

No. 664,564.

Patented Dec. 25, 1900.

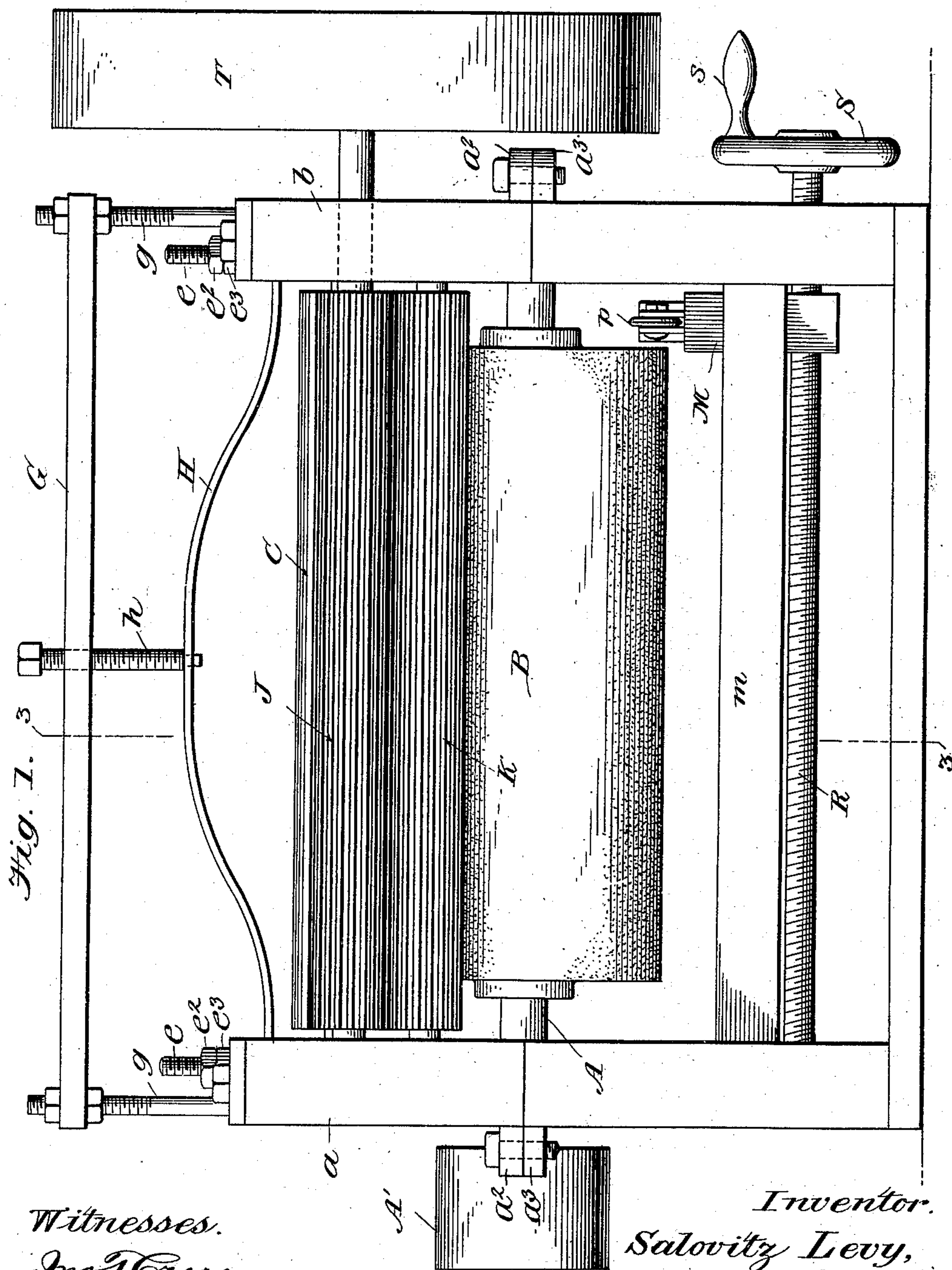
S. LEVY.

MACHINE FOR GRINDING QUILLS OF FEATHERS.

(Application filed Apr. 28, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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Inventor.
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by *Horace Pettit*
his Attorney.

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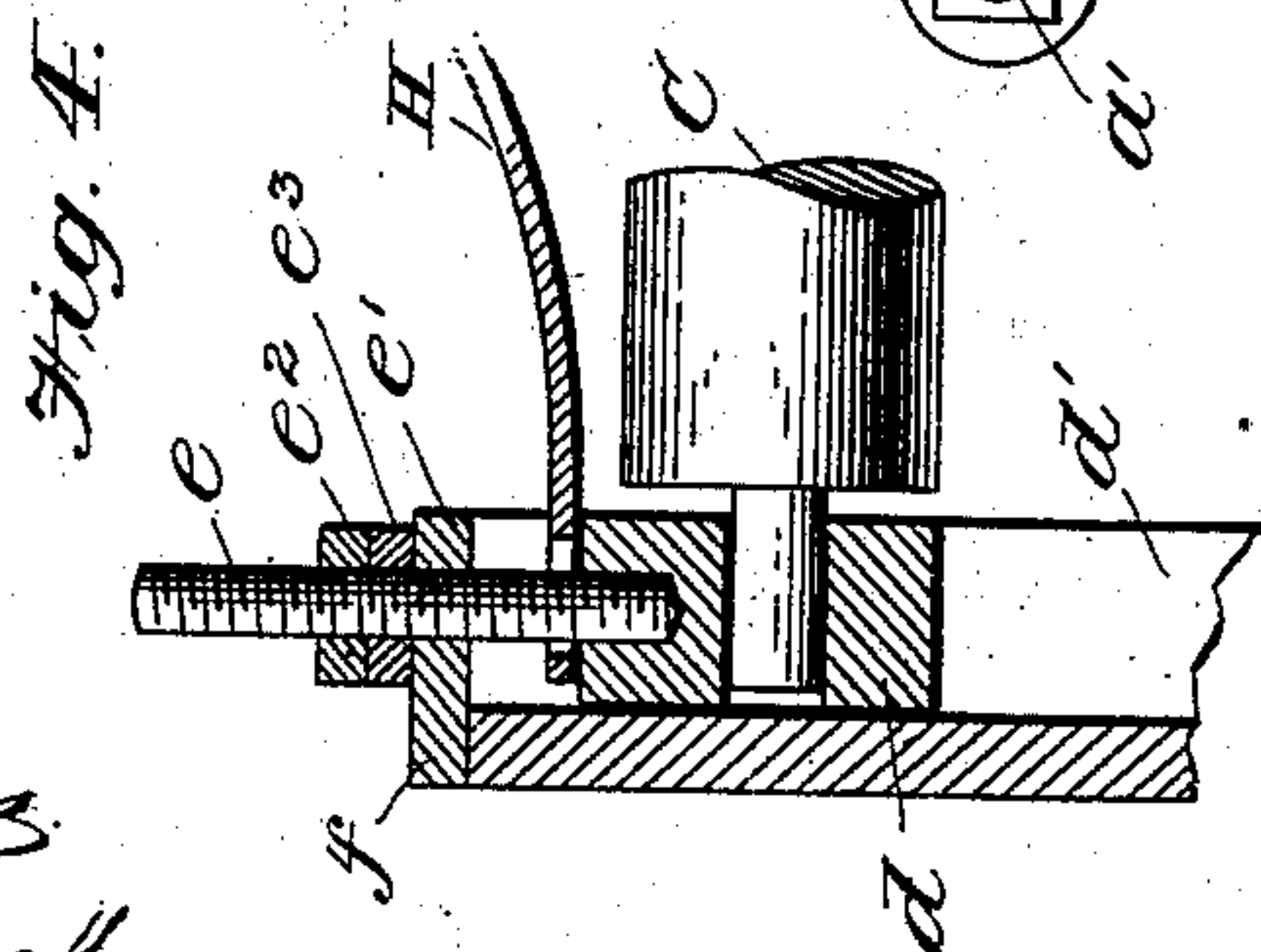
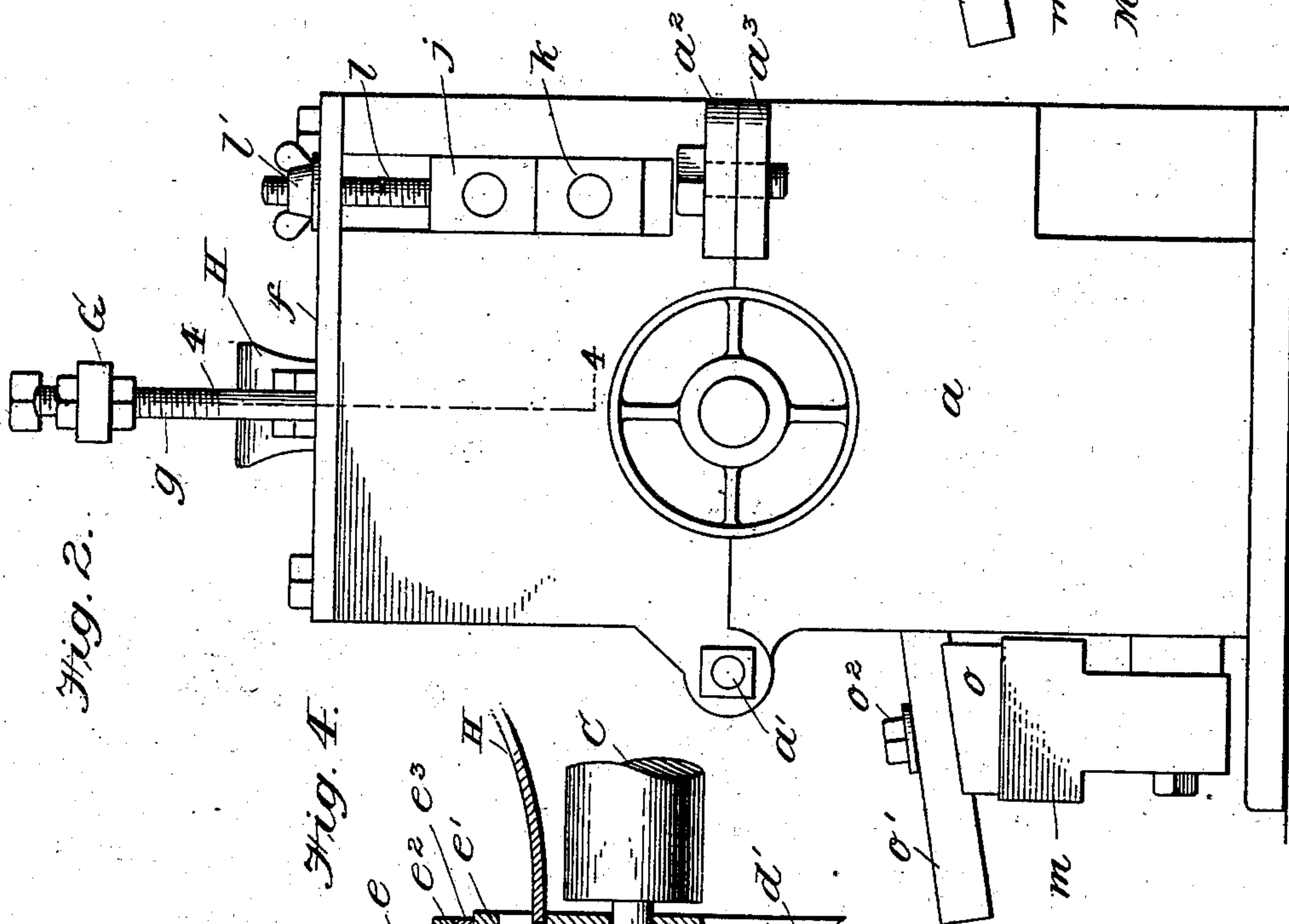
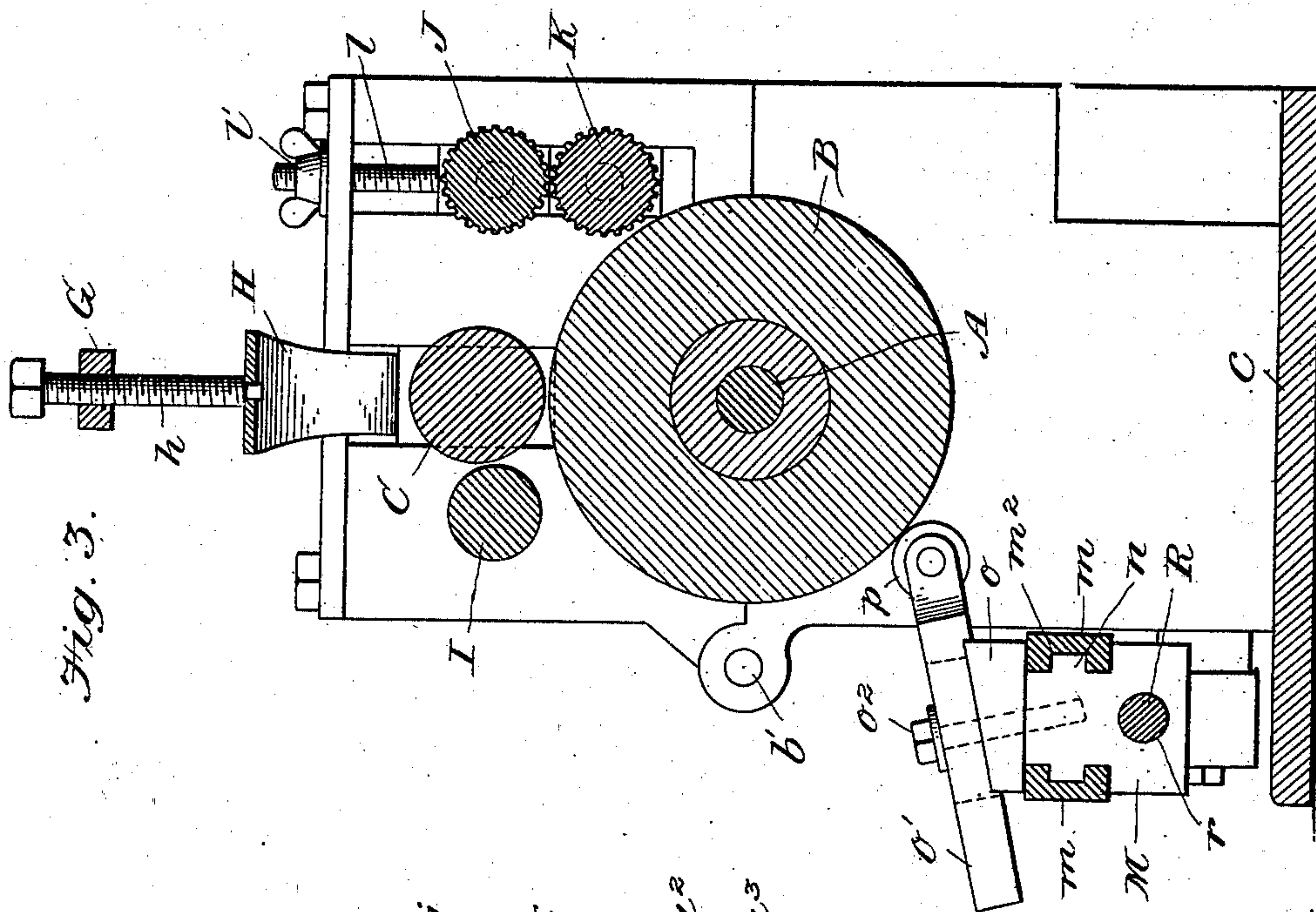
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2 Sheets—Sheet 2.



Witnesses.
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Chas. T. Bennett

Inventor,
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UNITED STATES PATENT OFFICE.

SALOVITZ LEVY, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR GRINDING QUILLS OF FEATHERS.

SPECIFICATION forming part of Letters Patent No. 664,564, dated December 25, 1900.

Application filed April 28, 1900. Serial No. 14,679. (No model.)

To all whom it may concern:

Be it known that I, SALOVITZ LEVY, a citizen of the United States, and a resident of the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Machines for Grinding the Quills of Feathers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in machines for grinding the quills of feathers; and the principal object of the same is to provide a machine which is simple in construction and which will rapidly grind the ribs of the quill of the feathers and remove all pith from the same, leaving only the bone portion of stems with the web or vanes running from each edge, thus rendering the said quill of the feathers soft and pliable and capable of withstanding considerable bending without the liability of breaking.

The invention consists in the construction and arrangement of the various parts, such as will be hereinafter fully set forth, and particularly pointed out in the claims made hereto.

In the accompanying drawings, Figure 1 is a front view of a machine constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a central sectional elevation taken about on the line 3 3 of Fig. 1, and Fig. 4 is a detail sectional view illustrating the yielding bearing of the presser-roll.

In carrying out my invention I provide a supporting-frame comprising the two side walls *a b*, connected at their lower ends to the base-plate *c*. Each of the side walls *a b* is made in two sections and hinged together at *a' b'* at their rear edges and having provided on their sides, near the forward edges, the projecting lugs *a² a³*, which are bolted together in the manner illustrated in Figs. 1 and 2.

Located about centrally in the side walls of the frame are bearings for the reception of the main driving-shaft *A*, upon which is mounted the grinding-roll *B*, which is centrally located between the two frames. On the projecting end of driving-shaft *A*, I provide a driving-pulley *A'*, which is connected by a suitable belt with the power-shaft.

Directly above the grinding-roll *B* is mounted a pressing-roll *C*, which is of much smaller diameter than the roller *B* and is mounted in the adjustable journal-boxes *d*, which are suspended in recesses *d'*, formed in the side walls of the frame. These boxes *d* are supported in a suspended position and adjusted by means of the threaded bolt *e*, which enters a threaded aperture in the upper end of each box and passes through an opening *e'*, formed in the top plate *f* of the frame. The lock-nuts *e² e³* are provided above the plate *f* for supporting and adjusting the bolt *e*. In each of the side frames of the machine I provide the vertical bolts *g*, which support on their upper ends a cross-bar *G*, the said bolts *g* carrying jam-nuts for supporting and locking the cross-bar. In the center of the said cross-bar I provide a threaded opening adapted for the reception of the screw *h*, which is provided with a shouldered lower end which fits into an aperture provided in the spring *H*. The spring *H* is bowed, as illustrated, and bears at each end upon the journal-boxes *d* of the presser-roll *C* for the purpose of keeping the said presser-roll in constant contact with the grinding-roll, or, in other words, for the purpose of keeping the quill during the operation of the machine in close contact with the grinding-roll, while at the same time allowing the said presser-roll to yield upwardly. Each end of the spring *H* is provided with an elongated opening through which the bolts *e* pass. The tension of the spring *H* may be increased or diminished by adjusting the screw *h*, carried by the bar *G*. In the rear of the presser-roll *C* is a guide-roll *I*, which is also journaled in the side frames of the machine and operates to guide the feathers and prevent them from curling upwardly as they pass away from the grinding-roll.

In front of the grinding-roll *B*, I provide a pair of corrugated feed-rolls *J K*, which are journaled in adjustable boxes *j k*, mounted in the side frame of the machine. These rolls are designed to feed the quills to the grinding-roll and to hold one end of them firmly while the grinding-roll is acting on the lower side of the quill. The screw-threaded bolt *l* is threaded into an aperture formed in the box *j*, while its upper end passes through the plate *f* and is provided with a thumb-nut *l'*,

by means of which the two feed-rolls J K may be properly adjusted.

In the rear of the machine, a short distance above the base-plate *c*, I provide a pair of
5 grooved rails *m*, supported at each end by the end plates *m'*, which are bolted to the end wall of the side frames. A sliding block M, having tongues *n* on each side adapted to fit in the grooves *m*², formed on the inner
10 face of each of the rails *m*, is provided, and on the top of this block is secured a tool-holder *o*, adapted to carry the shank *o'*, which is bolted to the tool-holder *o* and to the block M by means of the bolt *o*². The shank *o'* is
15 provided with a longitudinal slot through which the bolt *o*² passes and by means of which the said shank can be adjusted toward or from the grinding-roll B. The inner end of this shank *o'* carries the hardened cutting-
20 wheel *p*, which is mounted so as to revolve in the end of the said shank. A feed-screw R, journaled in the end plate *m*, is provided, which passes through a screw-threaded aperture *r*, provided in the sliding block M. On
25 one end of the feed-screw R, I provide a hand-wheel S, having a crank-handle *s*, by means of which the said feed-screw is revolved. It will be readily understood that when the feed-screw is revolved the block M will be
30 fed across the machine, and the cutting-tool *p* when properly adjusted will bear against the outer surface of the grinding-roll for the purposes of truing up the same when it has become uneven by constant usage.

35 In the operation of my machine the feathers are guided by the operator between the feed-rolls J K, which are driven rather slowly by means of the driving-pulley T, carried by the shaft of the upper roller J. This opera-
40 tion crimps or crushes the thick quill of the feather as it passes between the corrugated rolls and feeds the said quill between the grinding-roll B and the yielding-mounted presser-roll C, the said presser-roll tending to
45 keep the quill in close contact with the grinding-roll, which revolves very rapidly and grinds off the under side of the quill, removing everything, including the pith, with the exception of the bone which carries the web
50 or vane of the feather. The guide-roll I simply acts to prevent the feathers from curling up as they pass from between the rolls B C. The grinding-roll B will in a short time become uneven by operating against the rib of
55 the quill, which makes it necessary to pro-

vide means for truing the same several times during a week. This is accomplished by means of the sliding block carrying the hardened-steel tool *p*, which is fed across the surface of the roll by means of the feed-screw
60 R, heretofore described, this operation of course being carried out while the grinding-roll B is revolving. The presser-roll C can be adjusted by means of the lock-nuts *e*² *e*³, carried by the supporting-bolts *e*, and the
65 spring H serves to keep this roll in contact with the feathers as they pass through the machine and at the same time allows the said presser-roll to yield upwardly as the thicker portion of the quill passes under it. 70

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

1. In a quill-grinding machine, the combination with the supporting-frame, of a grinding-
75 roll journaled in said frame, a presser-roll, C, bearings for said presser-roll suspended in the machine-frame so as to be capable of moving upwardly, means for adjusting said suspended bearings so as to regulate the distance
80 between the presser-roll and the grinding-roll, a spring H, adapted to bear at each end on the suspended journal-bearings, means for adjusting the tension of the said spring, and a pair of feeding and crushing rolls ar-
85 ranged in front of the grinding and presser rolls located so as to hold the quills while the grinding-roll is operating to remove the pithy material from the bone of the quill, substantially as described. 90

2. The combination with the grinding-roll, B, of a presser-roll, C, mounted in movable bearings, vertically-disposed bolts, *e*, secured in said bearings and passing through aper-
95 tures provided in the supporting-frame, lock-nuts threaded on the bolts, *e*, above the frame-plate for supporting and adjusting said bolts, a bowed spring, H, adapted to bear at each end on the movable journal-boxes, a bar, G, supported on the frame above the spring, and
100 a bolt, *h*, threaded in the said bar and adapted to bear on the center of the spring, H, for the purposes substantially as described.

In witness whereof I have hereunto set my hand this 21st day of April, A. D. 1900.

SALOVITZ LEVY.

In presence of—

CHARLES H. SPECKMAN,
JNO. T. CROSS.