumb access to both the continuous-lowering **release lever 44b** and incremental-lowering **pushing lever 11/12** (with the **pushing lever 11/12** sized and positioned similarly to Gruber's incremental release lever 50b), as shown in Gruber's FIG. 1

and described in ¶[0021] of Gruber. Ex. 1002, ¶130. Such an arrangement would obviously result in convenient thumb operation of both levers 11/12, 44b, as shown in FIG. 1 of Gruber with respect to the analogous levers 50b, 44b. Ex. 1002, ¶130.

Alternatively, it also would have been obvious to have the incremental **pushing lever 11/12** extend rearwardly to the same extent as the continuous **release lever 44b** because Gruber taught that such an alternative arrangement would result in the incremental **pushing lever 11/12** extending over top of the continuous **release lever 44b** to discourage “accidental[] activat[ion]” of Gruber’s continuous **release lever 44b**, as taught in ¶[0020] of Gruber. Ex. 1002, ¶130. Regardless of whether the **release lever 44b** extends rearwardly to the same extent as or more than the **pushing lever 11/12** (both variations being obvious), the resulting **pushing lever 11/12** and **release lever 44b** are conveniently reached by the operator’s thumb for thumb operation of the desired lever **11/12, 44b**. Gruber, ¶¶[0020]-[0021]; Ex. 1002, ¶130.

Brasermann taught that “[i]f desired,” the lever 12 lever may be removably attached to the lever 11, e.g., to facilitate using the lever 12 as a lifting lever in connection with Brasermann’s jacking cam 8. Brasermann, 4:65-68, 5:32-36. When Brasermann’s lowering mechanism is obviously incorporated into Gruber’s jack, the **pushing lever** would obviously have been small enough to be conveniently actuated by the operator’s thumb, so the lever 12 would have obviously been (1)

omitted altogether by dimensioning the lever 11 to have an appropriate length for convenient thumb actuation, or (2) rigidly mounted to the lever 11 with the same effect. Ex. 1002, ¶131.

In conclusion, the obviously modified Gruber jack's lowering mechanism includes "a thumb operable **pushing lever [11/12]**," as recited in limitation 1(g). *Id.*, ¶¶127-132.

8. Limitation 1(h): "a release lever which is an extension of the at least one holding plate"

The obviously modified Gruber jack's lowering mechanism includes "a release lever [Gruber's '**lowering operating area 44b**'] which is an extension of the at least one **holding plate** [Gruber's '**lowering plate 44**']," as recited in limitation 1(h). Gruber, FIG. 1; Gruber, ¶ [0018] ("[T]he first **lowering plate 44** is extended and forms a first lowering **operating area 44b**"); Ex. 1002, ¶133-134.

9. Limitation 1(i): "a hinge attachment connecting the thumb operable pushing lever to the lowering plate at a rear end towards an operating handle"

The obviously modified Gruber jack's lowering mechanism includes "[Brasemann's] **hinge attachment [11a]** connecting [Brasemann's] thumb operable **pushing lever [11/12]** to [Brasemann's] **lowering plate [2]** at a rear end [to the left as shown below] towards an operating handle [Gruber's 'handle part 26']," as recited in limitation 1(i), because this arrangement facilitates the functionality and benefits of Brasemann's lowering mechanism (e.g., causing the

Ex. 1002, ¶135.

10. Limitation 1(j): “a pivot structure connected to the thumb operable pushing lever or the at least one holding plate a distance backward from the hinge attachment”

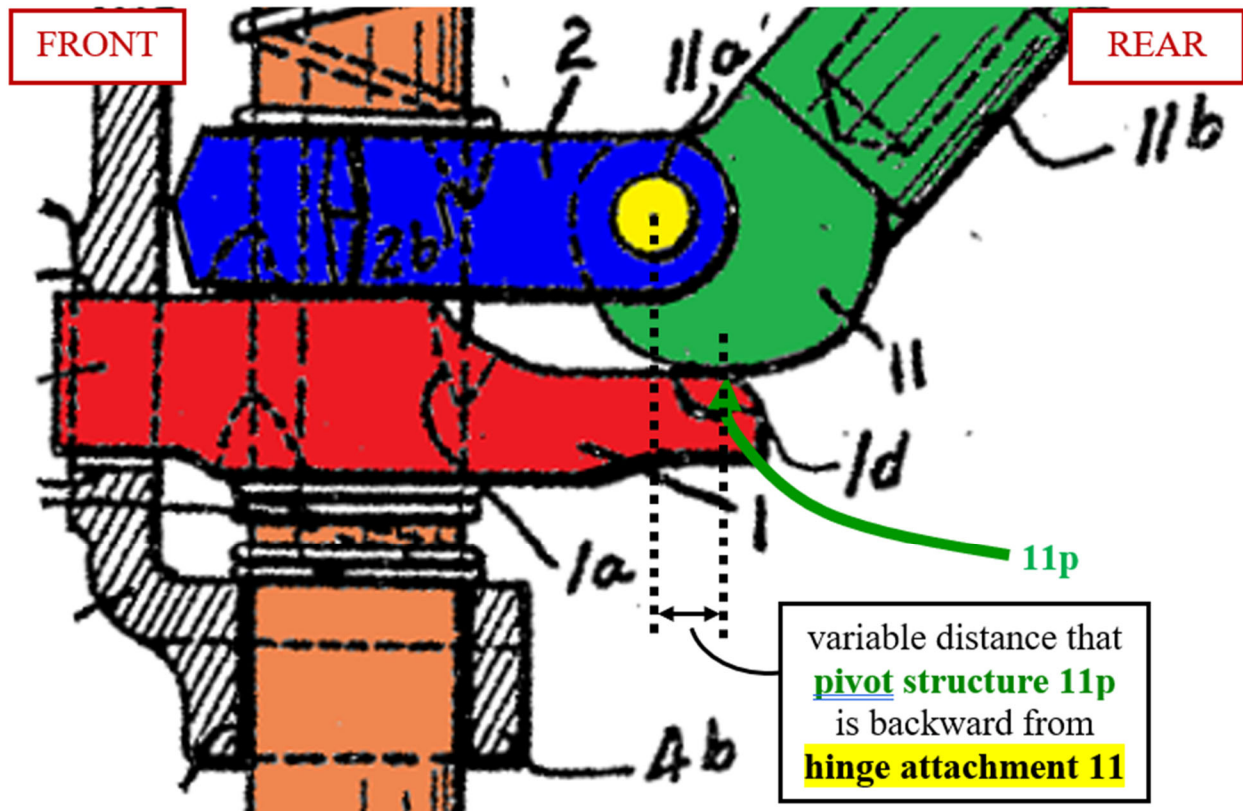
The parties dispute whether the claimed “pivot structure” encompasses a **cam 11** like in Braselmann (Patent Owner’s construction) or must have a fixed pivot point (Petitioner’s Construction). *See* Section VI.A, above. As explained below, the obviously modified Gruber tool’s lowering mechanism satisfies this limitation under either construction. Ex. 1002, ¶¶137-147.

a. Obviousness Under Patent Owner’s Construction Of “Pivot Structure” As Encompassing A Sliding Cam

If the claimed “pivot structure,” which the pushing lever “pivots about,” encompasses a sliding cam like Braselmann’s (*see* Section VI.A.2, above), then in the obviously modified Gruber jack, the **cam portion 11p** of Braselmann’s **lever 11** that slidably contacts Gruber’s holding plate 1 is a **pivot structure 11p** that satisfies this limitation. Ex. 1002, ¶138.

As shown below, Braselmann’s **pivot structure 11p** is positioned backward (to the right as shown in Braselmann’s FIG. 1) from Braselmann’s **hinge attachment 11a** so that the lowering mechanism functions correctly (i.e., so the pushing the **pushing lever 11/12** downward causes the **pivot structure 11p** to push downward on the **lowering plate 1**). Ex. 1002, ¶139. Braselmann’s lowering mechanism would not work if the **pivot structure 11p** was forward of **hinge attachment 11a** because the pressing the **lever 11/12** would lift the **pivot**

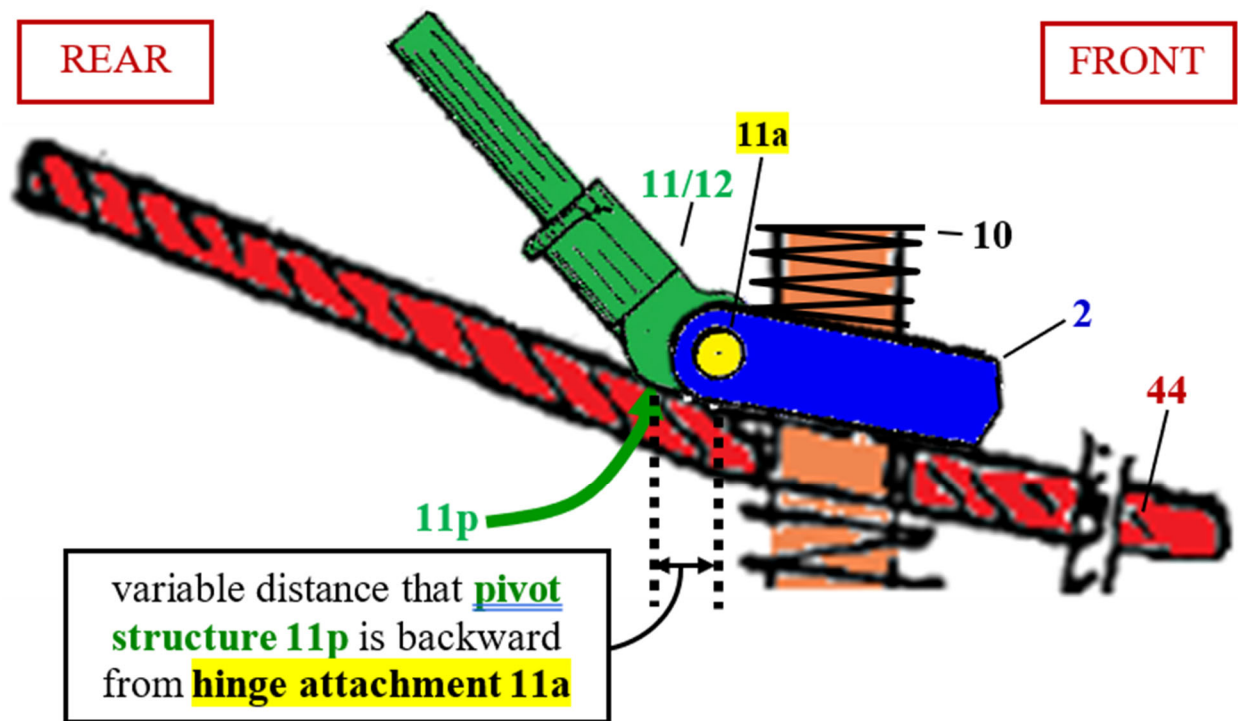
structure 11p up away from the **holding plate 1**, and thus fail to push the **holding plate 1** downward, as required to lower the jack. *Id.*



Brasemann, FIG. 1 (excerpt; rotated so shaft 5 is vertical; annotated)

Id.

As shown below, just as in Brasemann, the obviously modified Gruber jack's **pivot structure 11p** (cam portion of lever 11 slidably contacting the holding plate 1) would likewise have obviously been positioned backward (to the left as shown in Gruber FIG. 1) from the **hinge attachment 11a** so that the lowering mechanism functions correctly, as taught by Brasemann. Ex. 1002, ¶140.



Obviously Modified Gruber Jack (excerpt)

Id.

As a result, the obviously modified Gruber jack's lowering mechanism includes "a **pivot structure [cam portion 11p]** connected to the thumb operable **pushing lever [11/12]** ... a distance backward from the **hinge attachment [11a]**," as recited in this limitation under Patent Owner's construction. Ex. 1002, ¶141.

b. Obviousness Under Petitioner's Construction Of "Pivot Structure" As Meaning "A Structure Having A Fixed Pivot Point About Which The Pushing Lever Pivots"

If "pivot structure" is correctly construed to mean "a structure having a fixed pivot point around which the pushing lever pivots" (see Section VI.A.1, above), it would have been obvious to further modify Gruber's jack in a way that satisfies this limitation. Ex. 1002, ¶142.

Braselmann uses the **cam 11** to steadily convert the large angular stroke of Braselmann's **lever 11/12** into downward movement of Braselmann's **holding plate 1** and frame 4 throughout the lever's pivotal stroke. Braselmann, FIG. 1 and 4:4-46; Ex. 1002, ¶143. If the **lever 11/12** utilized a fixed pivot point instead of the **cam 11**, the extent of downward movement of the **holding plate 1** and frame 4 per degree of **lever 11/12** actuation would significantly vary over the lever's angular stroke as the contact point between the **cam 11** and the **holding plate 1** moves horizontally forward (toward the **shaft 5**). Ex. 1002, ¶143. The **cam 11** is beneficial to Braselmann's jack given Braselmann's **lever 11/12**'s large angular stroke. *Id.*

In the modified Gruber jack, however, the angular stroke of the thumb operable **pushing lever 11/12** would obviously be much smaller (e.g., as was the case for Gruber's own pushing lever 50b). Ex. 1002, ¶144; Gruber, FIG. 1. It would therefore have been obvious to have replaced Braselmann's **cam 11** surface with a **pivot structure 11p** having a fixed pivot point in contact with Gruber's **holding plate 44** because there was no need for a cam in connection with the smaller lever stroke. Ex. 1002, ¶144. The **fixed pivot point 11p** of the lever 11 would obviously have been positioned backward (to the left as shown in Gruber's FIG. 1) from the **hinge attachment 11a**, so that the lowering mechanism functions correctly (e.g., so that pushing the **lever 11** pushes the **pivot point 11p** and

contacting **holding plate 22** downwardly), as analogously explained above in Section VII.B.10.a with respect to the relative positioning of the **cam 11p**. Ex. 1002, ¶144.

In the context of the obviously modified Gruber tool, it would have alternatively been obvious to have formed the **pivot structure** with a **fixed pivot point** on the **holding plate 44** instead of the **lever 11/12** because an upwardly extending **pivot structure** and **fixed pivot point** on the **holding plate 44** would have been understood as being an obvious alternative to a downwardly extending **pivot structure 11p** and **fixed pivot point** on the **pushing lever 11/12**. Ex. 1002, ¶145.

As a result, under Petitioner’s construction of “pivot structure,” the obviously modified Gruber jack’s lowering mechanism includes a pivot structure (i.e., a portion of the **pushing lever 11/12** defining a **pivot structure 11p** having a fixed pivot point, or an upwardly extending portion of the **holding plate 44** having a **fixed pivot point**) connected to the thumb operable **pushing lever 11/12** or the **holding plate 44** (e.g., via integral formation) a distance backward (to the left as shown in Gruber’s FIG. 1) from the **hinge attachment 11a**, as recited in limitation 1(j). Ex. 1002, ¶146.

In sum, regardless of how “pivot structure” is construed, the obviously modified Gruber jack’s lowering mechanism includes “a pivot structure [e.g.,

Brasemann's **cam 11p**, a fixed pivot point pivot structure replacing cam 11p, or a fixed pivot point **pivot structure** formed on the **holding plate 44**, depending on how 'pivot structure' is construed] connected to [Brasemann's] thumb operable **pushing lever [11/12]** or [Gruber's] at least one **holding plate [44]** a distance backward from [Brasemann's] **hinge attachment [11a]**," as recited in limitation 1(j). Ex. 1002, ¶147. As a result, the Board can and should find limitation 1(j) obvious without having to resolve the parties' claim construction dispute.

11.Limitation 1(k): "wherein the lowering plate is lifted up and grips the jacking shaft when the thumb operable pushing lever is pushed downwards and pivots around the pivot structure and in turn, pushes the at least one holding plate downwards loosening the at least one holding plate from the jacking shaft and moving the jacking frame down along the jacking shaft a distance until the at least one holding plate reaches an angle that stops the at least one holding plate against the jacking shaft while the lowering plate still grips the jacking shaft"

In the obviously modified Gruber jack, the incremental lowering mechanism works in the way disclosed in Brasemann. Ex. 1002, ¶148; Brasemann, FIG. 1 and 4:3-64. As a result, in the obviously modified Gruber jack, "[Brasemann's] **lowering plate [2]** is lifted up and grips [Gruber's] **jacking shaft [12]** when [Brasemann's] thumb operable **pushing lever [11/12]** is pushed downwards and pivots around the pivot structure [e.g., cam **11p** or fixed pivot structure, as explained above regarding limitation 1(j)] and in turn, pushes [Gruber's] at least one **holding plate [44]** downwards loosening [Gruber's] at least one **holding plate [44]** from [Gruber's] **jacking shaft [12]** and moving [Gruber's] jacking frame

[22/24/30/32/34/48] down along [Gruber's] **jacking shaft [12]** a distance until [Gruber's] at least one **holding plate [44]** reaches an angle that stops [Gruber's] at least one **holding plate [44]** against [Gruber's] **jacking shaft [12]** while [Braselmann's] **lowering plate [2]** still grips [Gruber's] **jacking shaft [12]**,” as recited in limitation 1(k). Ex. 1002, ¶¶148-149; Braselmann, FIG. 1 and 4:3-64; Section VII.D, below (illustrating this sequence); Ex. 1002, ¶165 (same).

Gruber's jack, as obviously modified in view of Braselmann, therefore satisfies every limitation in claim 1. Ex. 1002, ¶¶100-150.

C. Claim 2

Challenged claim 2 recites:

2. The lowering mechanism according to claim 1, wherein the rear end of the thumb operable pushing lever and the release lever are positioned beside each other.

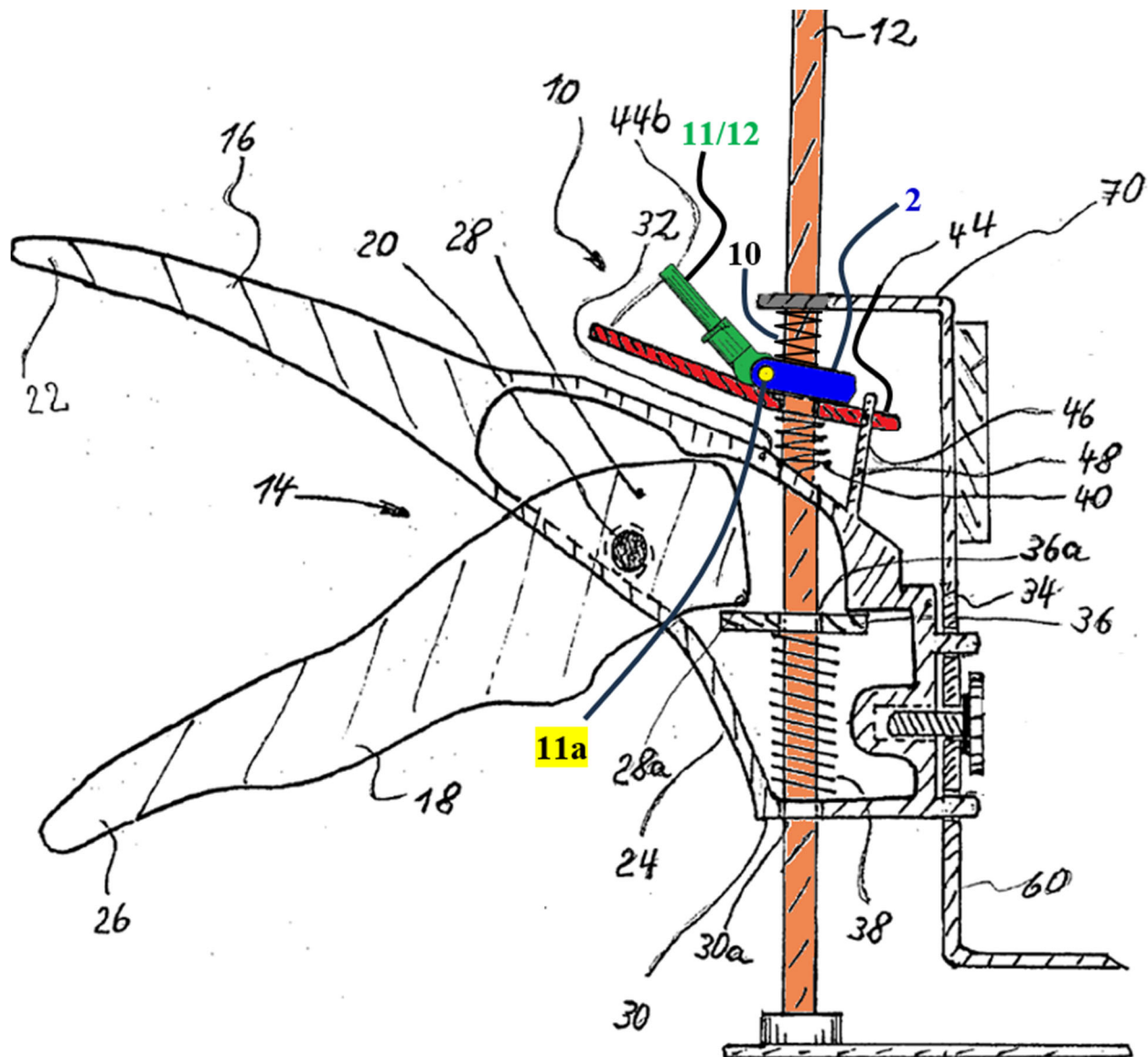
Section VII.B, above, shows that the obviously modified Gruber jack satisfies claim 1. As explained above in Section VI.B, the parties dispute whether “beside” in claim 2 means “nearby” (Patent Owner's construction) or “laterally adjacent” (Petitioner's construction). As explained below, the claim 2 would have been obvious under either construction. Ex. 1002, ¶152.

1. Obviousness If “Beside” Means “Nearby”

As explained and shown above in Section VII.B.7, in the obviously modified Gruber jack, the **pushing lever 11/12** and **release lever 44b** are shaped and

positioned for convenient operation by the operator's thumb, e.g., as taught by Gruber. Ex. 1002, ¶153; Gruber, FIG. 1 (showing thumb operable release lever 44b immediately below the thumb operable intermittent lowering/pushing lever 50b). To facilitate convenient operation by the operator's thumb, it would have been obvious to position the thumb-operable portions (i.e., the rear ends) of the levers 11/12, 44 nearby each other so the operator's thumb can easily reach both. Ex. 1002, ¶153.

For example, it would have been obvious in the obviously modified Gruber jack for the thumb operable release lever 44b and **pushing lever 11/12** to be positioned in the same convenient relative locations as the release lever 44b and intermittent lowering/pushing lever 50b were in Gruber's original tool, i.e., so that the thumb operable **pushing lever 11/12** is immediately above the thumb operable **release lever 44b**, as shown below. Gruber FIG. 1; Ex. 1002, ¶154.



Obviously Modified Gruber Jack

As a result, the rear end of the thumb operable **pushing lever 11/12** is immediately above the rear end of the **release lever 44b**, such that they nearby each other. See Section VI.B.2., above; Ex. 1002, ¶155. The obviously modified Gruber jack would therefore satisfy all limitations in claim 2 if “beside” means “nearby.” Ex. 1002, ¶156.

2. Obviousness If “Beside” Means “Laterally Adjacent”

It also would have been obvious to have further modified the Gruber jack so that the rear ends of the thumb operable **pushing lever 11/12** and the **release lever 44b** are laterally adjacent each other for safety and/or ergonomic reasons. Ex. 1002, ¶¶157-158.

Safety: A POSITA would have thought that if the **pushing lever 11/12** was above the **release lever 44b**, and the operator intended to push on the **pushing lever 11/12** to provide controlled gradual lowering, the operator’s thumb could slip off of the back of the **pushing lever 11/12** and mistakenly push on and release the **release lever 44b**, resulting in an unintended and potentially hazardous complete release of the frame from the **jacking shaft 12**. Ex. 1002, ¶159. A POSITA would have thought that such a disadvantageous result could be avoided by positioning the thumb operable/rear portions of the levers 11/12, 44b laterally adjacent each other. Ex. 1002, ¶159. Lateral adjacency helps to ensure that if the operator’s thumb slips off the back of the **pushing lever 11/12** while pushing downwardly on it, the **downward** trajectory of their thumb will not unintentionally actuate the **laterally adjacent release lever 44b**. Ex. 1002, ¶159.

Ergonomics: A POSITA would have thought that an over/under relationship might require the operator to strain their thumb to reach the **pushing lever 11/12** if the **release lever 44b** was positioned to be comfortably reached by the operator’s

thumb, and vice versa. Ex. 1002, ¶160. In contrast, a POSITA would have thought that positioning the thumb operable portions of the levers **11/12**, **44b** laterally adjacent each other would make it easier for the operator's thumb to reach both levers. *Id.* In other words, a POSITA would have thought that while grasping Gruber's tool's handle 26, it would have been easier for the operator to move their thumb from side to side to actuate the desired lever 11/12, 44b than to move their thumb up and forward or down and back to press the desired lever **11/12**, **44b**. *Id.*

This lateral adjacency would obviously have been achieved, for example, by shaping and bending the **pushing lever 11/12** and the **release lever 44b** so that their forward over/under relationship transitions into a laterally-adjacent (i.e., in/out of the page as shown in the side view of the obviously modified Gruber jack shown above in Section VII.B.1) relationship toward their rear ends. Ex. 1002, ¶158.

In conclusion, it would have been obvious to have modified Gruber's jack such that "the rear end of [Brasemann's] thumb operable **pushing lever [11/12]** and [Gruber's] **release lever [44b]** are positioned beside each other," as recited in claim 2, regardless of whether "beside" means "laterally adjacent" or "nearby." *See* Section VI.B, above; Ex. 1002, ¶¶161-163. Claim 2 would have been obvious under either construction, so the Board can and should find claim 2 obvious/unpatentable without resolving the parties' claim construction dispute.

D. Claim 3

Challenged claim 3 recites:

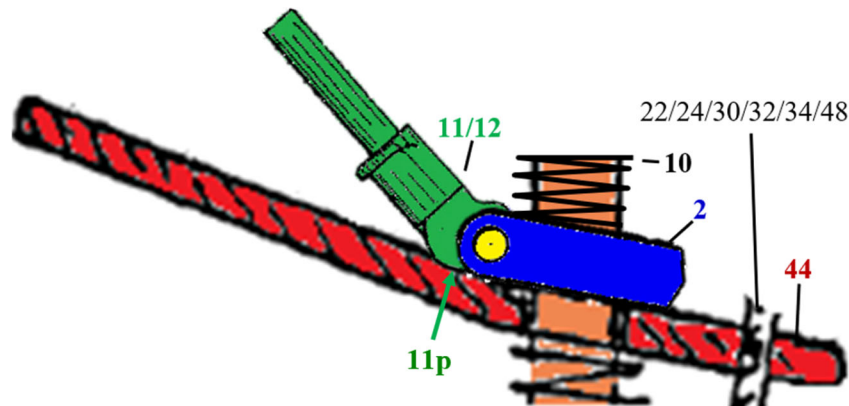
3. The lowering mechanism according to claim 1, wherein the pivot structure is moveable in a rear-front direction and/or in an up-down direction⁶ to regulate the distance of the downward movement of the jacking frame.

Section VII.B, above, shows that the obviously modified Gruber jack satisfies claim 1. As shown below, in the obviously modified Gruber jack, regardless of whether the **pivot structure** is a cam or a structure with a fixed pivot point on the **lever 11/12**, the **pivot structure 11p** is moveable in a rear-front direction (e.g., relative to the **shaft 12**, frame, and **holding plate 2**) as the angles of the **lever 11/12** and **lowering plate 2** change relative to each other and the **shaft 12** when the **lever 11/12** is pressed/actuated, which results in the regulation of the distance of the downward movement of the jacking frame due to the changing angles. Ex. 1002, ¶165.

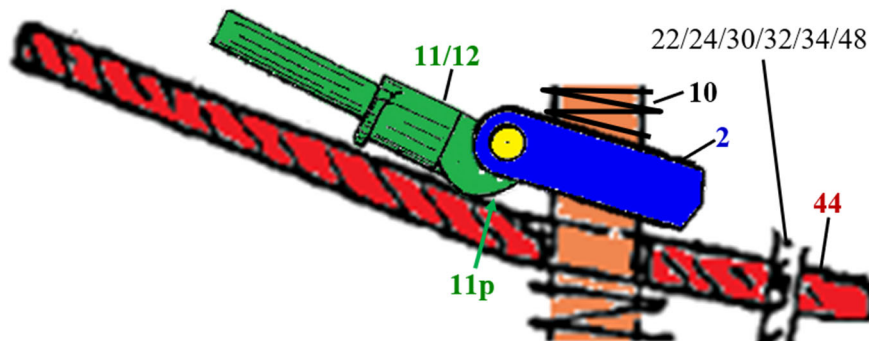
Regardless of whether the pivot structure is a **cam 11p** or a structure with a fixed pivot point on the **lever 11/12** or **holding plate 44**, the pivot structure also

⁶ This limitation is indefinite because movement in the rear-front and up-down direction is not defined relative to a specific structure. For example, the pivot structure can move up-down relative to the **shaft** without moving up-down relative to the holding plate and/or lowering plate, and vice versa. Petitioner interprets claim 3 as best it can despite this indefiniteness.

moves downwardly (e.g., relative to the **shaft 12** and/or **lowering plate 2**) when the **pushing lever 11/12** is activated/pivoted downwardly after the **lowering plate 2** engages the **shaft 12**. Ex. 1002, ¶165. The extent of downward movement of the pivot structure directly regulates the extent of downward movement of the **lever-11/12**-contacting portion of the **holding plate 44** because they are in contact with each other, which in turn regulates the distance of the downward movement of the jacking frame 22/24/30/32/34/48 connected to the **holding plate 44**. *Id.*



Obviously Modified Gruber Jack Lowering Mechanism: Nonactuated



Obviously Modified Gruber Jack Lowering Mechanism: Actuated

Ex. 1002, ¶165. As shown above, for example, the extent of rightward and downward movement of the **pivot structure 11p** during actuation causes and

regulates the distance of downward movement of the contacting **holding plate 44** and connected jacking frame 22/24/30/32/34/48. Ex. 1002, ¶166. As explained above, this makes the lowering mechanism adjustable, since the operator can adjust the extent of downward movement of the frame 22/24/30/32/34/48 by adjusting the extent to which the operator pivots/actuates the **pushing lever 11/12** with its connected **pivot structure 11p**. Ex. 1002, ¶166.

As a result, the obviously modified Gruber jack's "pivot structure [e.g., **11p**] is moveable in a rear-front direction and/or in an up-down direction to regulate the distance of the downward movement of the jacking frame [22/24/30/32/34/48]," as recited in claim 3. Ex. 1002, ¶167. The obviously modified Gruber jack therefore satisfies every limitation in claim 3. *Id.*

E. Secondary Considerations

No secondary considerations weigh in favor of nonobvious. Ex. 1002, ¶¶168-171. For example, the challenged claims solved no long felt need. *Id.*, ¶169. Rather, as explained above, Gruber and/or Braselmann already solved the problems to which the challenged claims were directed, e.g., a safer and/or adjustable incremental lowering mechanism for a lifting jack. *Id.*

F. Conclusion As To Obviousness

In view of this record, claims 1-3 were obvious and unpatentable over Gruber in view of Braselmann. Ex. 1002, ¶172.

VIII. MANDATORY NOTICES (37 C.F.R. § 42.8(A)(1))

A. Related Matters (37 C.F.R. § 42.8(b)(2))

To Petitioner's knowledge, the '473 Patent is not directly involved in any related matter. However, the European counterpart (EP3953541B1) of the '473 Patent is currently the subject of an opposition by Petitioner in the European Patent Office, and a UPC infringement proceeding (UPC Case No. ACT_19392/2024) by Patent Owner against Petitioner, Stanley Black & Decker Sweden AB, and Stanley Black & Decker Deutschland GmbH.

B. Real-Parties-In-Interest (RPIs) (37 C.F.R. § 42.8(b)(1))

Petitioner Stanley Black & Decker, Inc. is the real party in interest ("RPI"). No other party has authority to direct or control (i) the timing of, filing of, content of, or any decisions or other activities relating to this Petition or (ii) any timing, future filings, content of, or any decisions or other activities relating to the future proceedings related to this Petition. All of the costs associated with this Petition are expected to be borne by Petitioner.

Petitioner has other related entities and subsidiaries (e.g., Stanley Black & Decker Sweden AB; Stanley Black & Decker Deutschland GmbH.), but does not presently believe that these other related entities or subsidiaries are RPIs. To avoid any potential dispute and to show good faith, all of Petitioner's related entities and

subsidiaries nonetheless agree to be estopped under the provisions of 35 U.S.C. § 315 to the same extent that Petitioner is estopped.

C. Counsel And Service Information (37 C.F.R. § 42.8(b)(3)&(4))

Concurrently filed with this Petition is a Power of Attorney appointing and hereby designating the following Lead and Backup Counsel, per 37 C.F.R. § 42.10(b):

Lead Counsel	Back-Up Counsel
Jack S. Barufka (Reg. No. 37,087) PILLSBURY WINTHROP SHAW PITTMAN LLP <u>Postal and Hand Delivery Address</u> 7900 Tysons One Place, Suite 500 McLean, Virginia 22102 Telephone: 703.770.7712 Facsimile: 703.770.7901 jack.barufka@pillsburylaw.com	Benjamin L. Kiersz (Reg. No. 51,875) PILLSBURY WINTHROP SHAW PITTMAN LLP <u>Postal and Hand Delivery Address</u> 7900 Tysons One Place, Suite 500 McLean, Virginia 22102 Telephone: 703.770.7714 Facsimile: 703.770.7901 benjamin.kiersz@pillsburylaw.com

Please address all correspondence to the lead counsel at the address shown above. Petitioner consents to electronic service by email at: jack.barufka@pillsburylaw.com, benjamin.kiersz@pillsburylaw.com, and docket_ip@pillsburylaw.com.

IX. FEEs

The Office is authorized to charge \$51,875 and any present/future fees due for this petition to Deposit Account No. 033975.

X. STANDING (37 C.F.R. § 42.104(A))

Petitioner certifies that the '473 Patent is available for IPR and Petitioner is not barred or estopped from challenging the claims on the grounds identified herein.

XI. CONCLUSION

Petitioner's invalidity ground demonstrates a reasonable likelihood that Petitioner will prevail against at least one challenged claim, so trial should be instituted and challenged claims 1-3 of the '473 Patent cancelled as obvious/unpatentable⁷ over Gruber in view of Braselmann.

Respectfully submitted,

February 28, 2025

/Jack S. Barufka/
Jack S. Barufka (Reg. 37,087)

⁷ The challenged claims are also invalid for a variety of other reasons (e.g., indefiniteness and/or nonenablement under 35 U.S.C. § 112). 35 U.S.C. § 111(b) prohibits Petitioner from raising those invalidity grounds here, so Petitioner does its best to apply the prior art to these indefinite claims, and reserves the right to pursue other invalidity defenses in the future.

Certificate of Word Count

Pursuant to 37 CFR § 42.24(d), I hereby certify that the number of words in the attached petition (excluding the table of contents, table of authorities, mandatory notices under § 42.8, the certificates of service and word count, and appendix/table of exhibits, per 37 C.F.R. § 42.24(a)(1)), based on the word count feature of the word-processing system used to prepare this petition, is 12,577.

February 28, 2025

/Benjamin L. Kiersz/
Benjamin L. Kiersz (Reg. 51,875)

Certificate of Service

Pursuant to 37 CFR §§ 42.6 and 42.105, I hereby certify that true copies of this PETITION FOR *INTER PARTES* REVIEW UNDER 37 C.F.R. § 42.100 and all exhibits thereto (Exs. 1001-1010) were served February 28, 2025, on Patent Owner as indicated below:

Patent Owner's Correspondence Address Of Record (via Priority Mail Express®)

LEYDIG VOIT & MAYER, LTD
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Alexandria, VA 22314

Courtesy Email Copies To Patent Owner's Known Counsel:

- Jeremy M. Jay (jjay@leydig.com) (Leydig Voit & Mayer, LTD counsel who corresponded with USPTO on behalf of Patent Owner)
- chgpatent@leydig.com (Leydig Voit & Mayer, LTD email address used during prosecution of the '473 Patent)
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- Christopher Tehrani (christopher.tehrani@schjodt.com) (Patent Owner's European counsel in connection with parallel UPC proceeding)

February 28, 2025

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