

DECLARATION OF DOMENIC RIZZOLO

1. I, Domenic Rizzolo, submit this declaration on behalf of the Patent Owner, Provisur Technologies, Inc. (“Provisur”). I am a citizen of the United States, over 18 years of age, and competent to testify to the matters contained in this Declaration. If called as a witness, I could and would competently testify to these same facts.

BACKGROUND & QUALIFICATIONS

2. I am currently employed as a Manager in Aon’s Stroz Friedberg Digital Forensic and Incident Response team (“Stroz Friedberg”). I have been employed at Stroz Friedberg since September 2015. My CV attached as Exhibit A.

3. At Stroz Friedberg, I frequently conduct forensic examinations on a variety of computers and other digital media, advising in civil litigation and incident response cases. Specifically, my consultations have included the retrieval, preservation, and analysis of a variety of electronic evidence in order to present facts and opinions.

4. I attended the University of Michigan where I received a Bachelor’s Degree in Mathematics. I have multiple certifications in computer forensics and other information security fields.

RETENTION AND ASSIGNMENT

5. Stroz Friedberg was retained by Provisur, under the direction of Willkie Farr & Gallagher LLP, to preserve a webpage.

6. I preserved the webpage on December 5, 2023. A true and accurate copy of the original evidence was captured.

PRESERVATION

7. I preserved the webpage residing at the following URL:

<https://web.archive.org/web/20130603145902/https://www.pffc-online.com/web-handling/tension/7615-paper-grip-on-web-1109> (“the webpage”).

8. I preserved the webpage by accessing its URL via version 119.0.6045.200 of the Google Chrome web browser on December 5, 2023. Upon accessing the webpage, I used multiple built-in functionalities of the Google Chrome web browser to capture the content of the webpage. I used all three settings of the “Save Page As...” feature within Google Chrome to capture the data that comprised the webpage. The resulting downloaded iterations of the webpage were preserved as it would appear to a Google Chrome user.

9. I used the “Webpage, HTML Only (*.html; *.htm)” setting of the “Save Page As...” feature to preserve the webpage on December 5, 2023, at 17:16:25 UTC¹. This preservation captured the contents of the webpage in a single “.html” file of size 57,218 bytes.

10. I used the “Webpage, Single File (*.mhtml)” setting of the “Save Page As...” feature to preserve the webpage on December 5, 2023, at 17:16:54 UTC. This preservation captured the contents of the webpage in a single “.mhtml” file of size 1,492,564 bytes. A true and correct copy of this preserved webpage, converted to a PDF, is attached here as Exhibit B.

11. I used the “Webpage, Complete (*.html; *.htm)” setting of the “Save Page As...” feature to preserve the webpage on December 5, 2023, at 17:17:56 UTC. This preservation captured the contents of the webpage and its associated elements in 83 separate files that sum to a total size of 3,733,729 bytes.

12. The Internet Archive, also known as the Wayback Machine, is a website residing at the following URL: “<https://web.archive.org/>”. The Internet Archive is a 501(c)(3) non-profit

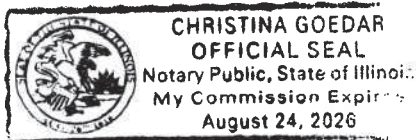
¹ All dates in this declaration are recorded in Universal Coordinate Time (“UTC”) unless otherwise noted. Some timestamps have been converted to UTC from their original time zones.

focused on building a digital library of Internet sites and other cultural artifacts in digital form. The site provides free access to researchers, historians, scholars, the print disabled, and the general public. The archive has been preserving stateful copies of billions of webpages for over 25 years².

13. Since the Wayback Machine can snapshot the same webpage across multiple days and years, the naming convention of a given URL from the Wayback Machine includes a date code embedded in the archived URL which indicates when a particular version of the webpage was archived by the Wayback Machine's web crawler. These date codes include a date and timestamp in the UTC time zone.

14. Based on the disclosed formatting style of the Wayback Machine's date codes, I discerned that the embedded date code associated with the webpage, "20130603145902", correlated with a preservation timestamp of June 3, 2013, at 14:59:02 UTC.

15. Under penalties of perjury, I declare that the foregoing Declaration and the facts stated in it are true and correct.



Christina Goedar
Christina Goedar
Commission # 881221

By: *Domènec Rizzolo*
Name: Domènec Rizzolo
Title: Manager, Straz Friedberg
Date: 2023-12-06

² See <https://archive.org/about/> for further information about the Internet Archive.

Domenic Rizzolo

Manager



+1 312 646 7352



domenic.rizzolo2@aon.com



200 East Randolph Street, Floor
10, Chicago IL, 60601

PROFESSIONAL EXPERIENCE

Stroz Friedberg, an Aon Company

Manager, April 2020 to present

Chicago, IL

Manage Chicago, formerly Minneapolis, forensic lab and directly supervise forensic and incident response examiners. Conduct digital forensic acquisitions and examinations of laptops, desktops, and other digital storage media in civil litigations, criminal matters, and internal investigations. Conduct significant breach investigations. Utilize various open-source and proprietary analysis tools to identify attacker presence and impact. Identify data exfiltration through forensic host analysis, memory analysis, and active SIEM and IDS monitoring. Preserved and analyzed data from laptops, desktop computers, servers, and mobile devices. Identify clients' risk related to internal IT infrastructure, publicly available IT assets, and other relevant attack surfaces.

Senior Consultant, April 2018 to May 2020

Consultant, June 2016 to April 2018

Cyber Associate, September 2015 to May 2016

Duo Security

Security Researcher, Labs Division & Office of the CTO, April 2014 to April 2015

Ann Arbor, MI

Contributed to special projects, assessments, and creation of strategic surprise in daily collaboration with CTO and Duo Labs research team. Created and refined content drawing 5,000+ unique viewers to the company website. Assisted in vulnerability research, cataloging, and disclosure; developed code in collaboration with Engineering, Product, and Marketing; published internal threat assessments.

Levy Restaurants: Park View at Ravinia Festival

Lead Server and Caterer, Summer 2012 to Summer 2013

Highland Park, IL

University of Michigan

Research Assistant on "The Cyberwar History Project", September 2012 to May 2013

Ann Arbor, MI

Researched and analyzed scholarly articles, tracked findings in database, interpreted and analyzed metadata, extrapolated trends. Other projects included presenting findings at annual University Research Symposium

Vector Marketing

Personal Sales Associate, Summer 2011

Northbrook, IL

About: Aon's Cyber Solutions offers holistic cyber risk management, unsurpassed investigative skills, and proprietary technologies to help clients uncover and quantify cyber risks, protect critical assets, and recover from cyber incident.

Cyber security services offered by Stroz Friedberg Inc. and its affiliates. Insurance products and services offered by Aon Risk Insurance Services West, Inc., Aon Risk Services Central, Inc., Aon Risk Services Northeast, Inc., Aon Risk Services Southwest, Inc., and Aon Risk Services, Inc. of Florida and their licensed affiliates.

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EDUCATION

University of Michigan, Ann Arbor, Michigan
Bachelors of Science, Mathematics - Discrete and Algorithmic Methods, May 2015

Certifications

GIAC Defending Advanced Threats (GDAT) 2020. Global Information Assurance Certification
GIAC Certified Forensic Analyst (GCFA), 2019-2023. Global Information Assurance Certification
GIAC Network Forensic Analyst (GNFA), 2018. Global Information Assurance Certification
GIAC Certified Forensic Examiner (GCFE), 2015-2023. Global Information Assurance Certification

Training

Stroz Friedberg Internal Cyber Training Program: Participate in regular in-house training presentations on current digital forensics, cybercrime response, computer security, desktop, and network forensic tools in conjunction with relevant legal and industry matters. Lead advanced training for annual associate classes.

SANS DFIR, Forensics 509: Enterprise Cloud Forensics and Incident Response. Attended week-long training with focus on cloud hosting infrastructure, digital forensic processes in cloud computing environments, and responding to threats against enterprise cloud environments.

SANS DFIR, Security 599: Defeating Advanced Adversaries - Purple Team Tactics & Kill Chain Defenses. Attended week-long training with focus on advanced attack techniques and corresponding system defenses.

SANS DFIR, Forensics 508: Advanced Incident Response, Threat Hunting, and Digital Forensics. Attended week-long training on enterprise incident response and forensics.

SANS DFIR, Forensics 572: Advanced Network Forensics. Attended week-long training focused on evidence collection and analysis of computer networks.

SANS DFIR, Security 504: Hacker Tools, Exploits, and Incident Handling. Attended week-long training focused on incident response and network intrusion techniques.

SANS DFIR, Forensics 408: Windows Forensic Analysis, September 2015 Attended week-long training on in-depth forensic analysis of Windows operation systems.

Lectures and Presentations

Winter Semester 2016, 2017, 2018, 2020, 2021, 2022, 2023: Guest Lecture presentation "Introduction to Forensics", at Loyola University Chicago class on Electronic Discovery Law & Problem Solving

August 2014: Presented on "Hacker Community and Culture", at BSides InfoSec Conference, Las Vegas, NV

May 2017: Guest Lecture presentation "Digital Forensics & Incident Response", at DePaul University

February 2018: Guest Lecture presentation "Simplified Kill Chain: Actor Sophistication" at Northwestern University class "COMP_SCI 355: Digital Forensics and Incident Response"

May 2018: Presented on "Family-Style Incident Response" at BSides Chicago Conference

September 2018: Presenter on "What Keeps You Up at Night" roundtable at Washington University in St. Louis

Awards and Recognition

SANS Institute "DFIR Netwars" Individual Event Winner, December 2020

SANS Institute "DFIR Netwars" Team Event Winner, December 2017 & 2018

Michigan Traditions Scholarship for Notable Academic Achievement, University of Michigan, 2012 - 2015

Paul Taylor Award for Most Valuable Member, University of Michigan Men's Glee Club,

Llangollen Award for Tradition, Camaraderie, and Musical Excellence, University of Michigan Men's Glee Club,

Youth Leadership Award, Archdiocese of Chicago Vicariate II,

Get a Grip on Your Web

November 01, 2009, By Pete Eggen, Webex Inc.



Whether a converter needs to isolate tension at various zones in a web line, reduce web slippage over a roll, or pull the web at increased speeds and with greater operator safety, vacuum rollers can solve these web handling needs with unique traits not found in nip rollers or “S” wraps.

Vacuum rollers are designed to pull the web into intimate contact with the roll, preventing web slippage in either direction. The result is a highly effective web control device that can handle a wide variety of web tensions and tension differentials.

For companies such as Arkwright and Green Bay Packaging, vacuum rollers are the gold standard in ensuring quality product. (Arkwright produces coated paper and film for the reprographics industry. Green Bay Packaging produces pressure-sensitive laminated structures for the roll label industry.)

ANALYSIS OF A VACUUM ROLLER

There are two essential elements of a vacuum roller:

- A rotating shell with a special surface through which air can pass
- An engineered pathway to evacuate air from inside of the shell

In addition, each roller is designed with a specific vacuum zone that approximates the area of web wrap. Internal seals surround the vacuum zone to help ensure air flow efficiency and minimize air flow noise.

In a typical vacuum roll (see **Figure 1**), the rotating shell is driven around a stationary center tube that evacuates air. **Figure 2** shows the stationary vacuum zone established within the shell. The vacuum zone angle/area is slightly less than the web wrap angle/area to help maintain vacuum (air) forces that act upon the web.

Similarly, the width of the vacuum zone along the length of the roll is slightly less than the web width. Some vacuum rolls are designed with an adjustable vacuum zone width to accommodate changing web widths.

HANDLING WET OR COATED WEBS

A vacuum roller can provide web control while touching only one side of the web. This is especially useful in transporting or redirecting wet and/or coated webs. Nip rolls and “S” wrap configurations have limited use with such webs as each will result in roller contact with both sides of the web.

Pressure-sensitive label stock is produced at Green Bay Packaging by tandem coating a release base with silicone, then with adhesive, and then it's laminated to paper or film. For Green Bay Packaging's facility in Wisconsin, the single-side contact that vacuum rollers provide is critical. Double-sided contact would mar the adhesive and coat the roller. “Vacuum rollers are a necessary piece of equipment because they combine single side-contact and tension isolation,” says Mike Mendolla, special projects coordinator. “We couldn't do it any other way.”

Green Bay Packaging employs 12 vacuum rollers. Vacuum rollers have been in service there for 25 years, mostly to isolate web tension with single-side contact before and after dryers and around coating processes.

ISOLATING WEB TENSION

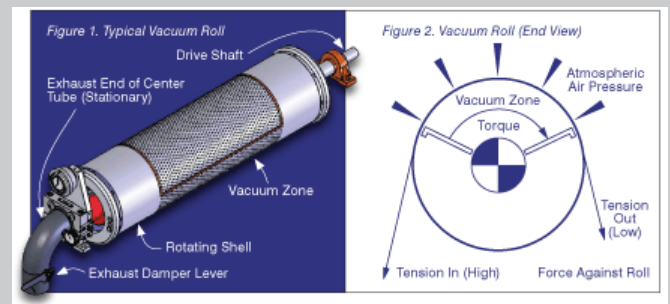
Controlling or isolating web tension can be critical to various processes, such as coating or laminating. Vacuum rollers often are employed to isolate web tension by either pulling the web or holding it back. In doing so, vacuum rollers can sustain large tension differentials within a single web line. The positive grip and control helps minimize web stretching and resulting web breaks, even with lightweight films at very low tensions.

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Giorgio Girardi, plant engineering manager at Arkwright, has found vacuum rolls to be the surest way to maintain proper web tension and consistent coating while avoiding scratches to coated surfaces caused by the double-sided contact of nip rolls or “S” wraps. Arkwright currently employs three vacuum rollers on one coater and two vacuum rollers on another coater.

Coating operations, like those at Arkwright and Green Bay Packaging, use vacuum rollers to isolate web tension in floatation dryers and prevent web flutter, ensuring consistent drying of web coatings (see **Figure 3**). Mendolla explains, “At Green Bay Packaging, one vacuum roller pulls the coated web right before the dryer. There's another vacuum roller at the exit. This way we regulate web tension inside the dryer from end to end.”

Safer Alternative to Nip Rolls

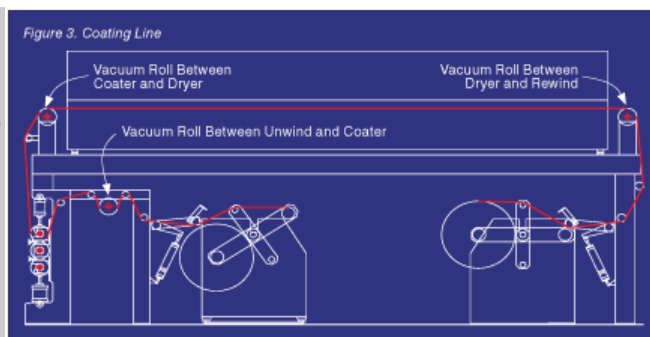


Special projects coordinator Mike Mendolla (right) and operator Rick Gezella are shown with one of the 12 vacuum rolls in use at Green Bay Packaging. This one is positioned immediately after an overhead dryer.

Nip rolls are a potential source of worker injuries. This factor alone has led some web processors to specify vacuum rollers wherever possible.

Unlike nip rolls, vacuum rollers will not produce scratches, imprints, and wrinkles in the web that result in unusable material. Moreover, vacuum rollers save operator time by eliminating nip adjustments for web thickness, by providing better access for web threading, and by avoiding the need to manually close nips before starting a line.

Users like Girardi often appreciate the improved safety, reduction in scrap, and savings in operator time that come from replacing a nip with a vacuum roller. “The feature I like most about vacuum rollers is not having to run the web through a nip,” says Girardi, “In fact, we are now planning to install two more vacuum rollers on the coating machine at our Rhode Island facility to replace existing nips.”



Guiding Webs

Vacuum rollers are gaining popularity as part of web guides. This application takes advantage of the vacuum roller's ability to keep a good grip on the web, even as path adjustments are being made by the guide.

When used as edge guides, vacuum rolls not only serve to guide webs but also to isolate tension at the same time.

Mendolla says one of the coating machines at Green Bay Packaging uses a vacuum roller as part of an edge guide. Here the roller is configured as part of a web guide with a conventional edge detector to monitor web shifting. “The vacuum roller continually pivots to keep the web in line throughout the machine so it never drifts to one side or the other,” he states.

Design Considerations

To calculate vacuum roller specifications, most manufacturers will need the user or machinery builder to provide the following operating specifications:

- Maximum and minimum web width
- Wrap angle
- Substrate types/thicknesses
- Line speed
- Tension and tension differential ranges
- Orientation of the center of the vacuum zone
- Operating environment, including web temperature, air temperature, explosion-proof requirements, clean room considerations, elevation, and electrical power available

Among all the input specifications, the least understood and most important is tension differential. This is not the range of tension at which the web line can run but the difference between the tension zones preceding and following the roller. This is the net tension value the roller will either have to pull or hold back. This is also the value that will drive the sizing of the roll and the air system.

“When it comes to managing Arkwright's tension differential, we use eight-inch and ten-inch vacuum rollers because our specific tension differential determined the diameter of the roller,” Girardi says.

Other considerations also can drive the specification of a vacuum roller, such as the substrate, how the roller will be driven, where it will be mounted, and locations of adjustments or connections.

Vacuum rollers have been used successfully in coating and converting for many years. Still, those who seek to create a better coating or converting process or a better web product continue to apply vacuum rollers in creative ways.

Those who understand the characteristics of vacuum rollers usually are the ones who achieve greater results in using these unique rollers for enhanced productivity and safety. The possibilities are many when you consider all the ways vacuum rollers can control a web.

Pete Eggen has more than 20 years' engineering experience within the converting industry in process analysis, product design, and applications engineering for web process rollers. He is currently roll product manager at Webex Inc., Neenah, WI. Contact him at 920-729-6666.

Supplier Info

- **Webex Inc.** | www.webexinc.com
Circle 320 or visit www.freeproductinfo.net/pff

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