No. 667,020. Patented Jan. 29, 1901.

F. H. KENYON.

COMBINED NEGATIVE AND PRINT WASHER.

(Application filed Oct. 19, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

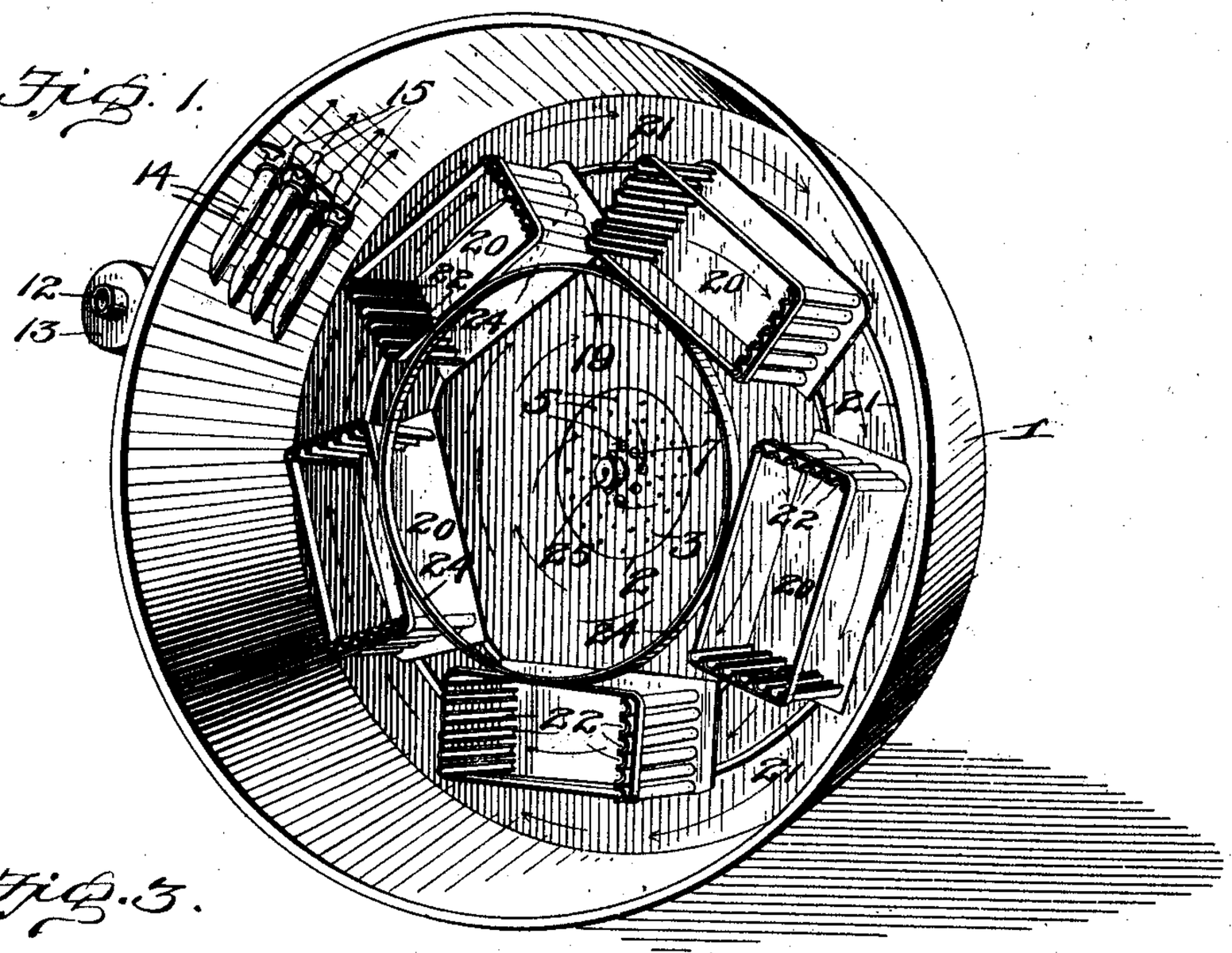
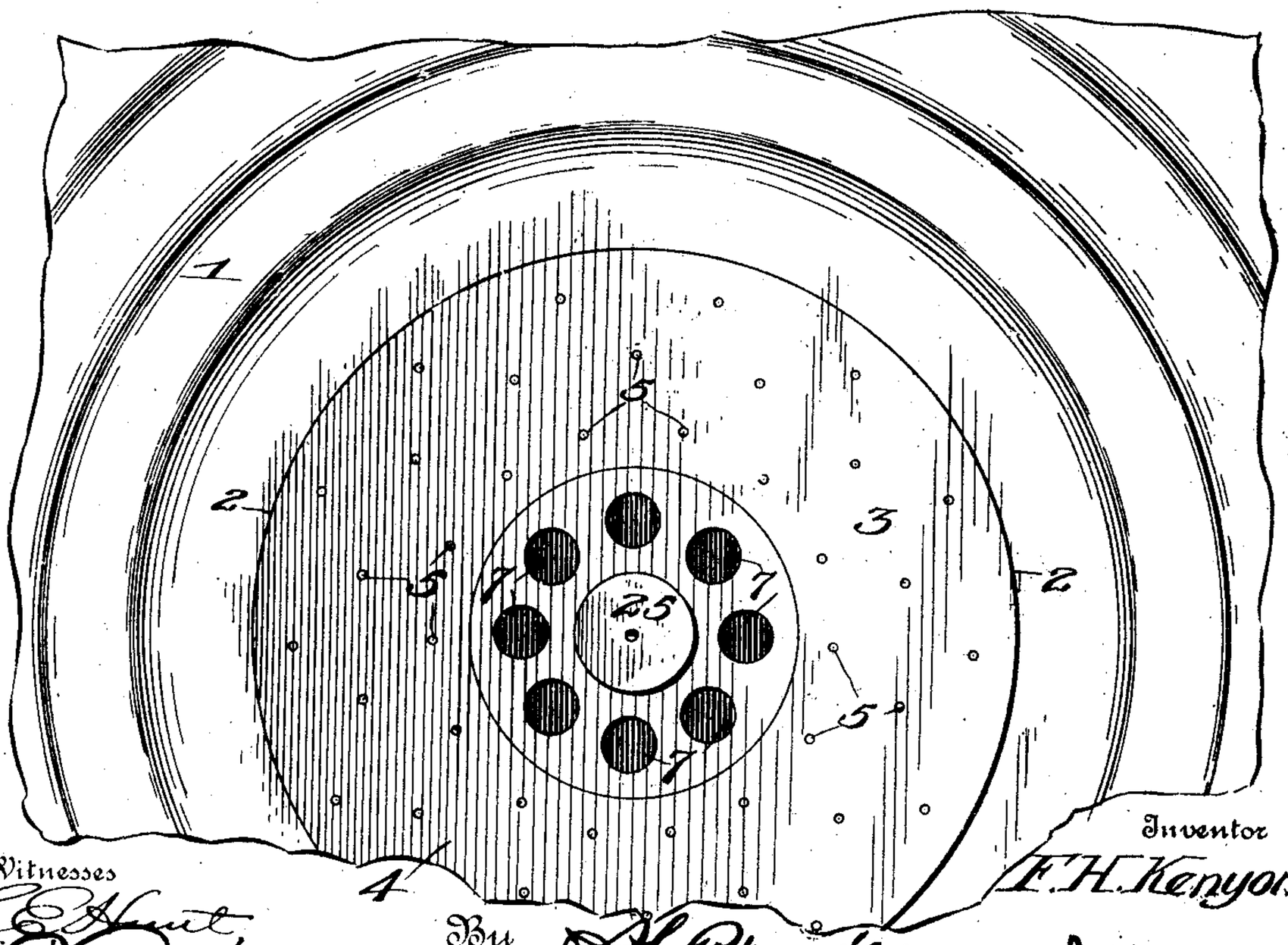


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 2.

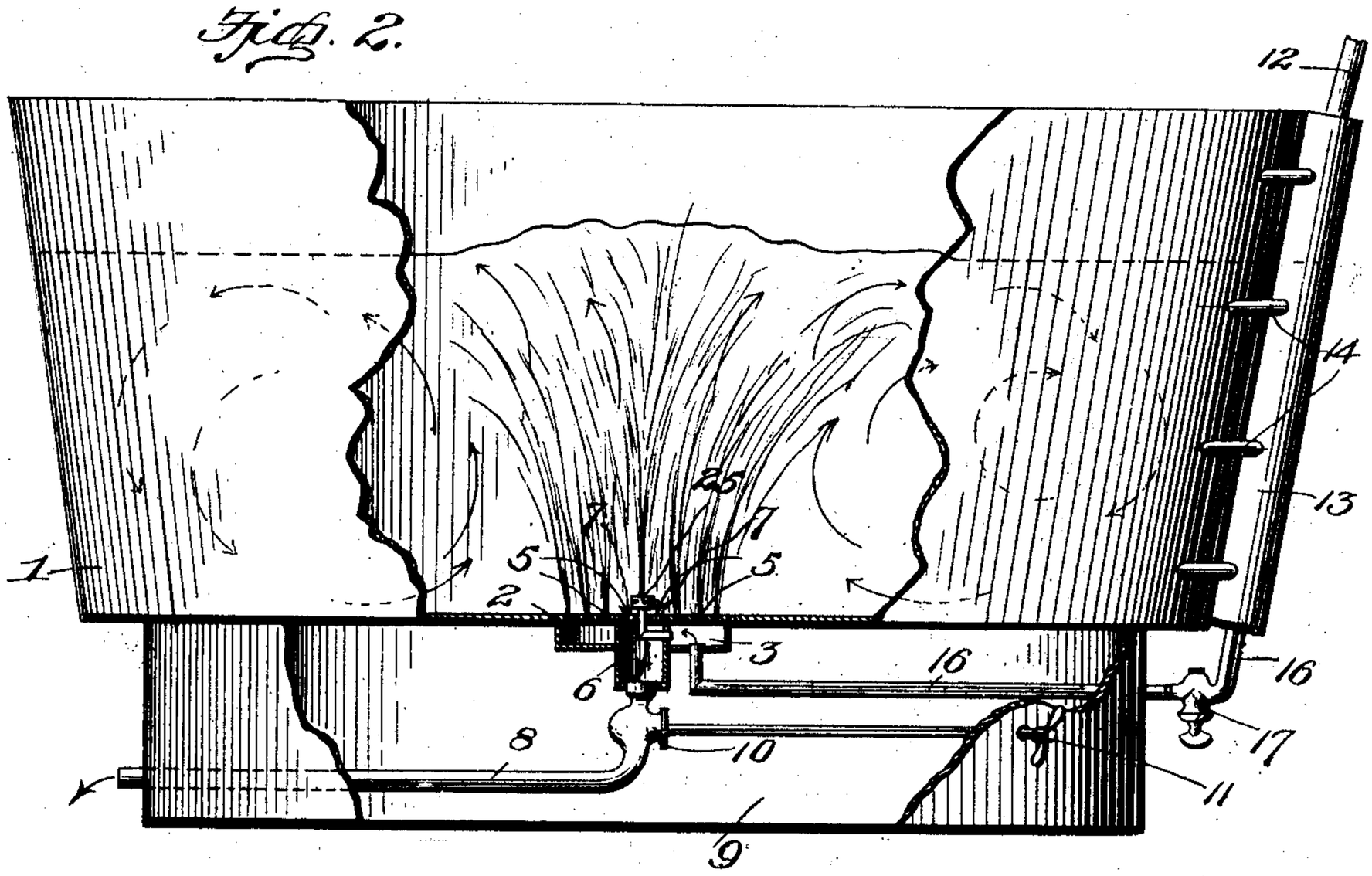
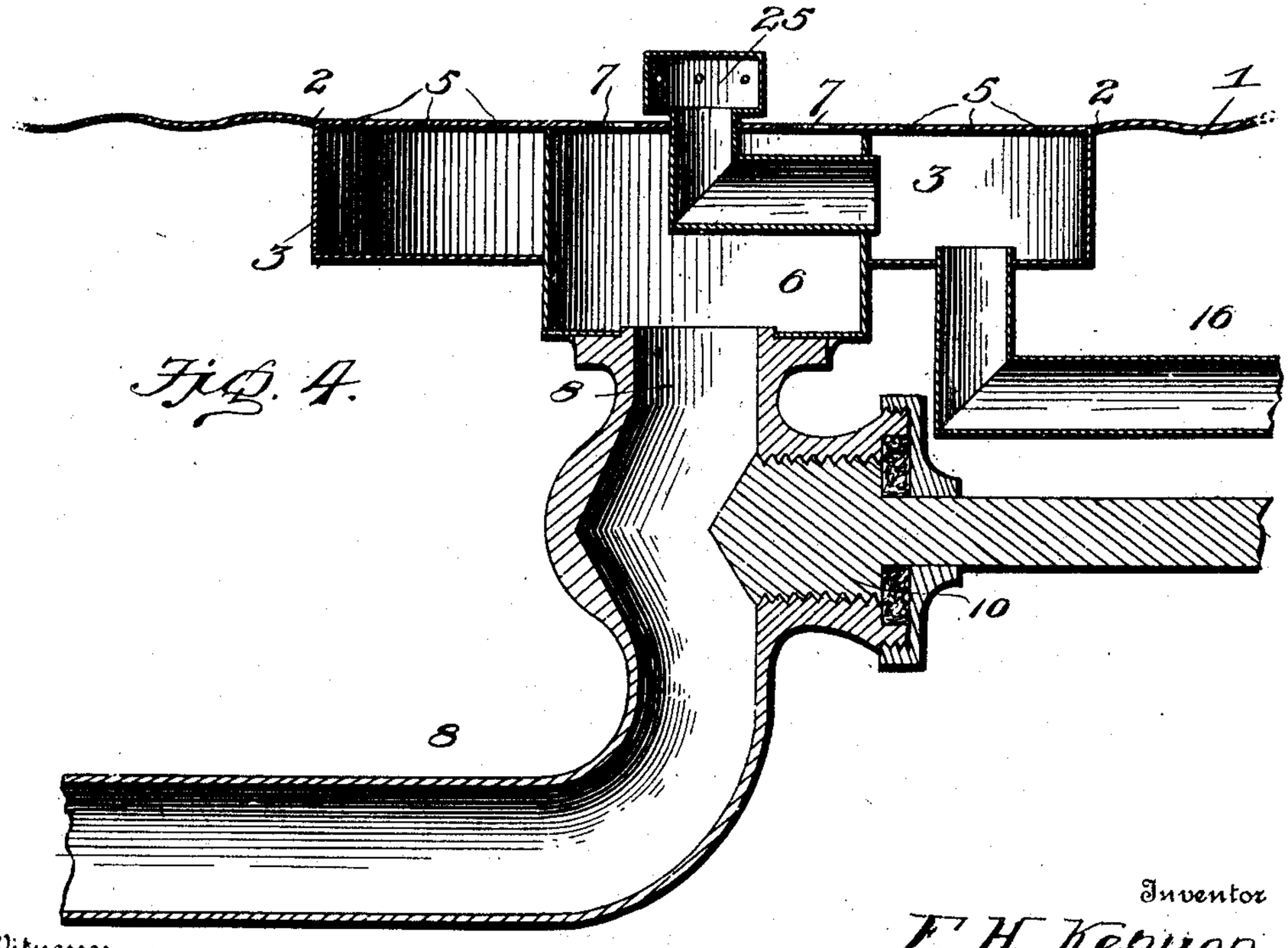


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK H. KENYON, OF BARRE, VERMONT.

COMBINED NEGATIVE AND PRINT WASHER.

SPECIFICATION forming part of Letters Patent No. 667,020, dated January 29, 1901.

Application filed October 19, 1900. Serial No. 33,569. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. KENYON, a citizen of the United States, residing at Barre, in the county of Washington and State of Vermont, have invented certain new and useful Improvements in a Combined Negative and Print Washer; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a combined negative and print washer.

The object of the invention is to provide a device of this character by means of which photographic negatives and prints may be more expeditiously and thoroughly washed, thus greatly lessening the time now required, as well as enabling me to secure more advantageous results.

To draw a clear line of demarcation between the present invention and the prior state of the art, it may be well at the beginning to briefly state the manner in which prints are now washed, so that the advantages of the present invention will be more readily perceived. It is the custom of careful and painstaking photographers in the final washing to handle each print separately from one tray of fresh water to another tray for at least five times, and on the fifth time the prints in a banked or stacked condition are exposed to running water. This presents serious objections, one of which is that the prints are unevenly washed, the uppermost prints being more thoroughly washed than the lower or underlying prints and the marginal edges of the underlying prints being more thoroughly washed than the central or body portion of the prints, thus only partially removing the hyposulfite of soda, a solution in which the prints are fixed after toning in gold and platinum and often leading the photographer to believe that the discoloration of the prints after mounting is due to some fault of the paper, whereas, as a matter of fact, the direct cause is traceable to the faulty and uneven washing of the prints. My invention aims to overcome these objections by the provision of a simple, durable, and comparatively inexpensive washer which may be of such shapes and sizes as to fit the various styles of sinks located in the photographer's dark or finishing room.

In the accompanying drawings, Figure 1 is a perspective view of the improved combined negative and print washer looking into its interior and indicating by arrows the direction of the current or flow of water in washing photographic negatives. Fig. 2 is an enlarged elevational view, partly in section, the tray removed, illustrating the direction of the water-current when the device is used for washing photographic prints. Fig. 3 is a top plan view, and Fig. 4 is an enlarged vertical sectional view of the discharge-head.

Referring to the drawings, 1 denotes a pan or receptacle having a central aperture 2, in which is secured a discharge-head 3, the upper walls 4 of which are formed with a series of minute discharge or spray openings 5 and a central portion which is divided into an outlet-chamber 6, having holes 7 therein to lead the water from the pan into said chamber and provided with a discharge-pipe 8, which extends under the pan and projects through its supporting-flange 9. This pipe is provided with a controlling-valve 10, having a handle 11, extending through the flange 9 for operating it to cut off the discharge of water from the pan.

12 denotes a hose connected to a service-pipe and leading to a receiver 13, secured to the side of the pan. This receiver 13 is provided with jet-pipes 14, which extend through the side of the pan and are arranged at a tangent to its axis and are provided with controlling-cocks 15.

16 denotes a pipe leading from the lower end of the receiver 13 to the discharge-head 3 and provided with a stop-cock 17.

19 denotes a holder placed within the pan or receptacle and designed to retain in proper position the photographic negatives to be washed. This holder preferably consists of a series of trays 20, the bottoms of which are connected to wire rings 21 and the ends of which are provided with vertical grooves 22, designed to receive the negatives and hold them separated one from the other within said trays. The upper ends of said trays are connected on their inner sides by a hoop 24, and these trays are all arranged tangentially with respect to the axis of the holder.

When it is desired to wash photographic negatives, the negatives are placed side by side in parallel position in each tray and the controlling-cocks 15 turned on. The water will escape from said cocks in jets and will flow in the direction illustrated by the arrows in Fig. 1 evenly and uniformly on each side of the negatives, thus thoroughly and expeditiously washing them and escaping with the sediment through the holes 7 into the outlet-chamber and out through the pipe 8. In this process of washing it will of course be understood that the receptacle or pan is filled to nearly its top with water before the valve 10 is opened and that the water is then kept at a uniform height within said pan or receptacle. Practical demonstrations have proved that the negatives can be washed in less than one-half the time than by other means wherein the negatives are submerged in water in a receptacle in which water is constantly running in at one end of the receptacle and out at the other, and it is believed that this saving in time effected by the present invention is due to the current or force of the water against the negatives; but whether or not this be the correct theory the fact remains that a great saving in time is accomplished by the employment of this washer.

In washing photographic prints, which of course would be unable to stand the same water-pressure as the negatives, in that the one is made of paper and the other glass, I produce a minimum water-pressure in lieu of that above set forth and which I will now proceed to describe. The controlling-cocks 15 are closed and the cock 17 opened. The water passes from the receiver 13 through the pipe 16 into the discharge-head 3, through the minute apertures of which it discharges in a very fine stream and creates the currents indicated by the arrows.

In washing the prints they are placed from the "hypo" solution into the pan or receptacle, but not until nearly full, and the valves 10 and 17 adjusted to maintain approximately a uniform water-level, the prints being supported by the gentle water-current or force caused by the escape of the water-pressure through the minute perforations in the eliminator or discharge-head, which keeps them separated and in continual motion face up and face down. Thus both sides of the prints are carefully and thoroughly washed without handling, as practical demonstrations have proved.

To prevent the outlet from getting stopped during the process of washing the prints, I have provided a rose or protector 25. (Shown in Fig. 2.)

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my invention will be readily understood without requiring an extended explanation. The device is exceedingly useful for the purpose for which it is designed and may be placed upon the market at a comparatively small cost.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a washer of the character described, the combination with a receptacle, of a holder placed therein and comprising a series of trays arranged tangentially to the axis of the receptacle and provided with means for holding the negatives or prints spaced apart in parallel order, and means for generating a water-current between the negatives or prints held in parallel relation, substantially as set forth.

2. A holder for the purpose described comprising a series of trays arranged around a circle, and each tray extending longitudinally at a tangent to the circle, said trays being connected, substantially as set forth.

3. A holder for the purpose described comprising a series of trays arranged around a circle, and each tray extending longitudinally at a tangent to the circle, said trays being connected and provided with means for holding the negatives or prints parallel and spaced apart, substantially as set forth.

4. A holder for the purpose described comprising a series of trays connected to a circular rod and extending longitudinally at a tangent to the rod, said trays being provided with grooves for receiving and holding the negatives or prints parallel and spaced apart, and a band for connecting the inner sides of said trays, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK H. KENYON.

Witnesses:
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