

(No Model.)

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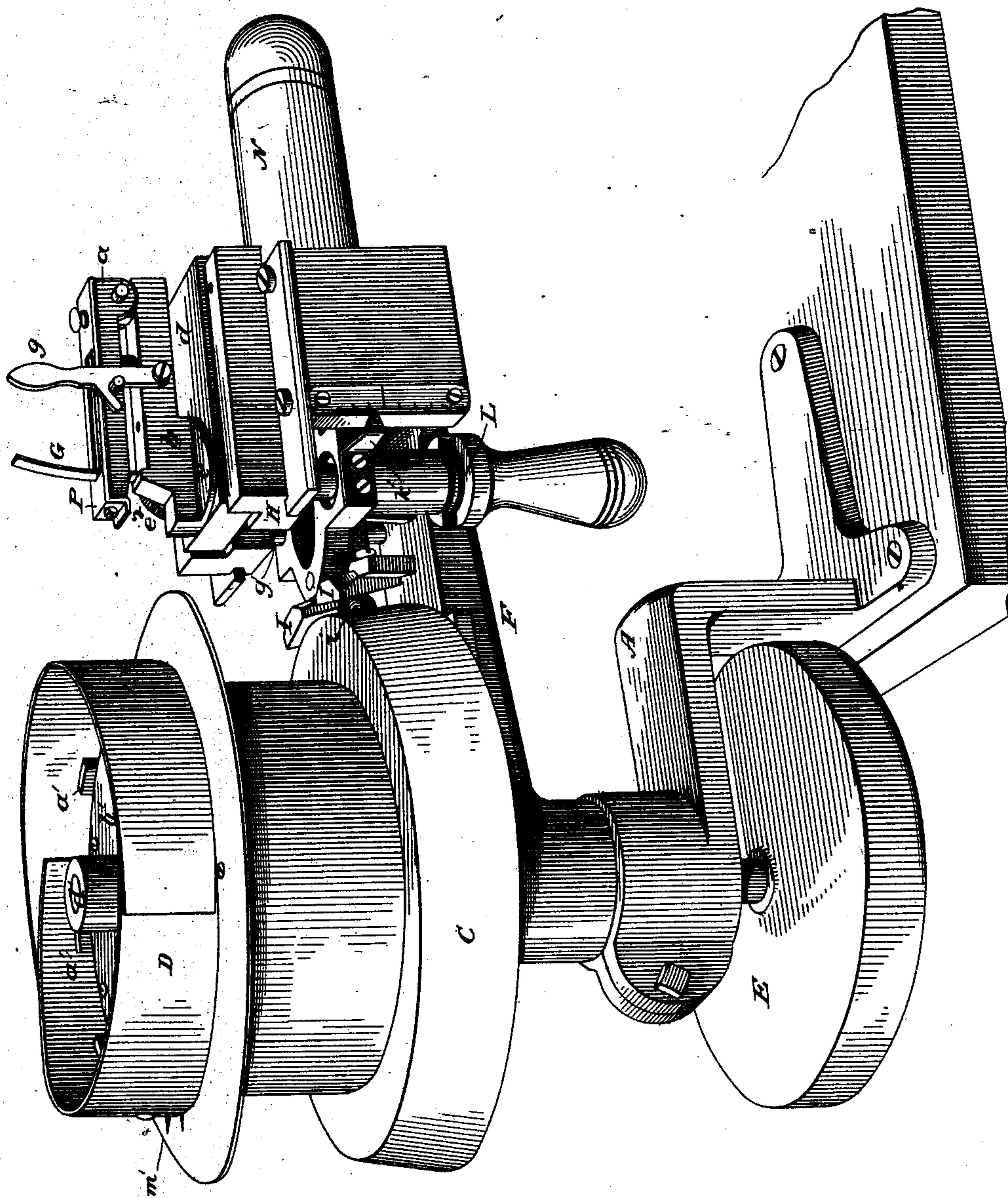
C. H. REID.

Hat Brim Trimming Machine.

No. 237,128.

Patented Feb. 1, 1881.

Fig. 1.



Attest:

R. P. Barnes.
A. B. Smith

Inventor:

Charles H. Reid
Per his atty
R. W. Smith.

(No Model.)

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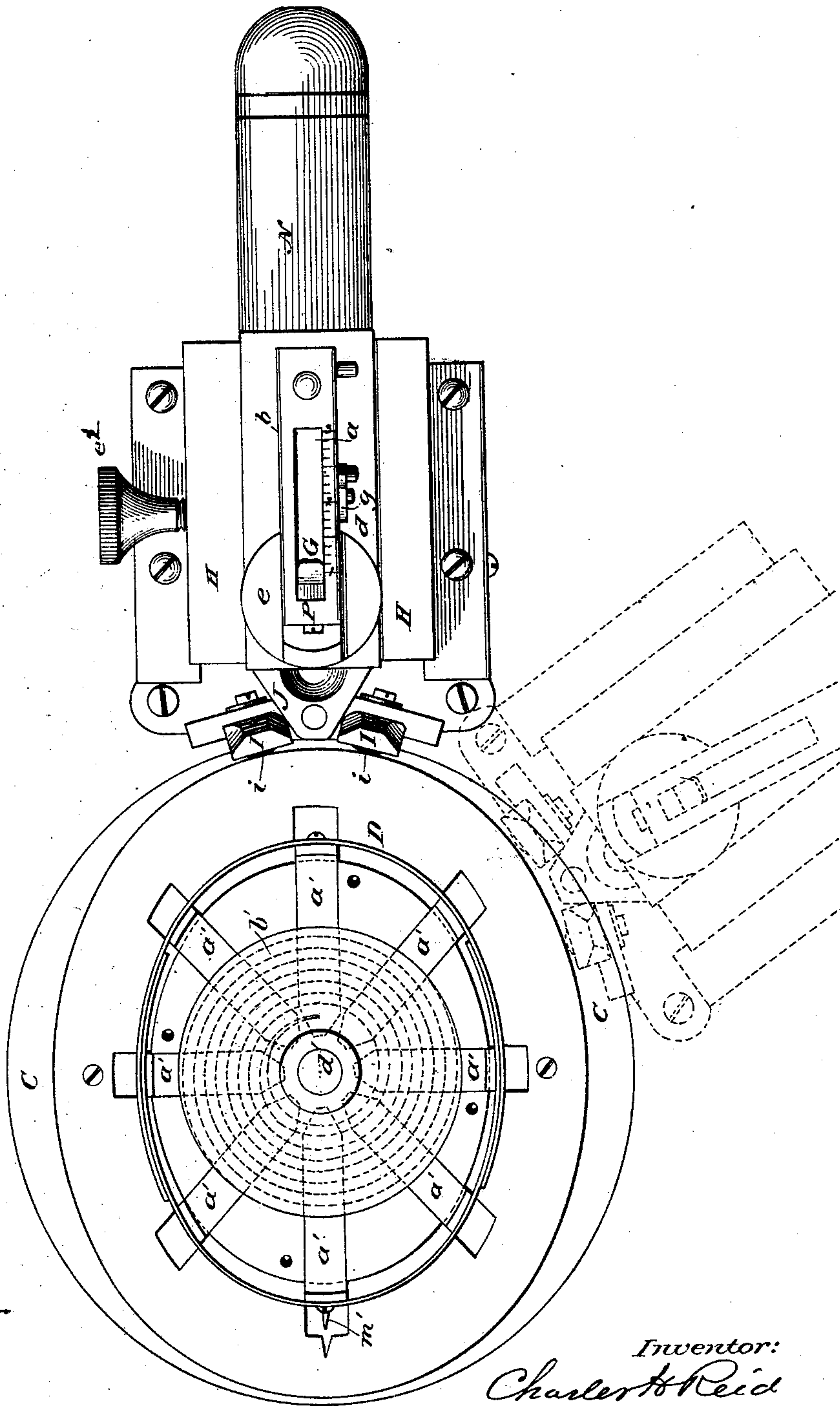
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Fig. 2.



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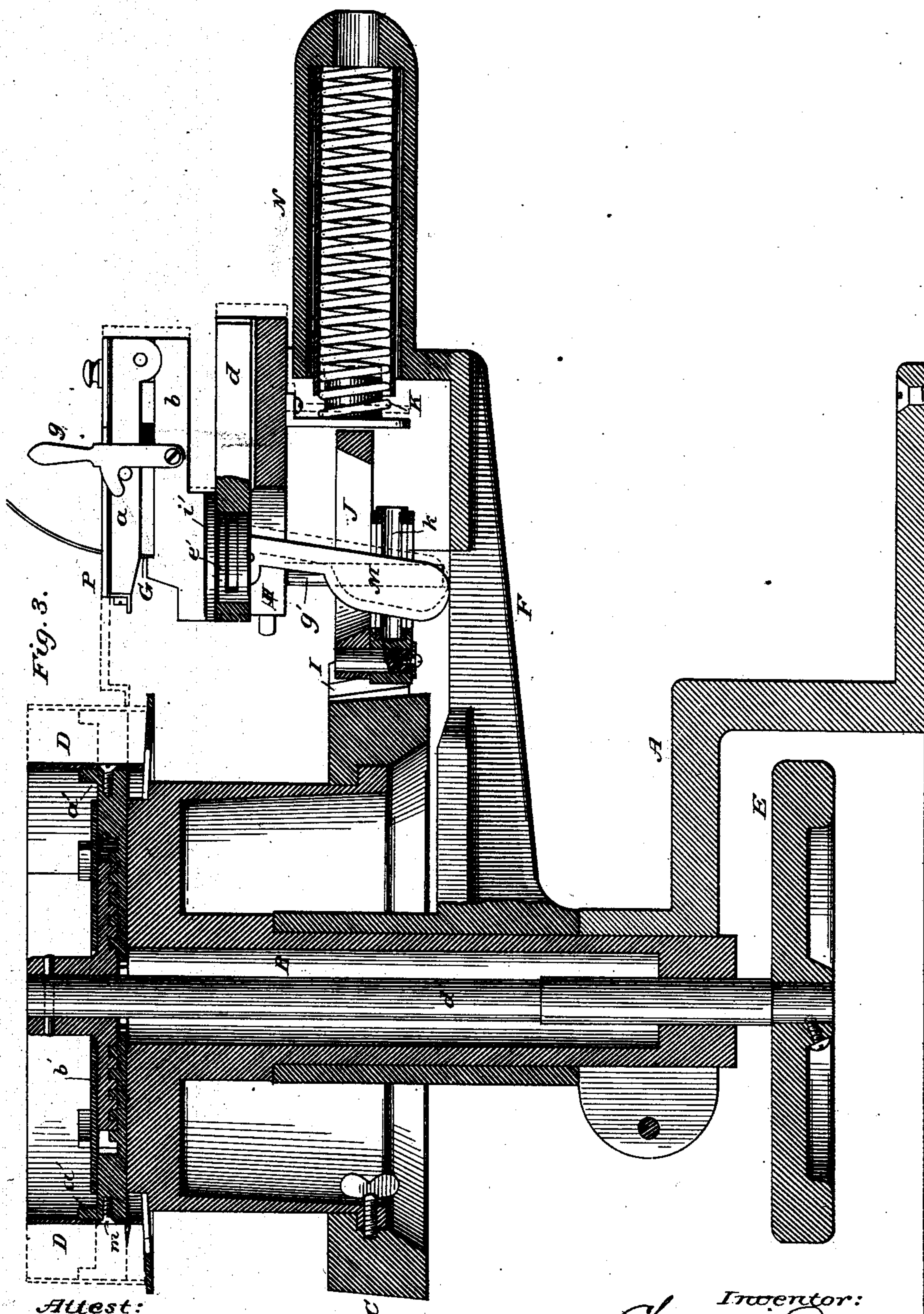


Fig. 3.

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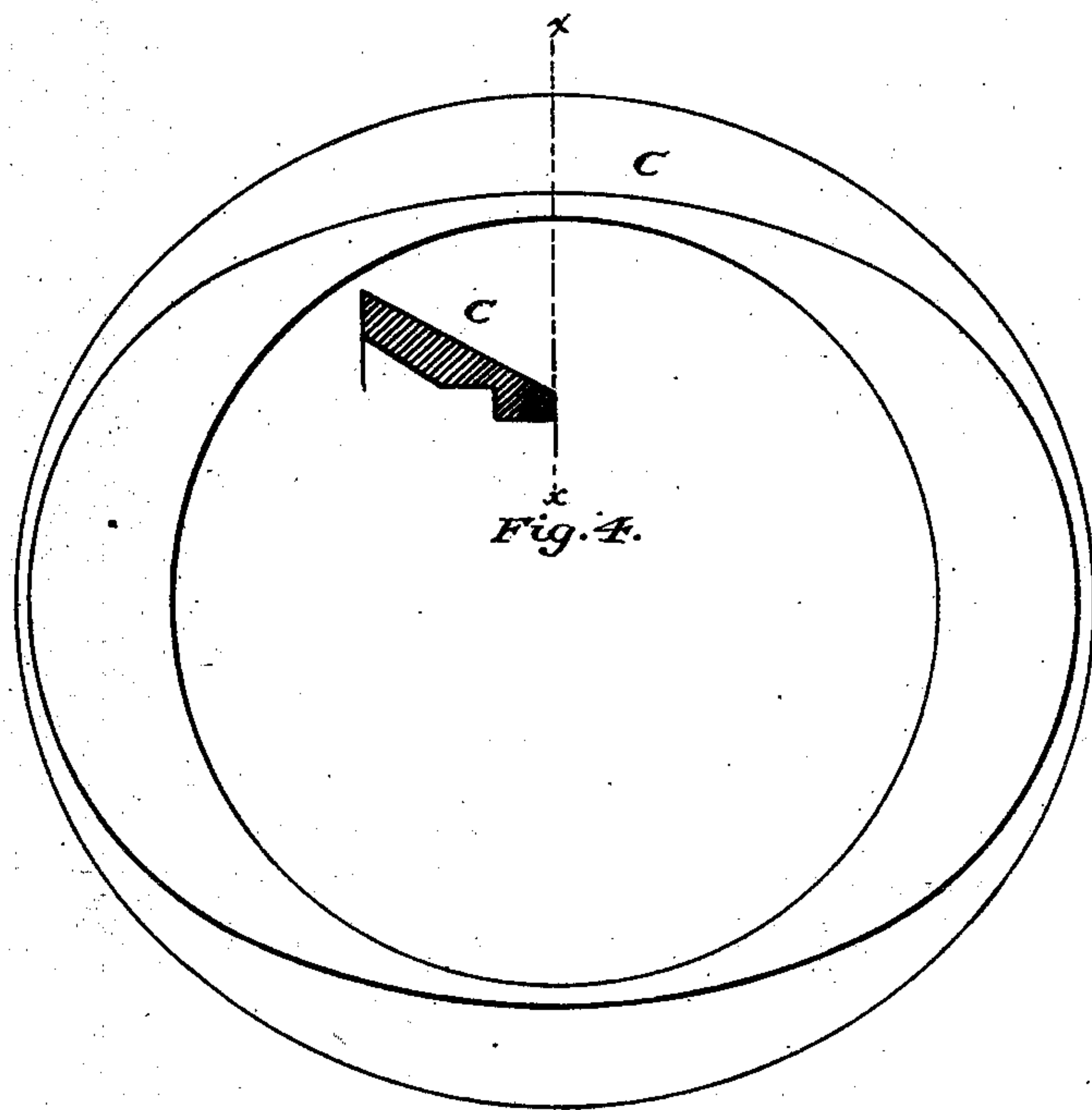


Fig. 4.

Fig. 5.

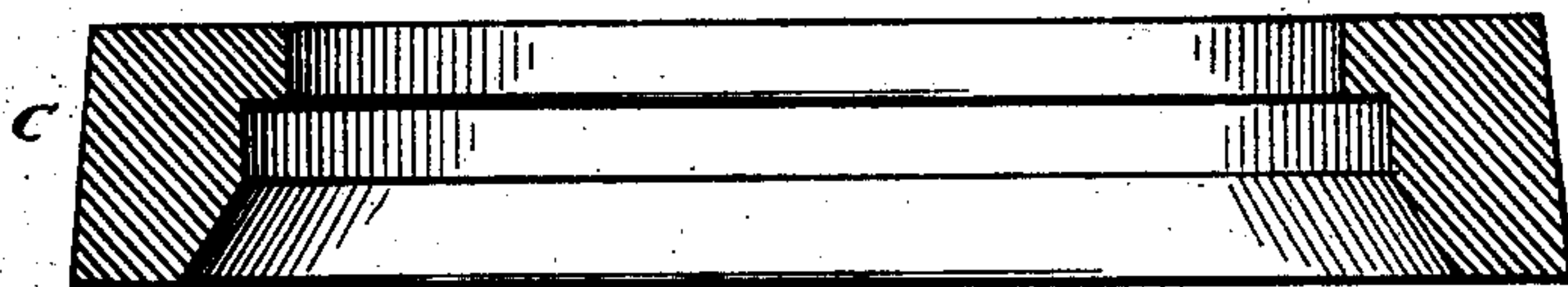
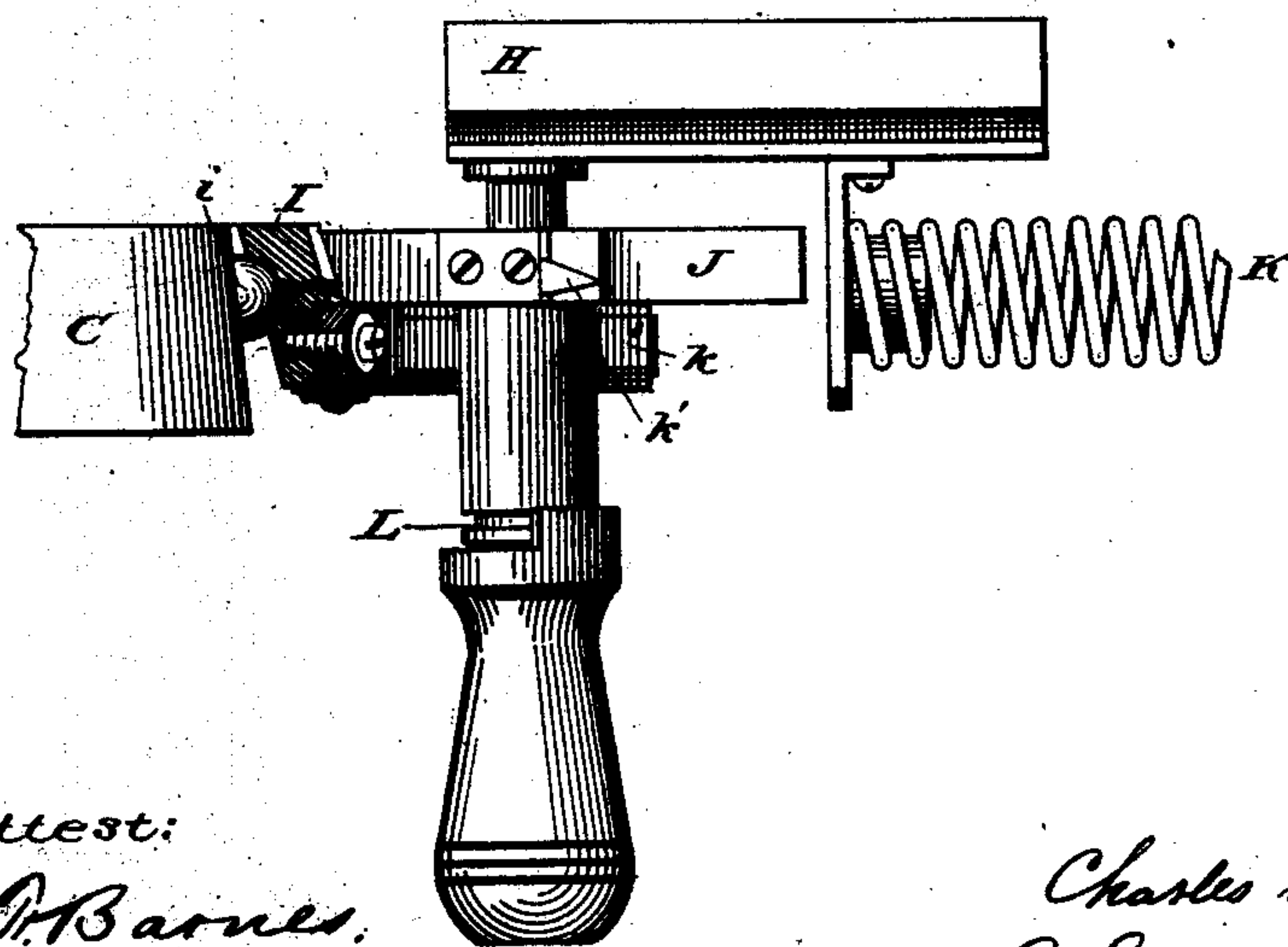


Fig. 6.



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(No Model.)

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C. H. REID.

Hat Brim Trimming Machine.

No. 237,128.

Patented Feb. 1, 1881.

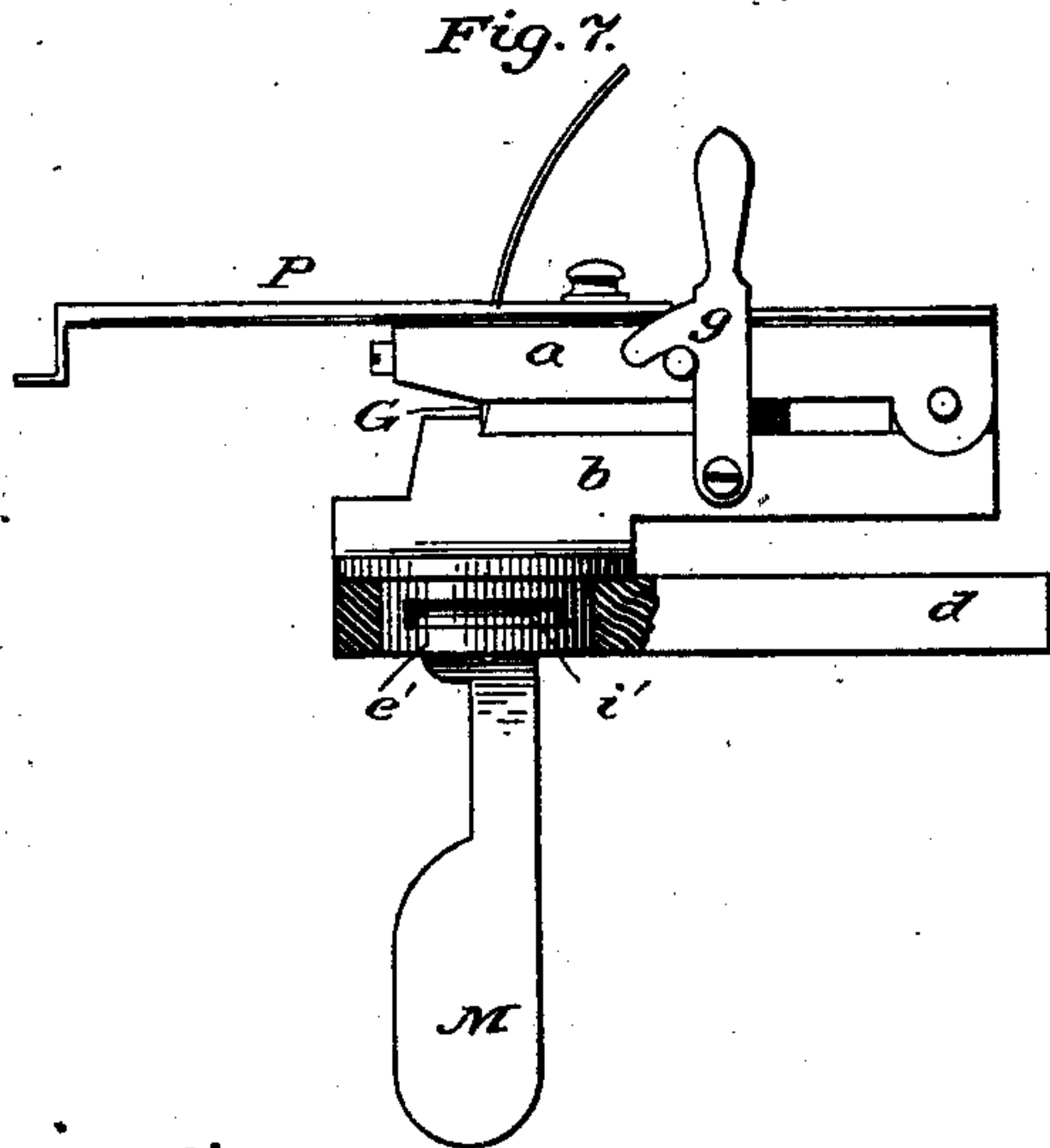


Fig. 8.

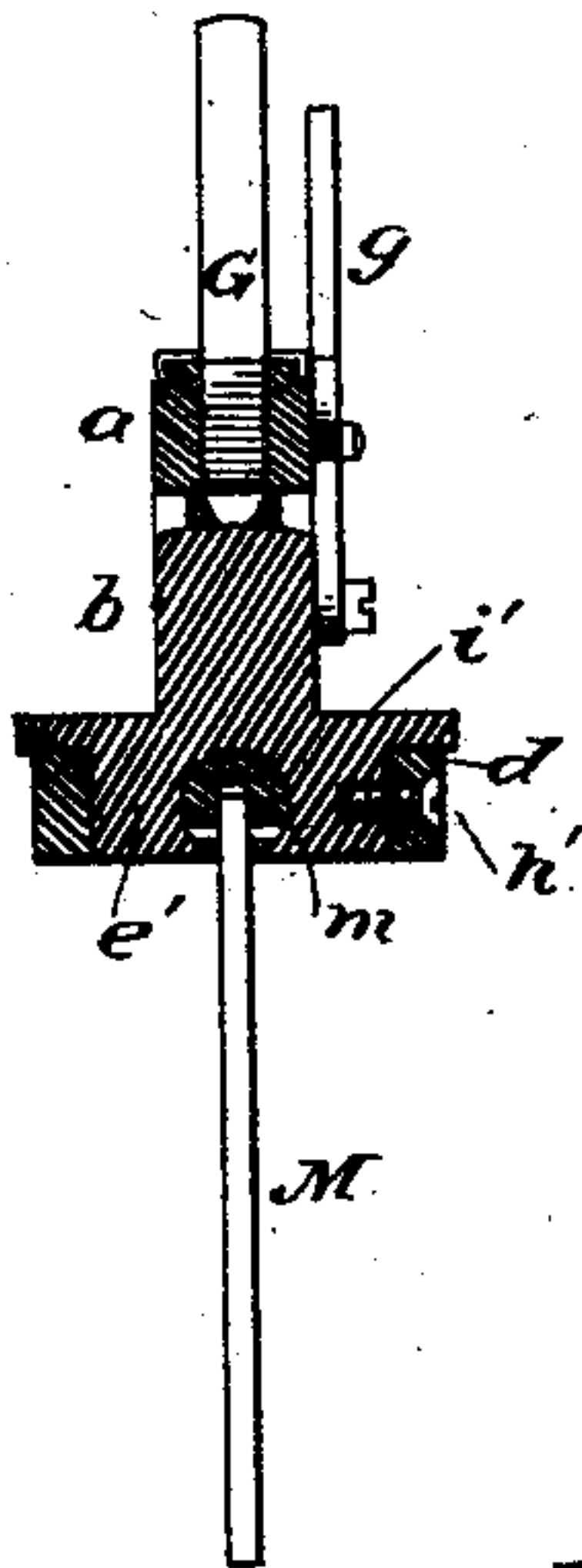


Fig. 9.

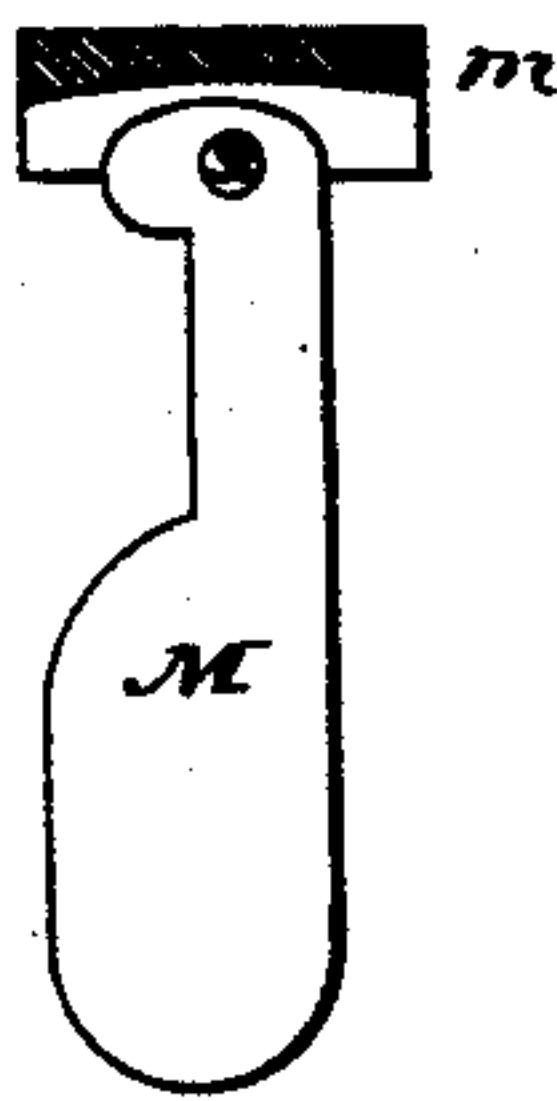
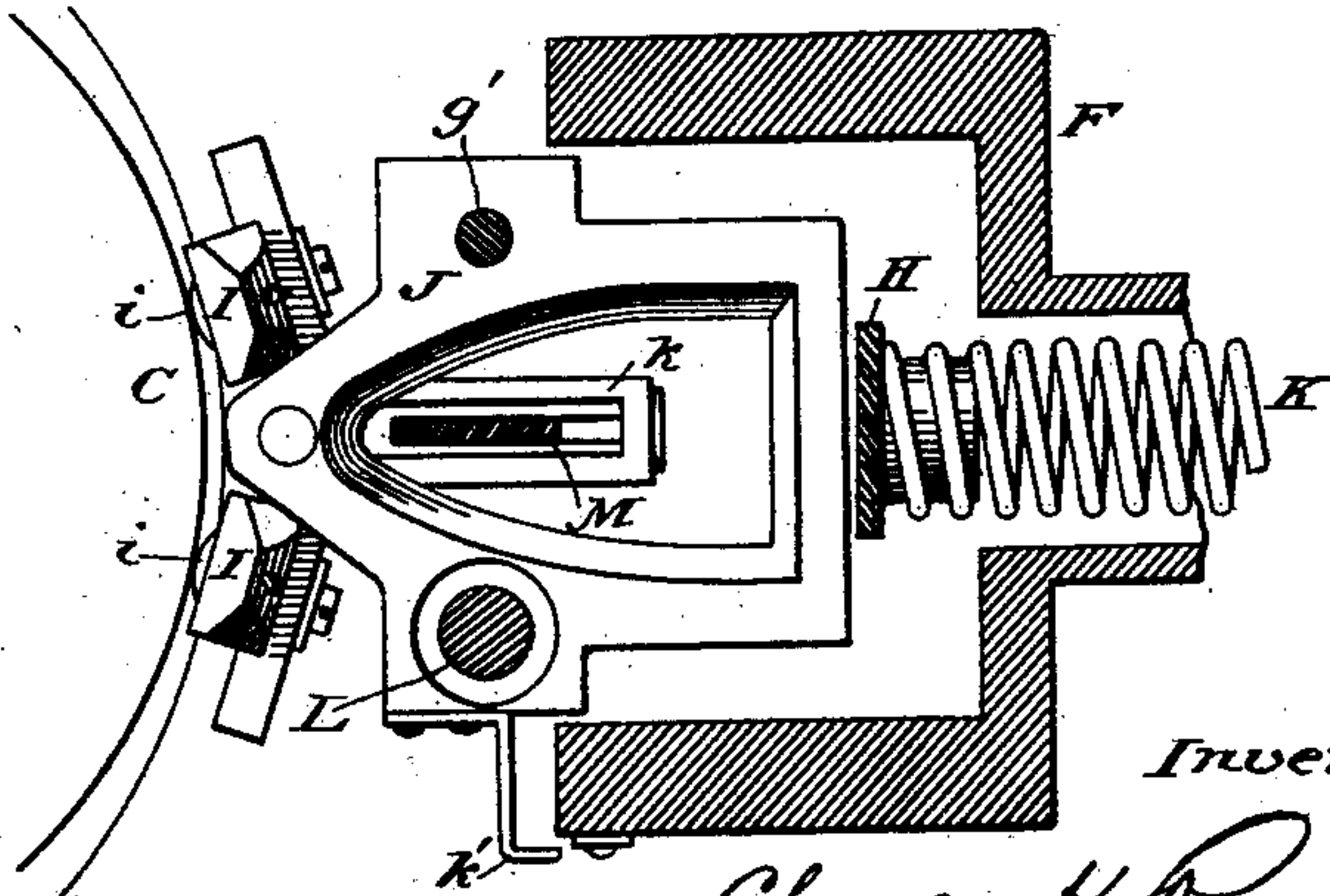


Fig. 10.



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UNITED STATES PATENT OFFICE.

CHARLES H. REID, OF DANBURY, CONNECTICUT.

HAT-BRIM-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 237,128, dated February 1, 1881.

Application filed October 8, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. REID, of Danbury, in the county of Fairfield, in the State of Connecticut, have invented a new and
5 useful Improvement in Machines for Trimming the Brims of Hats, and for other purposes; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings,
10 wherein—

Figure 1 is a perspective view of my machine. Fig. 2 is a plan of the same. Fig. 3 is a longitudinal section of the same. Fig. 4 is a plan of the former or guide. Fig. 5 is a ver-
15 tical section of the same longitudinally. Fig. 6 is a side elevation, showing the shoe on the guide. Fig. 7 is a side elevation of the cutter-head. Fig. 8 is a transverse section of the same. Fig. 9 is an elevation of the cutter
20 rudder or steerer. Fig. 10 is a plan of the shoe-carriage.

The object of my invention is, first, to trim or cut the brim of the hat at the proper distance from the body all around; second, to cut
25 it with the desired elliptical figure; third, to make the operative parts of the machine adjustable to a certain curve, and after that self-controlling as it traverses the hat-brim; and it consists in a templet or guide-plate the op-
30 erative surface of which is that of a truncated elliptical curve, and whereof the upper and lower bases present figures of different ellipticities, and a self-controlling shoe to traverse said templet, and an adjustable knife the an-
35 gular position whereof is controlled by said shoe and maintains always in a plane tangent to the curve which is being described, and a means for adjusting said shoe to traverse a higher or lower line on said conical templet,
40 and thereby impart a greater or less ellipticity to the cut.

That others may fully understand my invention, I will particularly describe it.

A is a bracket which supports my machine.
45 It may be fastened to any proper support.

B is the supporting-shaft or stud mounted upon said bracket.

C is the templet or guide-plate, the edge or

operative surface of which is that of an elliptical curve, horizontal sections of which will
50 present figures of different ellipticities, as indicated in Figs. 2 and 4, which present the top and bottom outlines of said plate.

D is the clamp whereon the hat is placed and held while the brim is being cut. This clamp
55 consists of a series of radial arms, *a'*, engaged in a proper way with a rotating scroll-wheel, *b'*, whereby they may be simultaneously projected or withdrawn and two or more elastic
60 steel plates attached to or engaged with the outer extremities of two of said arms, so that when the latter are projected the said steel plates will conform to the figure of the hat-body and by expansion securely hold it. The
65 scroll-wheel, or its substitute, may be operated by a central shaft or spindle, *d'*, and a hand-wheel, E, below the bracket.

F is a swinging arm mounted upon the shaft B, and free to rotate thereon and carry the
70 knife G around the hat. The knife G is mounted in a head, *a*, which is hinged at the back end to the carrier *b*, so that it may be thrown back during adjustment of the parts. The carrier *b* is mounted upon the slide *d*, with
75 a circular bearing, *e'*, and is capable of partial rotation thereon as it is controlled to maintain its plane of cut tangential to the curve of the cut. The stop-screw *h'* in the slot *i'* pre-
80 vents excess of motion or displacement of the head *b*. The slide *d* is adjustable back and forth on the sliding head H to set the knife at the proper distance from the body, and is held
85 at the proper point by a set-screw, *e*². A clamp, *g*, holds the knife down while it is in action.

The shoe I has two points of bearing upon the templet C, and these are provided with
90 hemispherical bearers *i i*, which rest in sockets in the shoe, and rotate therein in any direction to conform to the varying inclinations of the surface of the templet. They may be held in place by a flexible cord, as shown. The shoe I is pivoted to the extremity of a
95 slide, J, and is provided with a slotted extension, *k*, which vibrates as the shoe adjusts itself to the surface of the templet.

The slide J may be moved up and down upon vertical guides g' , which are themselves attached to the sliding head H, so that by adjusting said slide J to the proper point on the
 5 templet to secure the desired curve of cut, the sliding head H will move out and in as the shoe moves over surfaces varying in distance from the cutter. A spring, K, causes the forward movement of the sliding head H.
 10 The vertical adjustment of the shoe may be effected by the screw L.

An arm, M, pivoted to the head b , projects downward therefrom and enters the slit in the extension-piece k of the shoe I, so that as the
 15 latter vibrates said head b is rotated to the same extent, and as the shoe will always maintain a position tangent to the curve of the templet the knife G will be always maintained in a corresponding position.

In a machine operating a cutting-blade and causing said blade to follow an irregular line it is necessary to obviate all irregularities of resistance, because the cutting-blade tends
 20 strongly to follow a straight line and uniformly resists all changes of direction. A uniform resistance in the knife, coupled with variable application of power to the knife, will cause a corresponding inequality of action in the knife.
 25 Such a variable application of power will occur if any part of the mechanism immediately connected with the knife becomes cramped in its movement.

To obviate all liability to cramping, the arm M is pivoted in a longitudinal slot in a cylindrical bearing, m , which is placed in a corresponding horizontal and longitudinal seat
 35 made in the bearing e' . The arm M is therefore capable of swinging on its transverse pivot, and also of a lateral vibration on the bearing m , and is therefore capable of yielding in any direction which may be compounded of these two motions. In like manner the
 40 extension k consists of a cylindrical piece or bolt seated in a corresponding socket in the shoe I, and having a longitudinal slot to receive the arm M, so that said part k may be snugly fitted to said arm M, but may also yield if the carriage d and shoe I be out of line with each other.

50 The gage-slide P is provided with graduations, and serves to indicate the position of the knife to cut any desired width of brim.

The indicator k' and the corresponding scale on the frame enable the operator to reset the
 55 machine to cut the same curvature when, for any reason, its adjustment has been disturbed.

The gage-point m' penetrates the hat and prevents it from moving upon the clamp D.

60 The templet or guide C is made easily separable from the remainder of the machine, so that it may be removed and a new templet substituted.

N is the handle by which the arm F is caused to rotate.

Having described my invention, what I claim 65 as new is—

1. A templet, C, whose operative surface is that of a truncated elliptical cone whose upper and lower bases are of different ellipticities, combined with a shoe having two points of
 70 bearing upon said templet and an adjustable knife whose plane of cut is controlled by said shoe, substantially for the purpose set forth.

2. The shoe I, pivoted to the slide J, combined with two hemispherical bearers, i , in
 75 corresponding sockets in said shoe, whereby said bearers are self-adjusting to the variations of surface over which they traverse.

3. The pivoted shoe I, pivoted to the slide J, and provided with the slotted extension k ,
 80 combined with the knife G and pivoted head b , provided with the arm M, whereby the vibrations of the shoe are communicated to the knife, as set forth.

4. The templet C and shoe I, mounted on the
 85 slide J and provided with the slot k in the self-adjusting cylinder, as described, combined with the slide H and the arm M, pivoted in the cylindrical bearing m , as set forth.

5. An elliptical templet, C, and a shoe provided with two points of contact with said
 95 templet, so that the angular position of said shoe will bear a constant relation to the tangent of the curve of the templet between said points of contact, combined with a knife-carriage and knife controlled by said shoe to
 95 cause said knife-blade to maintain a constant position tangent to the curve of the ellipse described.

6. A central stud, B, mounted at its base
 100 upon some proper support, and provided at its head with an expansible clamp to hold the hat, and an elliptical templet, C, combined with a swinging arm, F, which has its bearing on the stud B, and a shoe mounted on said
 105 arm and traversing the edge of said templet, and a knife-carriage, also carried by said arm, but controlled by said shoe to cut the hat-brim with an elliptical curve corresponding to the curve of the templet, as set forth. 110

7. A hat-clamp composed of a scroll-wheel, b' , and radial arms a' in engagement therewith, combined with two or more elastic plates,
 115 D, each fastened at its middle to one of said arms to form an expansible flexible elliptic clamp to hold a hat, as set forth.

8. A knife-block, a , hinged at one end to a pivoted knife-carriage, b , and provided with a clamp, g , combined with an adjustable block,
 120 d , mounted on a slide, H, whereby said knife-carriage is advanced, and a gage, P, and set-screw, whereby the proper adjustments are obtained and maintained.

9. A templet, C, the upper and lower bases whereof are of different ellipticities, and a ver-
 125 tically-adjustable shoe, I, adapted to traverse said templet, and a carriage and knife controlled by said shoe, combined with mechan-

ism whereby said shoe may be vertically adjusted to cause it to traverse a line of preferred ellipticity, substantially as set forth.

10. A hat-trimming machine composed, essentially, of a hat-clamp, D, and a conical templet, C, as described, mounted upon a suitable shaft, combined with an arm, F, mounted upon said shaft and capable of rotation around

it, and a vertically-adjustable self-regulating shoe traversing said templet, and an adjustable knife, which, after adjustment, is controlled by said shoe, as set forth.

CHAS. H. REID.

Witnesses:

W. B. BARTRAM,
JAMES E. WALSH.