No. 639,233. Patented Dec. 19, 1899.

# T. F. HART.

## LEATHER SNIPPING MACHINE.

(Application filed Mar. 14, 1899.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

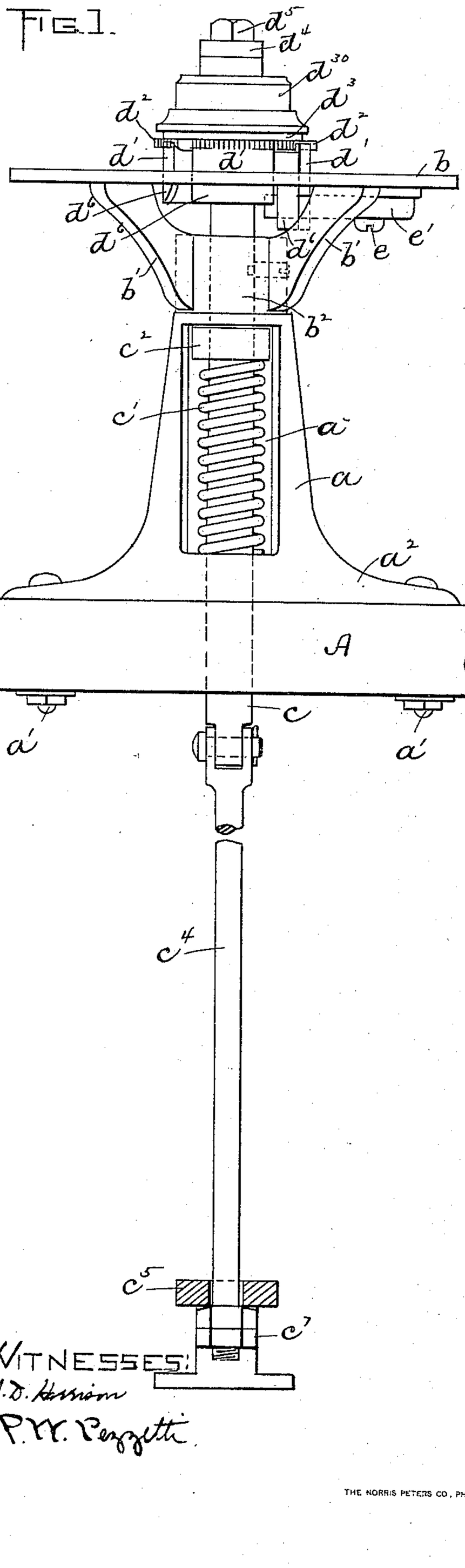
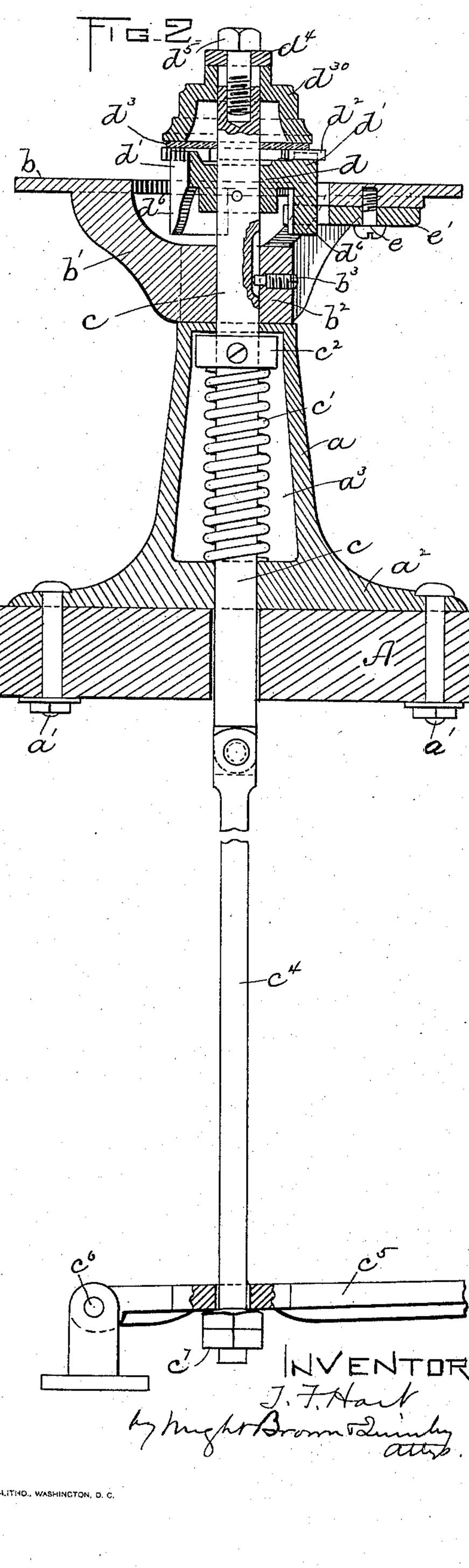



FIG. 2.

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## LEATHER SNIPPING MACHINE.

(Application filed Mar. 14, 1899.)

(No Model.) 2 Sheets—Sheet 2.

FIG. 3.

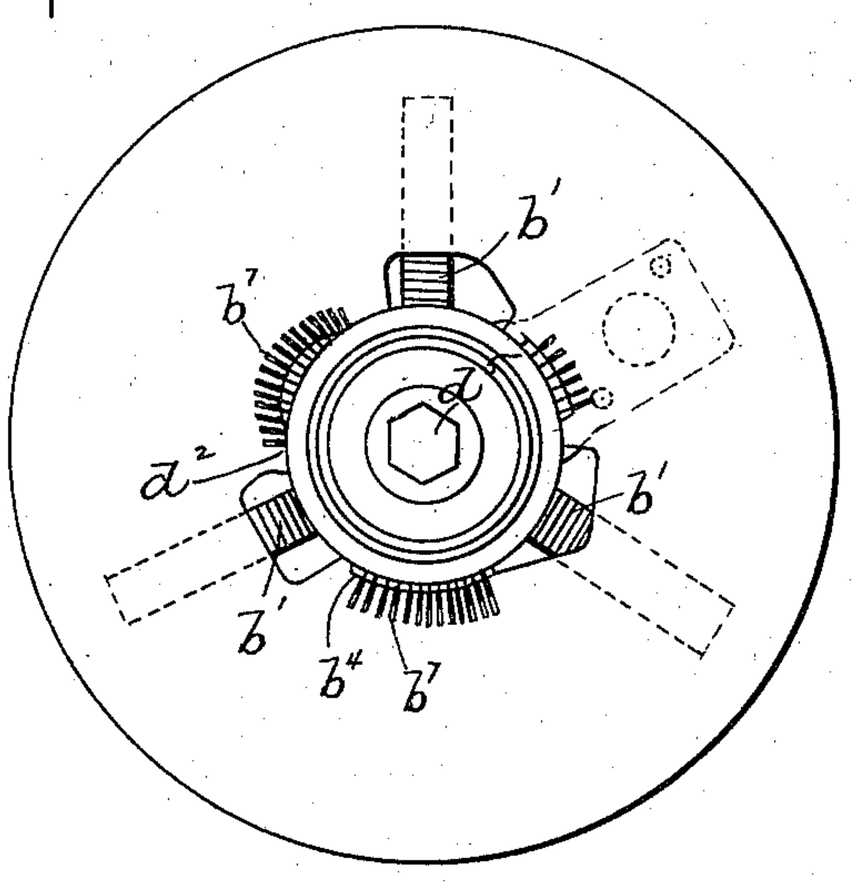



FIG. 4.

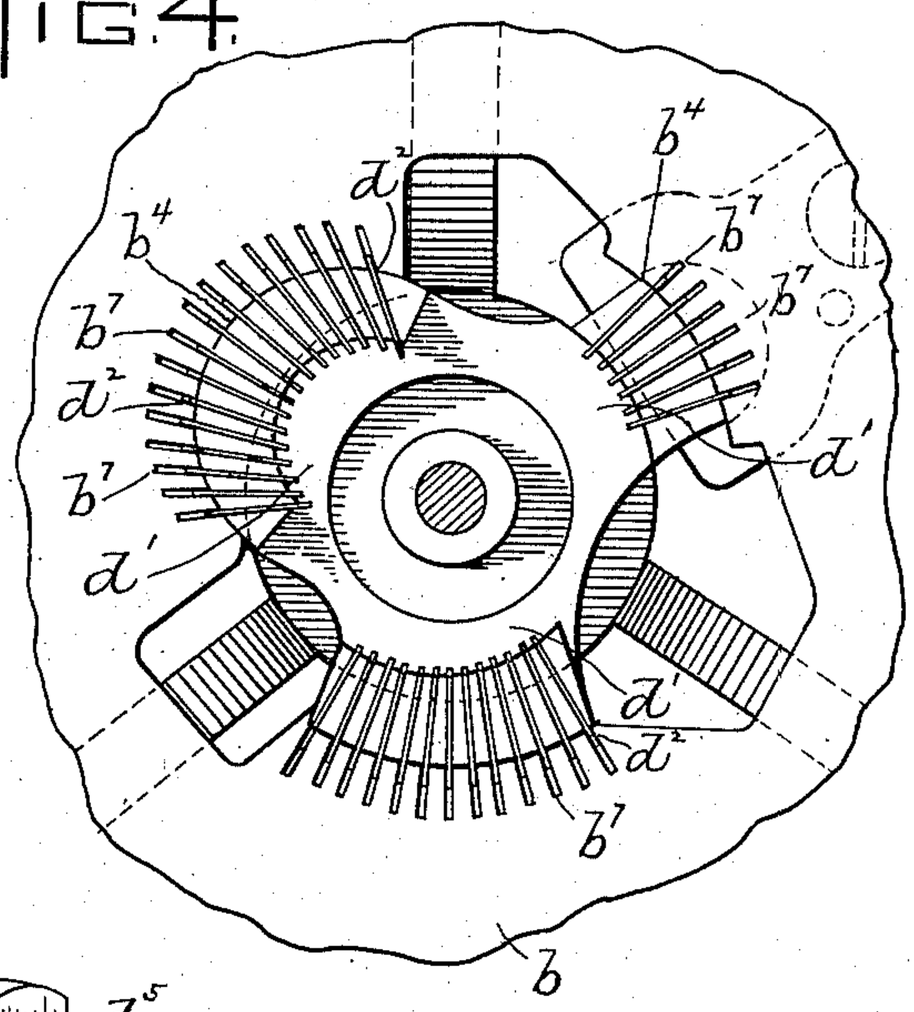



FIG. 5

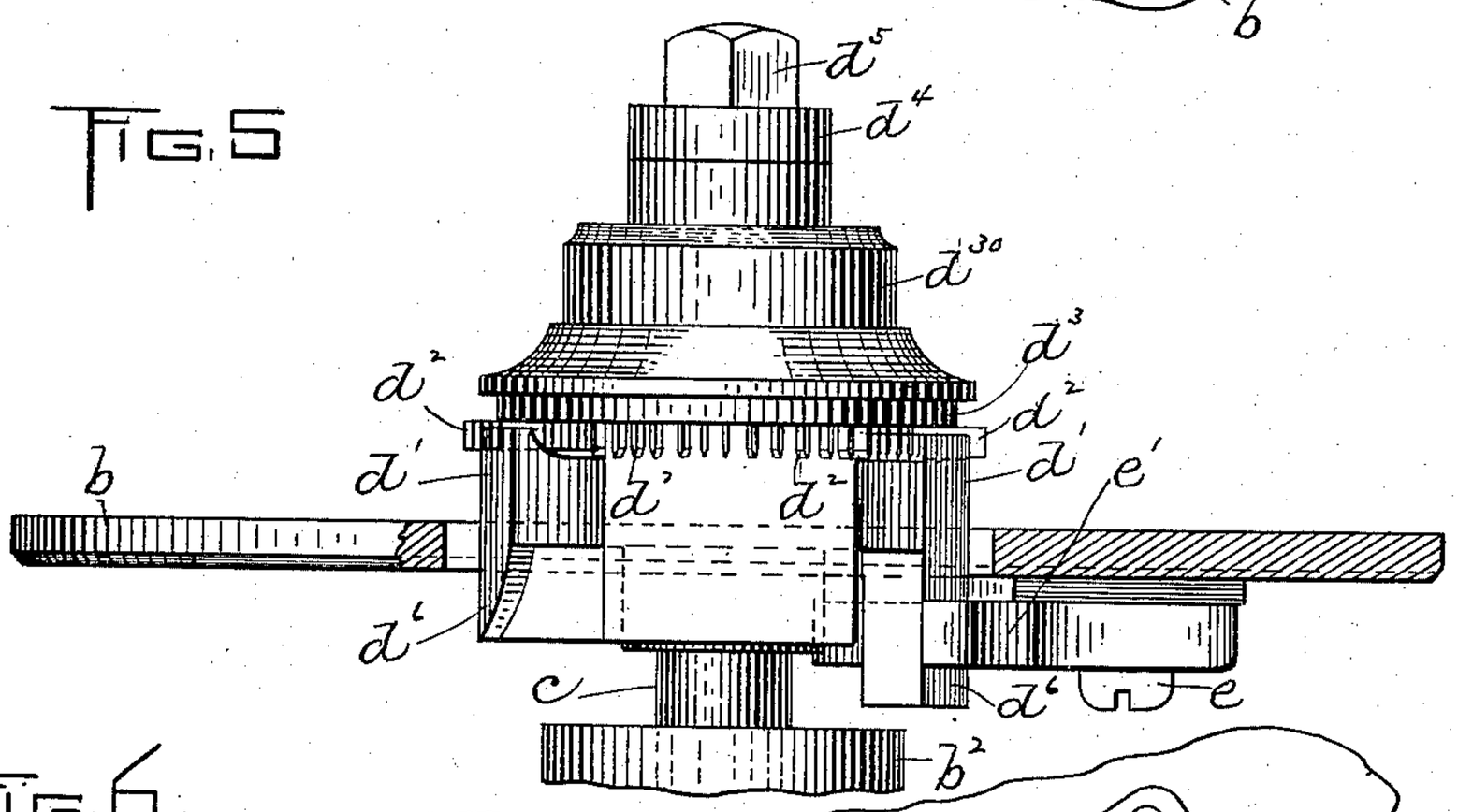
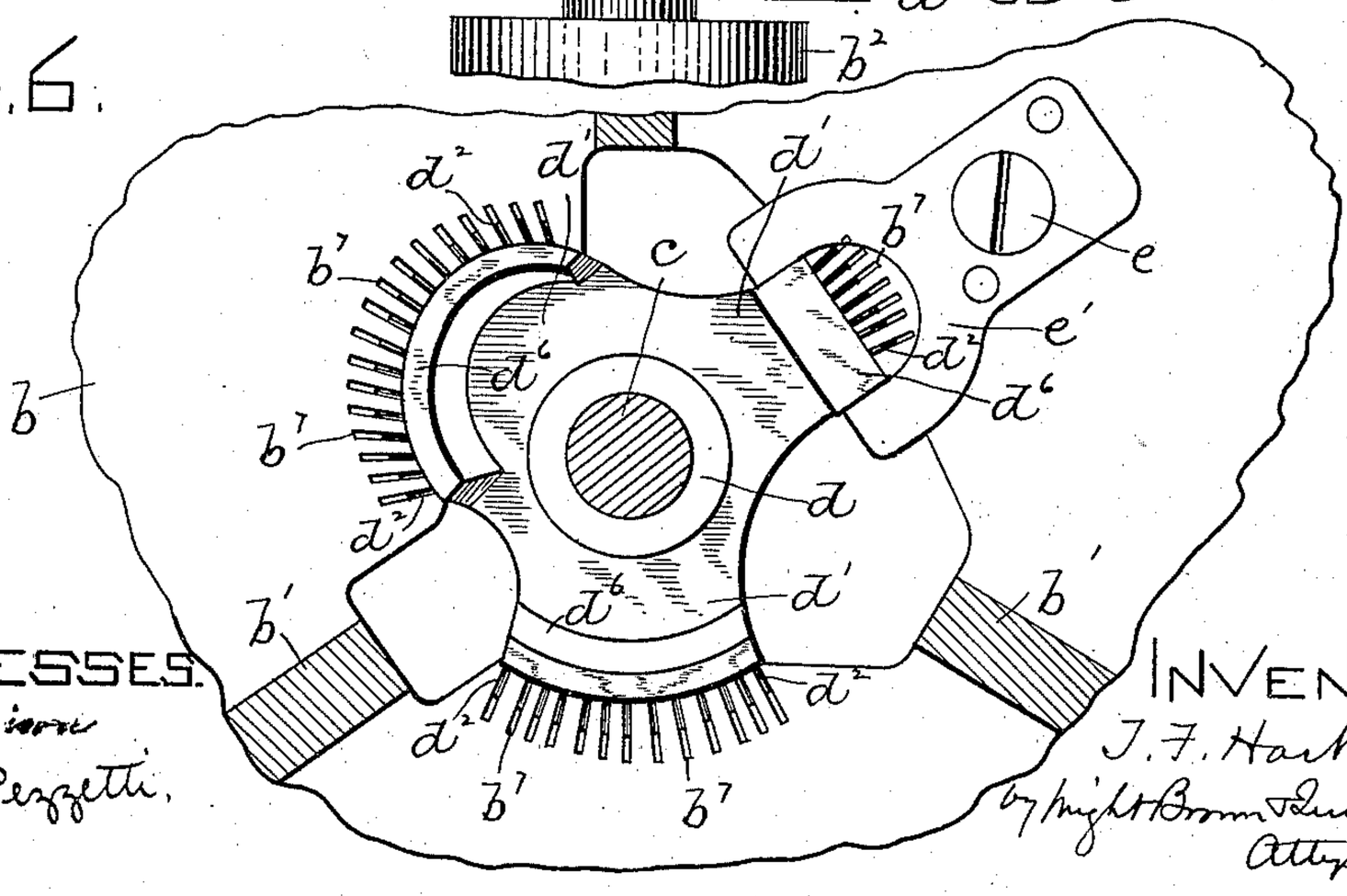



FIG. 6.

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# UNITED STATES PATENT OFFICE.

THOMAS F. HART, OF LYNN, MASSACHUSETTS.

## LEATHER-SNIPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 639,233, dated December 19, 1899.

Application filed March 14, 1899. Serial No. 709,018. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS F. HART, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Leather-Snipping Machines, of which the following is a specification.

This invention has relation to leather-snipping machines—that is, machines for snipping the edges of a foxing or other part of a shoe-upper prior to its being folded. Various portions of the upper are snipped preparatory to folding, and inasmuch as the contour of the edges varies it has been heretofore necessary to provide a machine for each part. This has of course been expensive for shoe manufacturers, and hence the object of the present invention is to provide a machine which may be employed for snipping the various parts of uppers or for the edges of a single part of an upper.

To this end the invention consists of a machine, such as that illustrated upon the drawings and to be subsequently described, in which there is a cutter-head provided with a plurality of series of cutters and a work-supporting table adapted to receive said cutters, said head and said table being movable about a common center to present that series of cutters which it is desired to use.

The invention also consists of a leather-snipping machine possessing certain other features of construction and relative arrangement of parts which I have found highly desirable and useful, all as will be subsequently explained.

Reference is to be had to the accompanying drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Referring to the drawings, Figure 1 represents in side elevation a machine embodying my invention. Fig. 2 represents a vertical section through the same. Fig. 3 represents a plan view of the machine. Fig. 4 represents a cutter-head with the securing ring or washer removed. Fig. 5 represents a front elevation of the head with the supporting-table in section. Fig. 6 represents a view of the work-table and head looking from below.

Referring to the drawings, which show one embodiment of the invention which I have selected for the purpose of illustration, $a$ indicates a standard which may be secured to a table A by bolts $a'$ $a'$, passing through the base $a^2$, as shown. The said standard is hollow, as indicated, being cut away at $a^3$ to expose its interior.

The work-table $b$ is connected by arms $b'$ to a sleeve $b^2$, which rests upon the upper end of the standard, said table, as shown in Fig. 3, being ring-like in form, so as to receive the cutter-head, which passes through it. The table $b$, the arms $b'$, and the sleeve $b^2$ may be all cast in one piece, as indicated, or else the table may be formed separately and attached to the arms $b'$, if found desirable.

The plunger $c$ is passed upward through the table A and through the standard $a$ and the sleeve $b$ to receive the cutter-head which I shall subsequently describe, and by examination of Fig. 2 it will be seen that the plunger and the work-table, which is rigidly secured thereto by a screw $b^3$, may be rotated freely with relation to the standard. A spring $c'$ is placed about the plunger, its lower end bearing against the lower portion of the standard and its upper end bearing against a collar $c^2$, rigidly connected to the plunger $c$ by a screw $c^3$. The lower end of the plunger is connected by a link or connecting rod $c^4$ with a foot-lever $c^5$, fulcrumed at $c^6$ below the table, and although I have shown the said connecting-rod as being connected to the plunger $c$ in such manner as to rotate therewith it is evident that I may place a swiveled joint between them. In the present instance lock-nuts $c^7$ are placed on the end of the connecting-rod $c^4$, which projects through the lever $c^5$, so that the said rod is free to rotate relatively to the latter.

The cutter-head consists of a collar $d$, having three projecting arms $d'$ to receive the cutters $d^2$, which are placed in convergent grooves in the upper surface of said arms, as clearly shown in Fig. 4. It will be observed

that the outer ends of the arms are curved, the curves being struck from different centers and with radii of different lengths, so that the knives or cutters are arranged to snip different parts of an upper, the knives being held in place by a disk $d^3$, of rawhide, which bears directly against them to hold them in their grooves. A flanged ring $d^{30}$ is placed on the end of the plunger $c$ and held by a washer $d^4$, bearing against the end of the plunger-ring, and a screw $d^5$, which is passed through the washer into the internally-threaded end of the plunger. The said screw operates to bind the parts securely together and to force the leather washer firmly against the knives to hold them against individual movement.

I have stated that the washer $d^3$ is formed of rawhide, and although I find that material to be well adapted to secure the knives in place by reason of its yielding to accommodate knives of different widths at the same time other material may be employed, if found desirable.

The ring-like work-table $b$ is formed with inner edges $b^4$, which closely conform to the edges of the arms $d'$, and in the table are grooves or slits $b^7$ to receive the knives $d^2$. The arms $d'$ of the cutter-head are provided with depending portions $d^6$, one of which is utilized to form a guide to slidingly connect the cutter-head and the work-table to prevent the rotation of one relatively to the other. On the under side of the work-table is secured, by a screw $e$, a bar $e'$, having a bifurcated end which extends around one of the guides $d^6$, as indicated in Figs. 2 and 6, and relatively to which the said arm $d'$ is adapted to slide.

The spring $c'$ normally holds the cutter-head raised in the position shown in Fig. 2; but by depressing the foot-lever $c^5$ the plunger is drawn downward to carry the cutters $d'$ through the slits in the work-table for the purpose of cutting the material which may be laid thereon.

By reason of the connection between the cutter-head and the work-table the rotative movement of the latter causes a similar movement of the cutter-head to bring any one of the series of knives toward the operator to snip any portion of a shoe that it may be desired to fold.

I have stated that the cutter-head is provided with three series of knives or cutters; but it is evident that this number may be varied without departing from the spirit and scope of the invention, since it is only necessary to provide the cutter-head with a greater or less number of arms to receive the knives and to construct the work-table in accordance therewith.

By the employment of a machine such as I have described it is evident that a large amount of work can be accomplished on a single one, and that where it has heretofore been necessary to use three, four, or even a greater number of machines it is now possible to accomplish the same work by one of mine.

When the operator has completed snipping a number of parts or pieces of leather which are designed for one kind of shoe or one portion of the same shoe and it is necessary to snip another lot having their edges curved differently from those first snipped, it is necessary merely to grasp the work-table and partially rotate it about its center to bring another series of knives to the front ready for operation.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. A leather-snipping machine comprising a work table or support, a reciprocatory cutter-head, and a plurality of sets of knives or cutters carried by said reciprocatory cutter-head, said cutter-head being movable in planes parallel to the plane of the work table or support to present different series of knives for operating upon the work.

2. A leather-snipping machine, comprising a work table or support, a reciprocatory cutter-head, and a plurality of sets of knives or cutters carried by said reciprocatory cutter-head, said cutter-head and work-table being movable in planes parallel to the plane of the work table or support.

3. A leather-snipping machine comprising a work table or support, a reciprocatory cutter-head, and a plurality of sets of knives or cutters carried by said reciprocatory cutter-head, said cutter-head and said work table or support being movable about a common axis.

4. A leather-snipping machine comprising a standard, a work-table rotatably mounted on said standard, and a reciprocatory cutter-head provided with a plurality of sets of knives or cutters and slidingly connected to said table to rotate therewith while free to reciprocate relatively thereto.

5. A leather-snipping machine comprising a standard, a plunger rotatively supported in said standard, a cutter-head secured to the end of said plunger, and a table connected to said plunger and head to rotate therewith.

6. A leather-snipping machine comprising a standard, a cutter-head having a plurality of series of cutters, a table having provisions for receiving the cutters, and a guide between the table and the cutter-head to guide the movement of the latter relatively to the former, said cutter-head and said table being supported by said standard and being movable around a common axis.

7. A leather-snipping machine comprising a rotary work-table, and a reciprocatory cutter-head adapted to rotate therewith, said head having a plurality of arms with curved

ends and a series of knives or cutters mounted in the end of each arm.

8. A leather-snipping machine comprising a rotary cutter-head, a plunger on which said head is secured, a standard in which said plunger is mounted to both reciprocate longitudinally and rotate, a plurality of series of cutters carried by said head, a disk of compressible material for securing said cutters in said head, and means for forcing said disk against said cutters.

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

THOMAS F. HART.

Witnesses:
C. F. BROWN,
A. D. HARRISON.