

*J. W. Hopkins.*

## Hat Brushing & Finishing.

N<sup>o</sup> 87,495.

*Patented Mar. 2, 1869.*

*Fig: 1.*

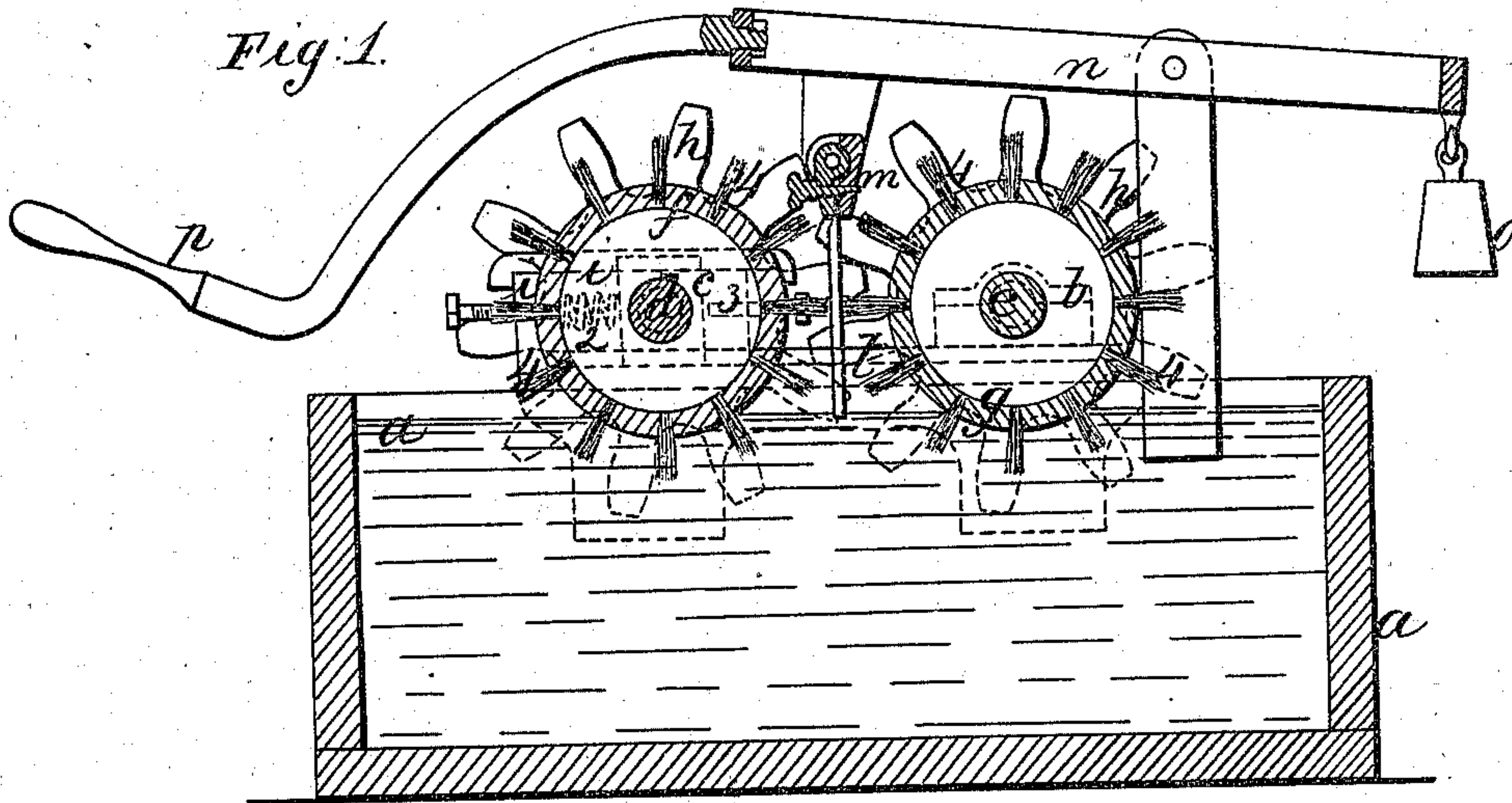
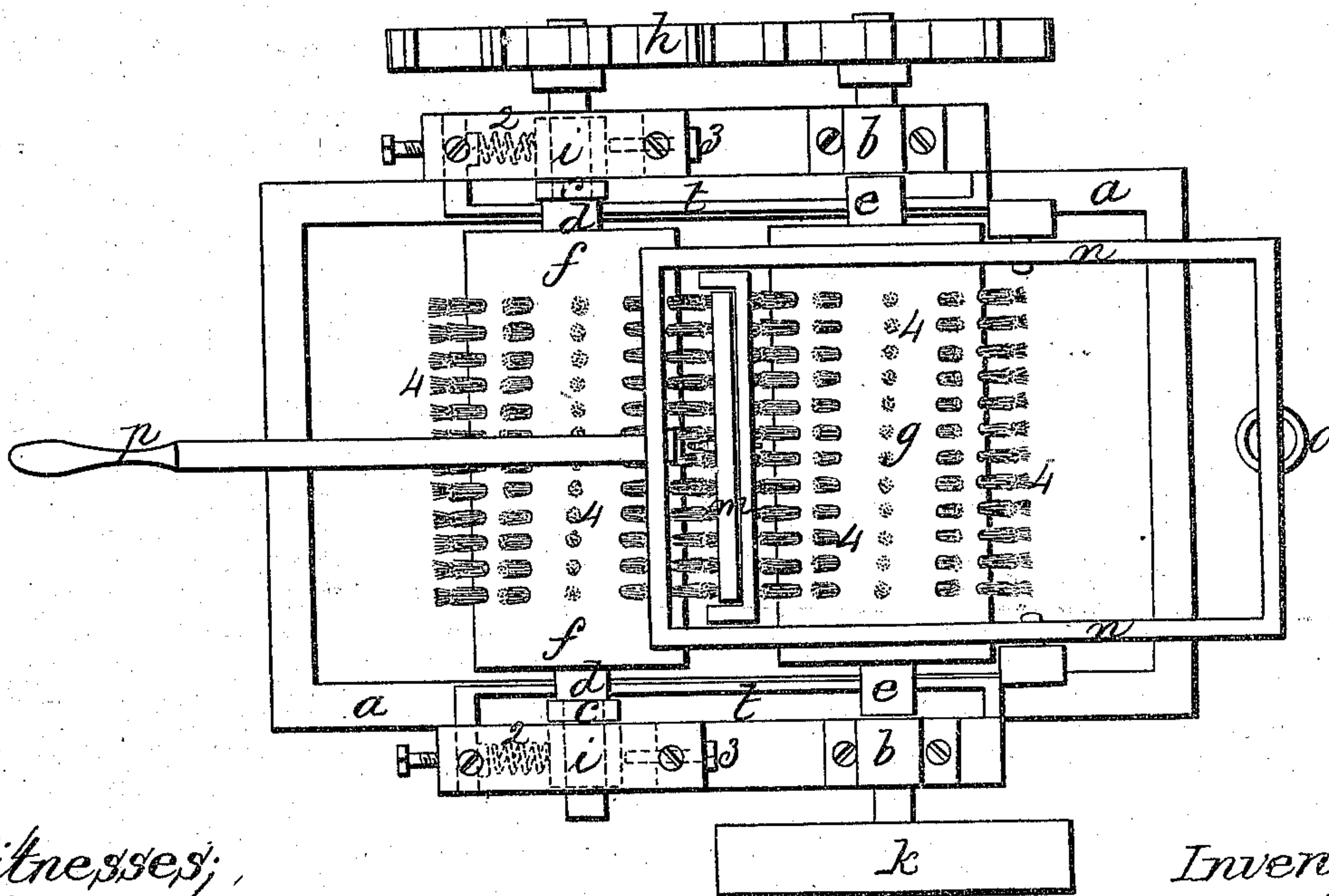



Fig. 2.



Witnesses;  
Chas H Smith  
Geo D Waller

 Inventor;  
Jos. W. Hopkins  
per L. W. Sewell  
att'y.



# United States Patent Office.

JOSEPH W. HOPKINS, OF BROOKLYN, NEW YORK, ASSIGNOR TO  
HIMSELF AND CHARLES B. HARDICK, OF SAME PLACE.

Letters Patent No. 87,495, dated March 2, 1869.

## MACHINE FOR BRUSHING AND NAPPING HATS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH W. HOPKINS, of Brooklyn, in the county of Kings, and State of New York, have invented, made, and applied to use, a new and useful Improvement in Brushing, Washing, and Napping Hat-Bodies; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a vertical section transversely of the brushing-cylinders.

Figure 2 is a plan of the machine.

Similar marks of reference denote the same parts.

Heretofore hat-bodies have been brushed and washed by hand, after the body has been dyed, so as to cleanse the surface, and produce a gloss upon the nap of the hat. This process is tedious and costly, and the nap is not raised with facility, because the dyeing tends to felt the same into the body of the hat.

My machine is adapted to brushing the hat-body, to raise the nap on the same, to washing and brushing the hat-body after dyeing, and to the finishing of the nap on the hat-body, previous to blocking or shaping.

My invention consists of two revolving cylinders, formed with brushes upon their surfaces, in combination with mechanism for holding the hat-body and presenting it gradually to the action of the two cylinders of brushes.

I also make use of a vat of water, in which the lower sides of the cylinders revolve, so as to wet the brushes, and thereby effect the washing of the hat-body simultaneously with the brushing.

In the drawing—

*a* represents a frame or box, supporting the journal-boxes *b b* and *c c* of the shafts *d* and *e* of the brush-cylinders *f* and *g*.

These shafts *d* and *e* are driven in opposite directions, to effect which they are geared or belted together.

I have shown gears *h*, and a driving-pulley, *k*.

To the boxes *c c* a limited movement is allowed, the boxes being set in slides *i*, and springs *2* are employed to press the cylinder *f* toward the cylinder *g*. The extent of motion allowed may be regulated by set-screws *3*.

The brushes *4*, of the cylinders *f* and *g*, are to be made at a slight inclination to the axis of the cylinder, so as to commence to brush at one end, and thereby there will not be any concussion of the brush upon the hat-body that is being operated upon.

The hat-body is held between clamps, *m*, operated by a screw or other device, and said clamps are hung in a frame, *n*, with a counterbalance, *o*, and a lever, *p*, so that the operator can clamp the edges of the hat-body, and then allow it to pass gradually down between the revolving cylinders *f* and *g*, and be brushed, and then drawn back, unclamped, refolded, and again clamped and brushed.

The water-box *a* is to be filled, so that the lower sides of the cylinders *f* and *g* run in the water when the machine is to be used for washing and brushing the hat-bodies, and the water should be heated, and it may contain vitriol, or other materials usually employed in the operations performed by hand.

It will be evident that the hat-body might be presented to the brushes by a pair of small rollers, revolved in one direction, as the hat-body descends between the brush-cylinders, and then revolved the other way, to draw up and deliver the hat-body.

To prevent oil from the journals of the cylinders *f* and *g* getting into the water-box *a*, and injuring the hats, I make use of a ledge, or rim, as at *t*, around the inner sides of the boxes *b b* and *c c*, so as to form a receptacle or tray to catch any oil.

What I claim, and desire to secure by Letters Patent, is—

A pair of brushing-cylinders, one of which is mounted so as to yield, in combination with the means, substantially as specified, for presenting the hat-body to the action of the brushing-cylinders, substantially as described.

In witness whereof, I have hereunto set my signature, this 25th day of November, A. D. 1868.

JOSEPH W. HOPKINS.

Witnesses:

GEO. T. PINCKNEY,  
LEMUEL W. SERRELL.