(No Model.)

J. R. RUSSELL.

MACHINE FOR STICKING NAPS ON FELTED HATS.

No. 251,469 Patented Dec. 27, 1881.

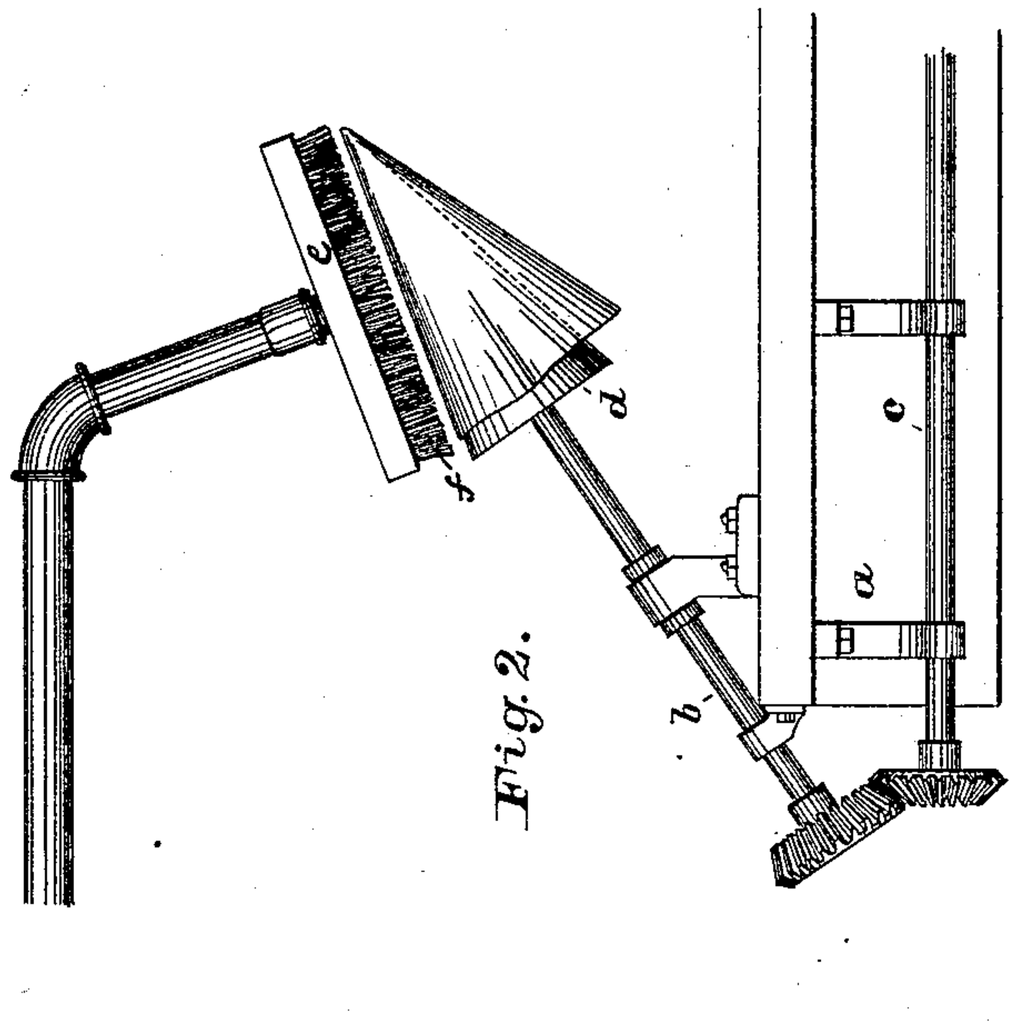

Fig. 2.

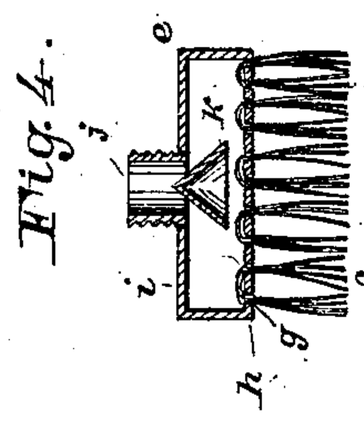

Fig. 4.

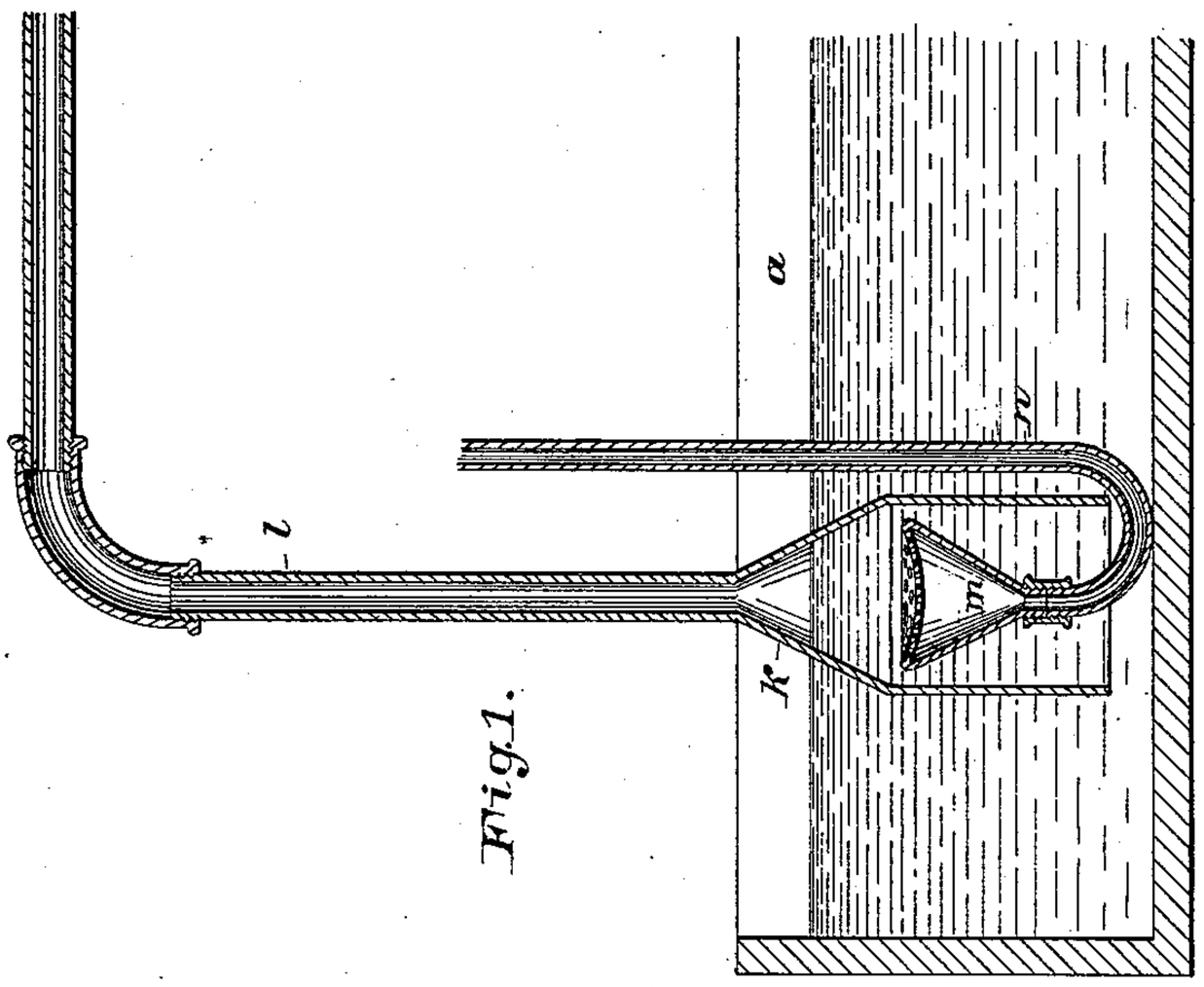

Fig. 1.

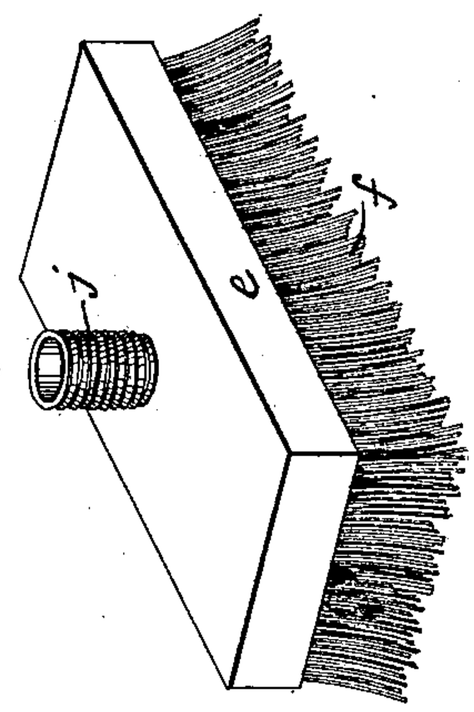

Fig. 3.

Attest:

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UNITED STATES PATENT OFFICE.

JAMES R. RUSSELL, OF BOSTON, MASSACHUSETTS.

MACHINE FOR STICKING NAPS ON FELTED HATS.

SPECIFICATION forming part of Letters Patent No. 251,469, dated December 27, 1881.

Application filed June 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. RUSSELL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Sticking Naps on Felt Hats; and I do hereby 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention is designed to facilitate the sticking on of the nap to a felted hat-body; and the invention consists in a revolving cone upon which the hat-body to be napped is placed, combined with a brush having a hot-water supply for effecting the sticking, whereby the tedious and laborious manual operations heretofore necessary are dispensed with.

In the accompanying drawings, in which like parts are similarly designated in the several figures, Figure 1 is a sectional elevation of one form of apparatus for supplying hot water to the brush of the cone, shown in elevation in Fig. 2. Fig. 3 is a perspective view of the brush, and Fig. 4 is a cross-section of the brush.

Over and upon a suitable hot-water tank or kettle, *a*, I arrange one or more shafts, *b*, slowly revolved, as by suitable gearing from a shaft, *c*. The shafts *b* are arranged at an incline of about thirty-five degrees, and each supports and revolves a cone, *d*, which cone receives the hat-body and nap to be stuck thereon.

e is a brush, which is preferably made with metal bristles *f*, looped through perforations *g* in the inner face, *h*, of the back. The back of this brush is hollow, to form a hot-water chamber over the bristles to supply such water to the bristles, down which it is forcibly expelled onto the nap. The part *i* of the back is provided with a connection-thimble, *j*, in the mouth of which is a deflector, *k*, to spread the incoming water throughout the back of the brush. I supply the hot water to this brush from the tank *a* by a siphon device, (shown in Fig. 1,) consisting of a conical vessel, *k*, open at the bottom and placed within the tank, and having a pipe, *l*, leading therefrom to the hollow-back brush. Within the vessel *k* is an inverted conical rose, *m*, on the end of a steam-pipe, *n*. By the force of the steam escaping through the rose the hot water will be broken up, intermingled with steam, and the commingled fluid will be forced from the tank up through the vessel *k* and into the pipe *l*, and thence supplied to the brush, the steam usually being in excess. I may employ any other suitable hot-water forcing means, or I may lead the steam-pipe *n* directly to the brush, and, if desirable, first through a condenser.

I do not limit my invention to any particular form of water or steam supply so long as such supplying means are controllable to regulate the quantity.

The pipes *l* and *n* may have suitable cocks in them to control the supply to the brush.

Any foraminous device which will supply hot water or steam or equivalent fluid in a multitude of small jets will subserve the same purpose as my brush.

By my mechanism for sticking naps the labor, which requires very considerable skill, is greatly lightened and simplified, and the work done thoroughly, expeditiously, and uniformly. The revolving cone presents every portion of the nap to the action of the brush, so as to insure uniformity in its sticking, and obviating the necessity of manual crozing.

In using my apparatus the hat-body is first formed and the nap laid on it and treated to the usual preliminary sticking with the hand-brush to such an extent as to cause the nap to adhere sufficiently to permit handling. The body and its attached nap are then placed upon my cone, which is slowly revolved, whereby the manipulating of the same is mechanically performed, the forcible expulsion of the fluid through the brush completing the sticking.

Practically an ordinarily skillful workman can put the fur on the hat-body, while the most difficult part of napping—viz., sticking the nap to the body, which requires skilled labor—is all done by the machine and done thoroughly and quickly.

What I claim is—

1. A nap-sticking machine composed of a

revolving cone for supporting and manipulating the body to be napped and a foraminous device for supplying a hot fluid in jets to effect the sticking on of the nap, substantially as described.

2. A revolving cone for supporting and manipulating a hat-body to be napped, combined with a brush and means for injecting a heated fluid through such brush onto the nap to stick it, substantially as described.

3. The art of mechanically sticking hat-naps, the same consisting in turning the hat-body with the nap-bat superposed thereupon to effect the necessary manipulating and crozing, and at the same time subjecting the nap to the action of impelled jets of a fluid adapted to effect the sticking of the nap-stock to the hat-body.

4. In a hat-nap-sticking machine, a hollow-back brush having its bristles looped through a foraminous plate and adapted to supply sticking-fluid to the nap, substantially as described.

5. The combination of a hot-water tank or kettle, a revolving cone for supporting a hat-body to be napped, a nap-sticking brush, and a fluid supply therefor, substantially as described.

6. Mechanically sticking hat-naps to the hat-body by means of a rotary holder for effecting the manipulating and crozing thereof, and means for impelling jets of fluid adapted to embed or stick the ends of the fur in the hat-body, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES R. RUSSELL.

Witnesses:
WM. H. FINCKEL,
GEO. M. FINCKEL.