2 Sheets—Sheet 1.

R. F. S. HEATH.

MACHINE FOR BINDING AND WIRING HAT AND BONNET-FRAMES.

No. 182,925. Patented Oct. 3. 1876.

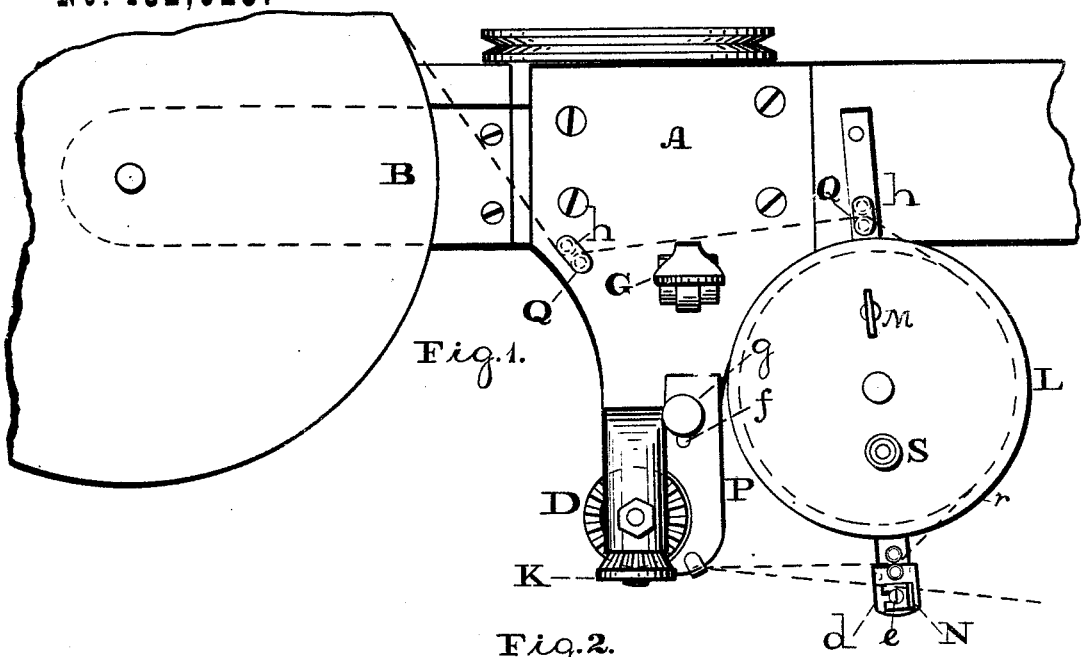


Fig. 1.

Fig. 2.

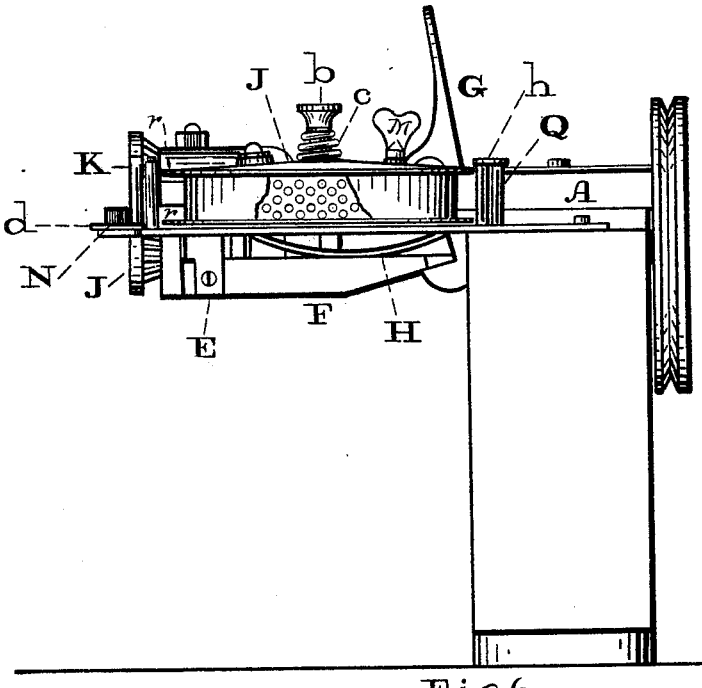
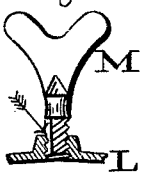


Fig. 6.



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2 Sheets—Sheet 2.

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Fig. 3.

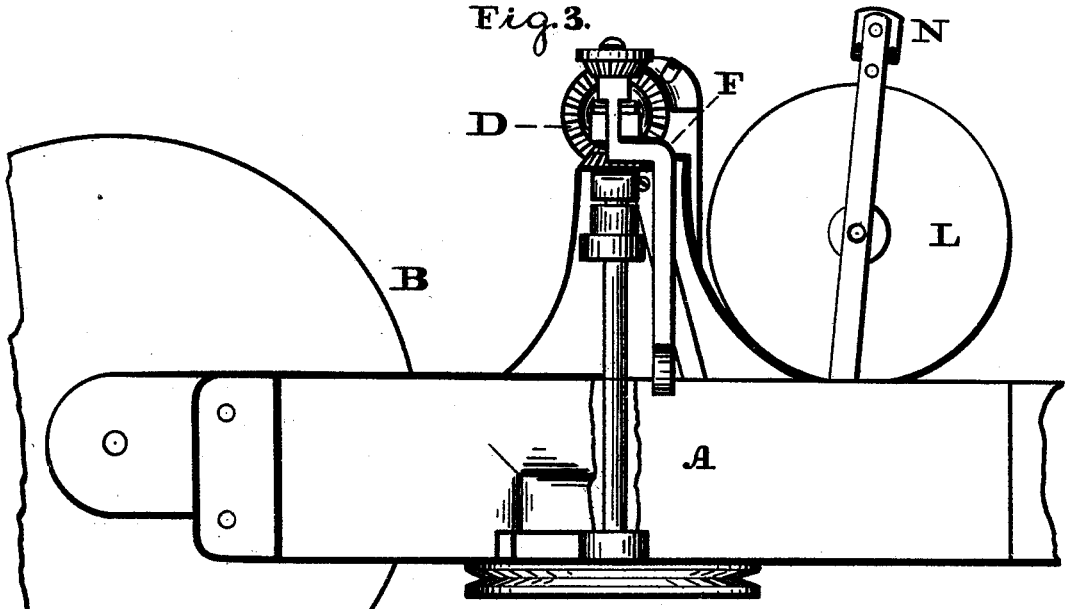


Fig. 4.

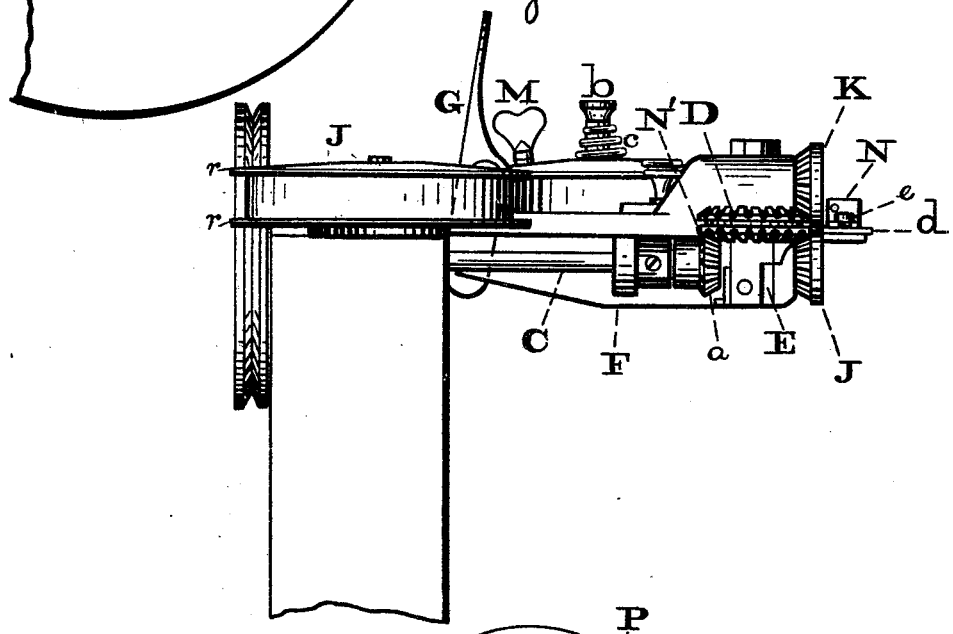
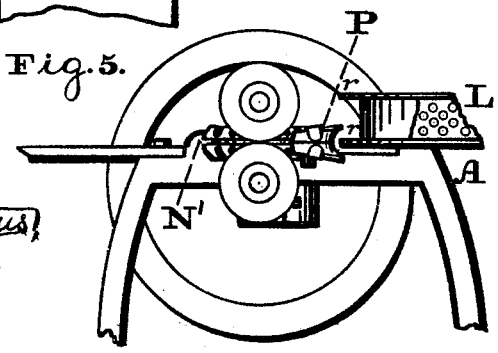


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT F. S. HEATH, OF CAMDEN, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR BINDING AND WIRING HAT AND BONNET FRAMES.

Specification forming part of Letters Patent No. **182,925**, dated October 3, 1876; application filed January 26, 1876.

To all whom it may concern:

Be it known that I, ROBERT F. S. HEATH, of the city and county of Camden, and State of New Jersey, have invented a new and useful Improvement in Machines for Binding and Wiring Hat and Bonnet Frames; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top or plan view of the machine embodying my invention. Figs. 2 and 4 are views of opposite sides thereof. Fig. 3 is a bottom view thereof. Fig. 5 is a front view of a portion thereof. Fig. 6 is a sectional view of the valve of the dampening-wheel.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of an automatic dampening-source whereby the binding will be properly moistened prior to the folding operation. It also consists of a regulator for the supply of water in the dampening-wheel. It also consists of presser-rolls and a gear-wheel therefor, said wheel being grooved for the passage of the fold of the binding, the wire, and the edge of the article to be bound. It further consists of a lever conveniently arranged for opening the presser-rolls, in combination with an arm, on which is mounted the lower presser-roll, and which is pivoted to a lug carrying the the axis of the gear-wheel, to which the upper and lower rolls are geared. It further consists of a wire guide, rendered adjustable relatively to the groove in which it runs during the wiring operation.

Referring to the drawings, A represents the table of the machine, which is properly supported, and in which is mounted the supply-reel B. C represents a rotary shaft, to which is connected a bevel-wheel, *a*, with which meshes a two-faced bevel-wheel, D, whose axis is on a lug, E, to which is pivoted one end of an arm, F, whose other end engages with a notch or fork of a lever, G, which is pivoted to the table A, and rises thereabove, as shown in Figs. 2 and 4. H represents a spring, which is attached to the table A, and bears against the arm F, for holding it in its elevated and operative position. To the outer end of the arm F there is secured the axis of the lower presser-roll J, and to an adjacent portion of the table A there is secured the axis of the upper presser-roll K, the two rolls coming in contact and being formed with bevel-gears, which mesh, respectively, with the upper and lower faces of the double gear-wheel D. L represents a cylinder or wheel for containing water for dampening the binding prior to the folding operation. The periphery of this wheel is reticulated, so that the water will pass therethrough, and surrounding the said reticulated or perforated periphery is a covering of felt or other fabric, which will absorb the water and present a damp surface. The periphery of this wheel is protected by flanges *r r*, extending at right angles thereto, and serving to keep the felt and binding in place on the periphery, preventing them from slipping off, and thus insuring the dampening of the entire surface of the binding. The axis of the wheel consists of an adjusting-screw, *b*, around which is a coiled spring, *c*, which bears against the wheel, and provision is thereby made for adjusting the feed of the binding.

In order to regulate the flow of water to the absorbing-surface I form an opening in the upper wall of the wheel L, and thread the same. Into the opening there is fitted a valvular screw, M, one face of which in its longitudinal direction is removed, so that when the screw is turned down to full extent the air is prevented entering the wheel, and thus the flow of water is stopped. N represents a guide for the wire; and it consists of a plate, having a perforation for the passage of the wire, and attached to a sliding plate, *d*, by a screw, *e*, whereby the guide may be set at different angles, and thus increase or decrease the run of the wire for regulating the same relatively to the work to be accomplished. P represents the folding-gage, which has lips for turning or folding the binding, as is well known. A longitudinally-extending slot, *f*, is formed in the arm or bar of the gage, and through the same is passed a screw, *g*, which enters the table A, so that the gage may be

adjusted with the greatest nicety, and when it is not required for use it may be moved clear of the presser-rolls both laterally and rearwardly.

The guides Q for the binding consist of rollers, mounted on rods, whose upper ends are connected by cross-bars *h*, which prevent the upward escape of the binding.

In the circumference of the double-faced gear-wheel D there is a groove, N′, for the passage of the fold of the binding, the wire, and the edge of the article to be bound.

The operation is as follows: As the binding passes from the reel B it moves between the guides Q, and comes in contact with the moistened face of the wheel L, whereby it is dampened, and it then enters the lips of the gage P, where it is turned or folded, as is well known. The wire moves through the opening in the plate N, to the fold of the binding, and thus the wire and binding pass to the roll J K. The lever G is pressed rearward, so as to depress the forward end of the arm F, and consequently open the rolls for the reception of the rim of the hat or bonnet, or edge of the article to be bound. After this the lever G is let go, the rolls close, and power being applied to the shaft C, the rolls rotate, and draw along the binding-wire and the article to be bound, the binding being pressed thereby, the edge of the article, the fold of the binding, and the wire entering the groove N′ of the two-face gear-wheel D.

Owing to the gummy nature of the binding, and the moistening of the same, the binding pressed by the rolls will adhere to the article, which latter will then be removed by opening the rolls, for which purpose the operator merely exerts pressure against the lever G, which is so situated that the operator can conveniently reach and move the same, besides overlook the work to be accomplished.

In order that the water in the wheel L will properly flow to the fabric surface thereof, the screw M (see Fig. 6) will be raised, so that air will enter the wheel, and in escaping therefrom will run through the perforations of the periphery, at which it will be absorbed by the fabric surface; but when the work is accomplished the screw will be turned down, so as to prevent access of air to the wheel and the escape of water is prevented, and while a slight quantity of water will be absorbed by the fabric surface, the perforations of the periphery of the wheel are so small that by the closing of the vent or valvular screw, the water will remain within the wheel, and the fabric will gradually dry. The lug E not only affords a bearing for the axis of the two-faced gear-wheel, but also forms the bearings for the arm F. The wheel L will be supplied water through an opening, S, which will be closed by a suitable plug. There will be no slip of the article, owing to the presser-rolls being geared together by means of the wheel D.

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

1. The combined dampener-wheel and water-reservoir L, having a reticulated periphery, covered with an absorbent material, and constructed with the flanges *r r*, substantially as described.

2. The valve M, constructed as shown in Fig. 6, with a side groove, in combination with the combined dampening-wheel and reservoir, substantially as specified.

3. The arm F, pivoted at its front end to the lug E, and having its rear end engaging with a lever, G, in combination with the spring H and roll J, all constructed and arranged as shown and described.

4. The combination, with the presser-rolls, of the gear-wheel D, formed with a circumferential groove, N′, substantially as and for the purpose set forth.

5. The lug E, affording a bearing for the axis of the gear-wheel of the presser-rolls, in combination with the arm F, carrying one of the presser-rolls, and pivoted to said lug, substantially as and for the purpose set forth.

6. The wire guide N, having an eye therein, through which the wire passes, in combination with the plate *d* and screw *e*, whereby said guide is rendered adjustable, substantially as and for the purpose set forth.

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