

No. 627,185.

Patented June 20, 1899.

J. B. HADAWAY.
SEAM RUBBING AND CLEANING MACHINE.

(Application filed July 23, 1898.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

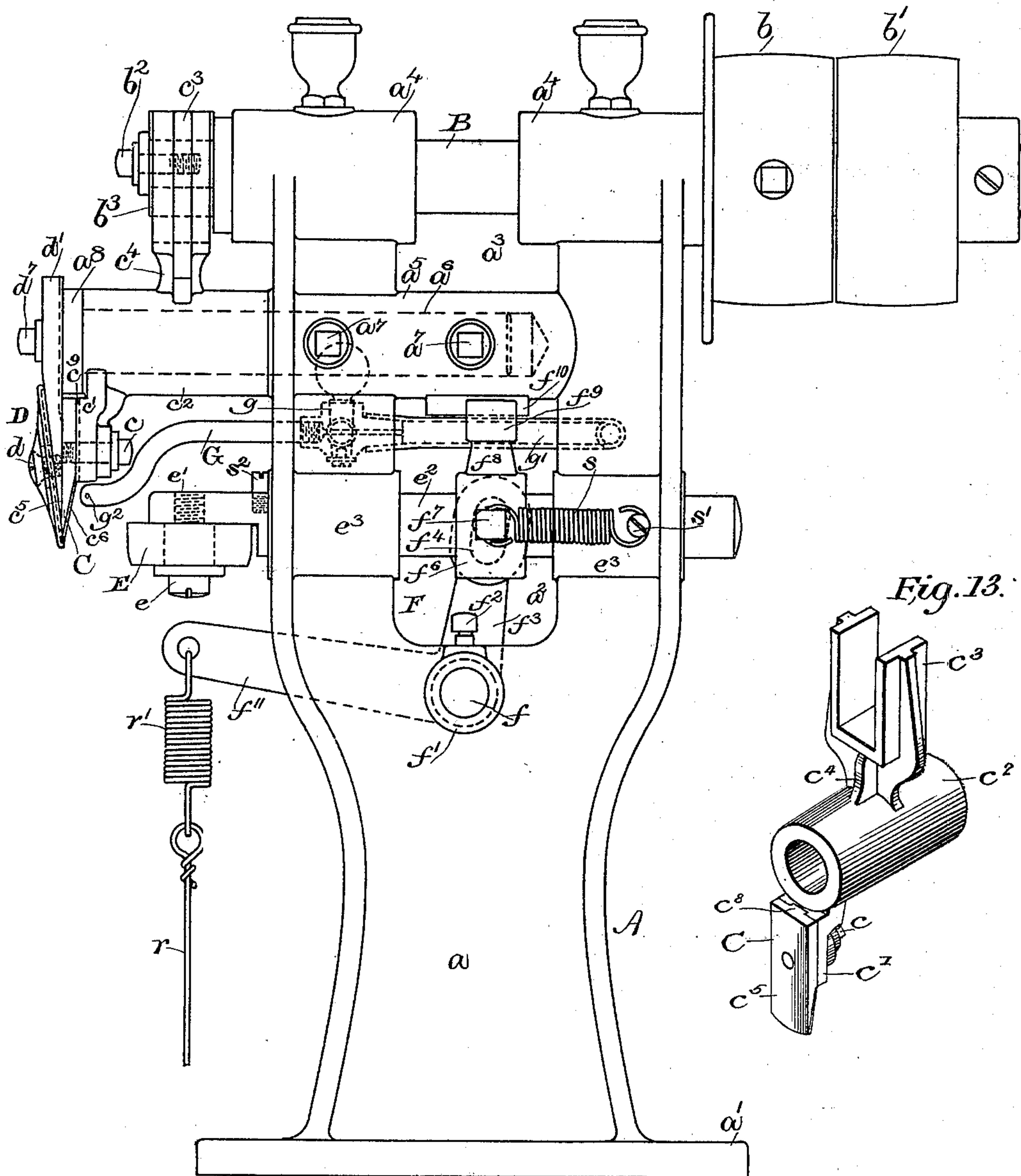
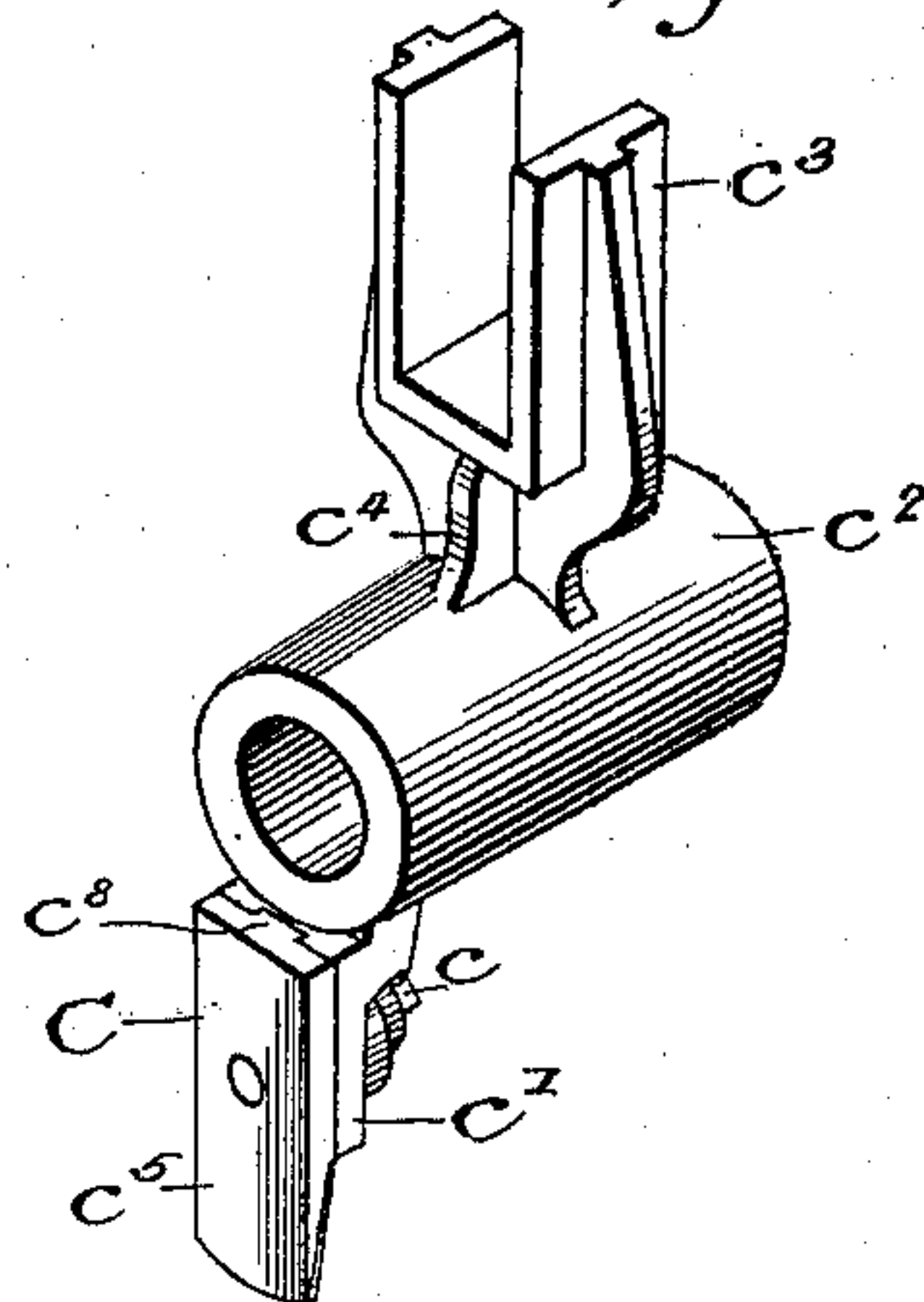


Fig. 13.



WITNESSES

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2 Sheets—Sheet 2.

FIG. 4_ FIG. 5_

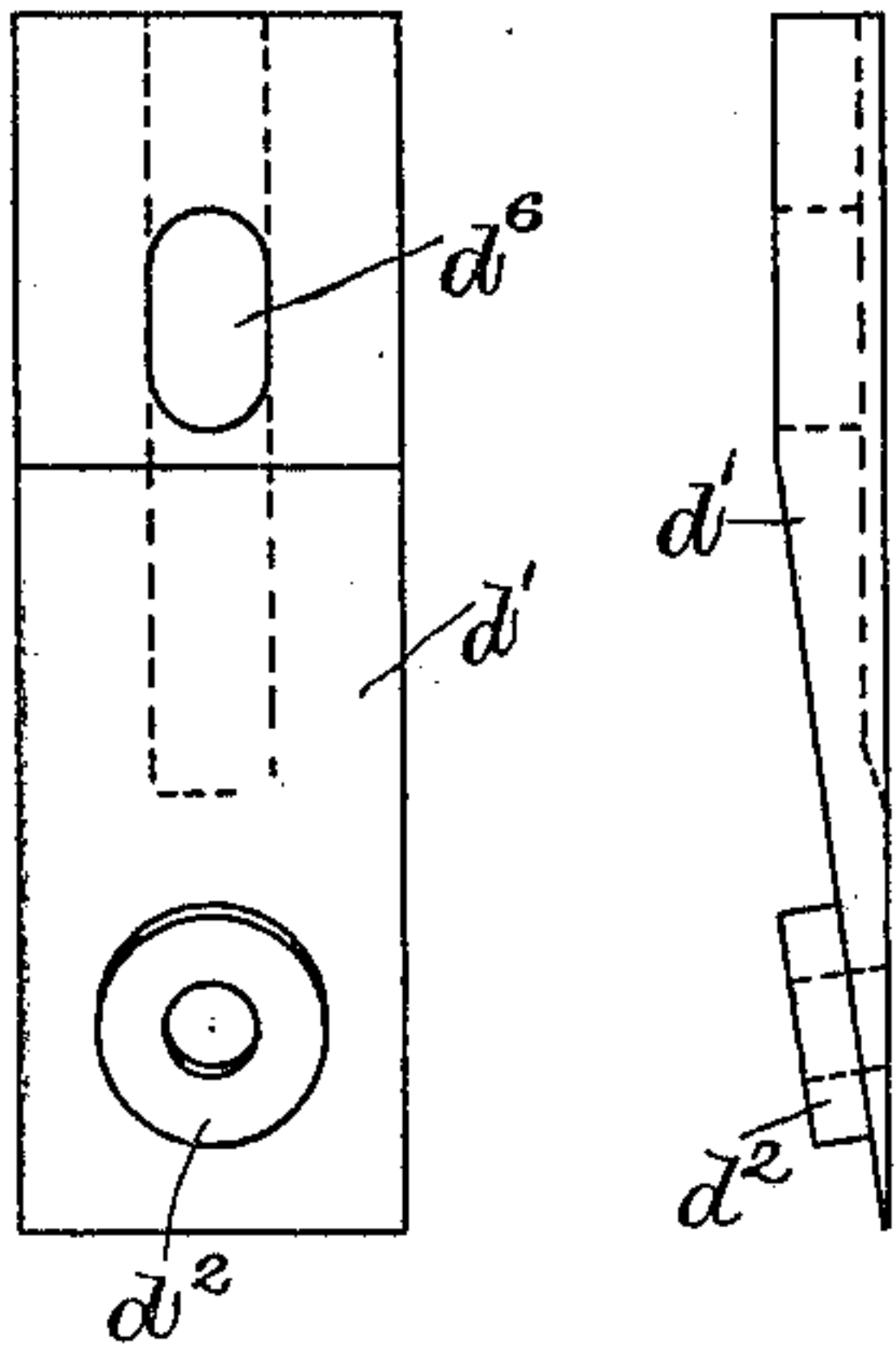


FIG. 2_

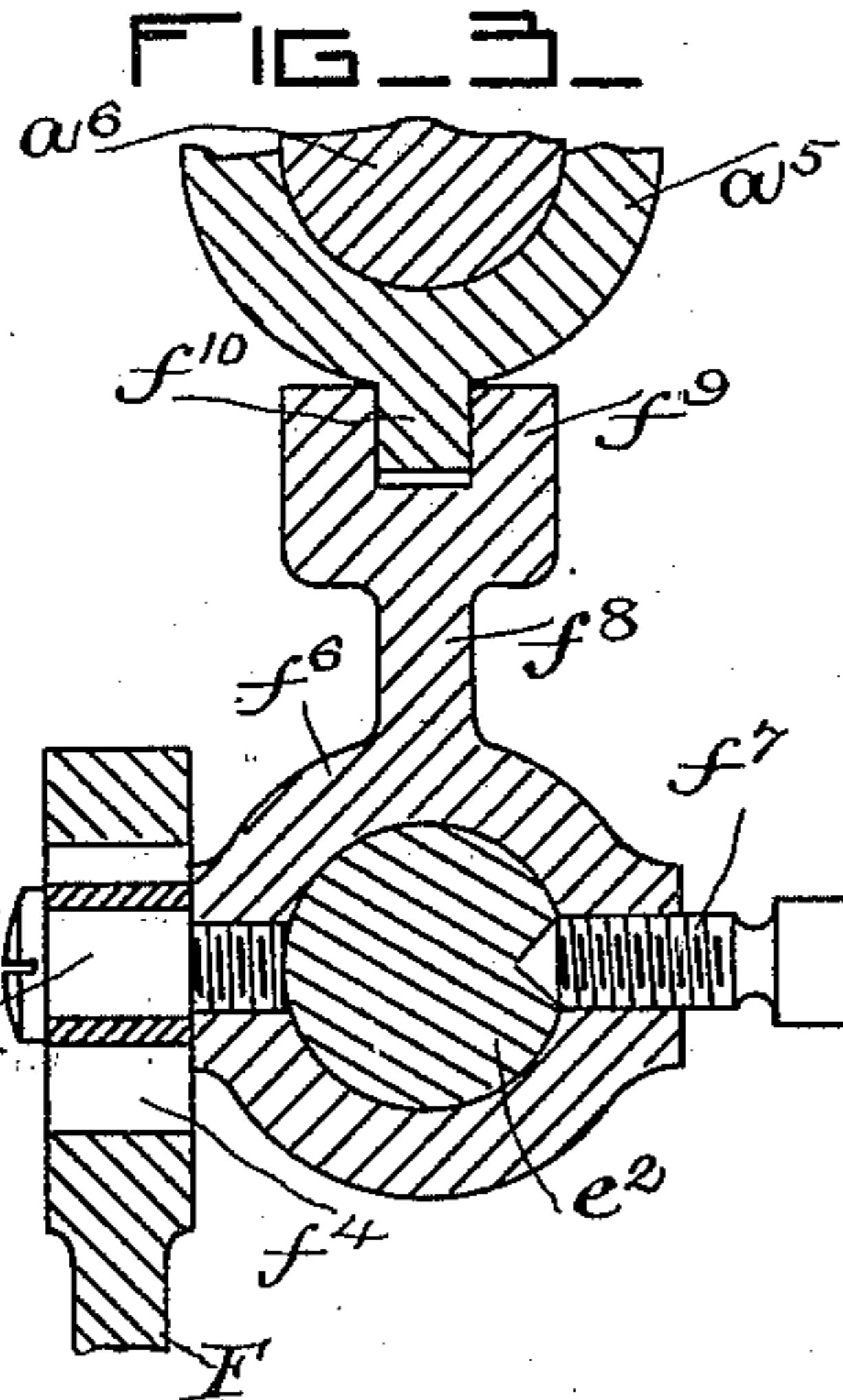
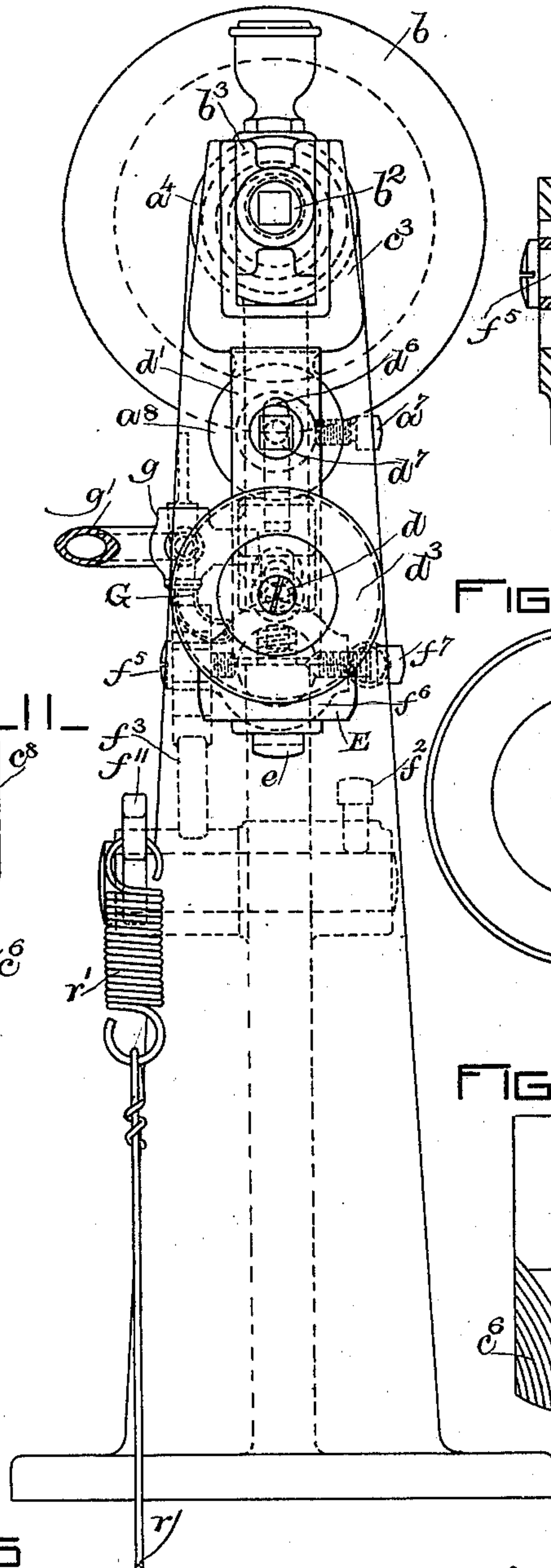


FIG. 10_

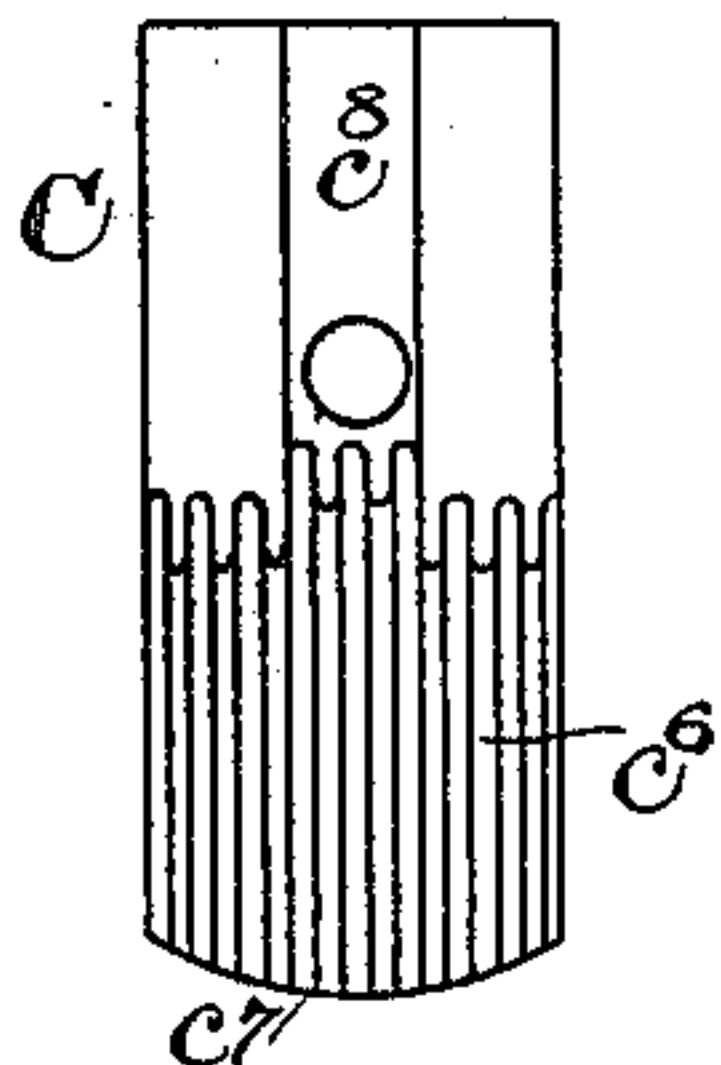


FIG. 11_

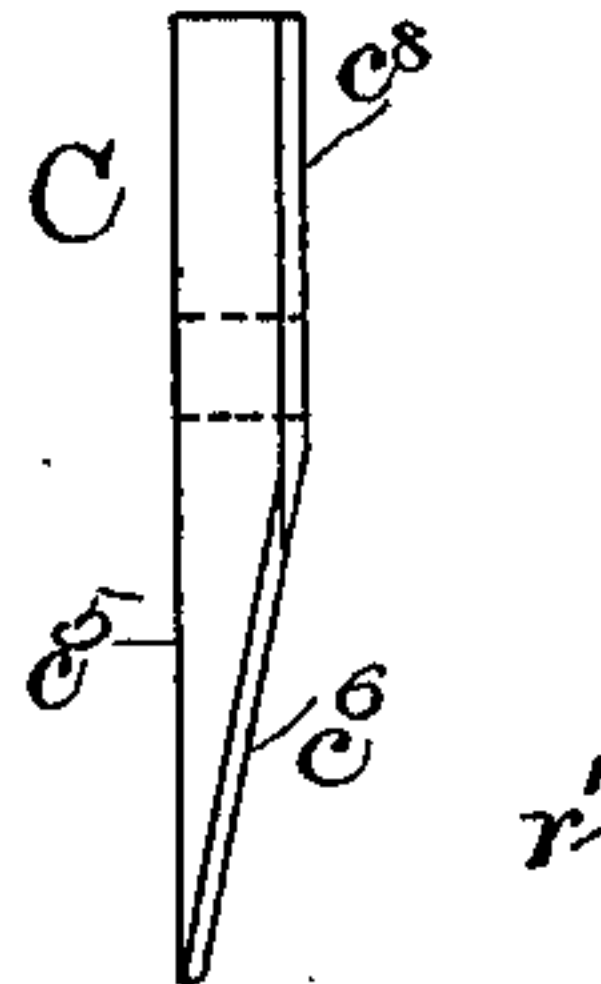


FIG. 6_

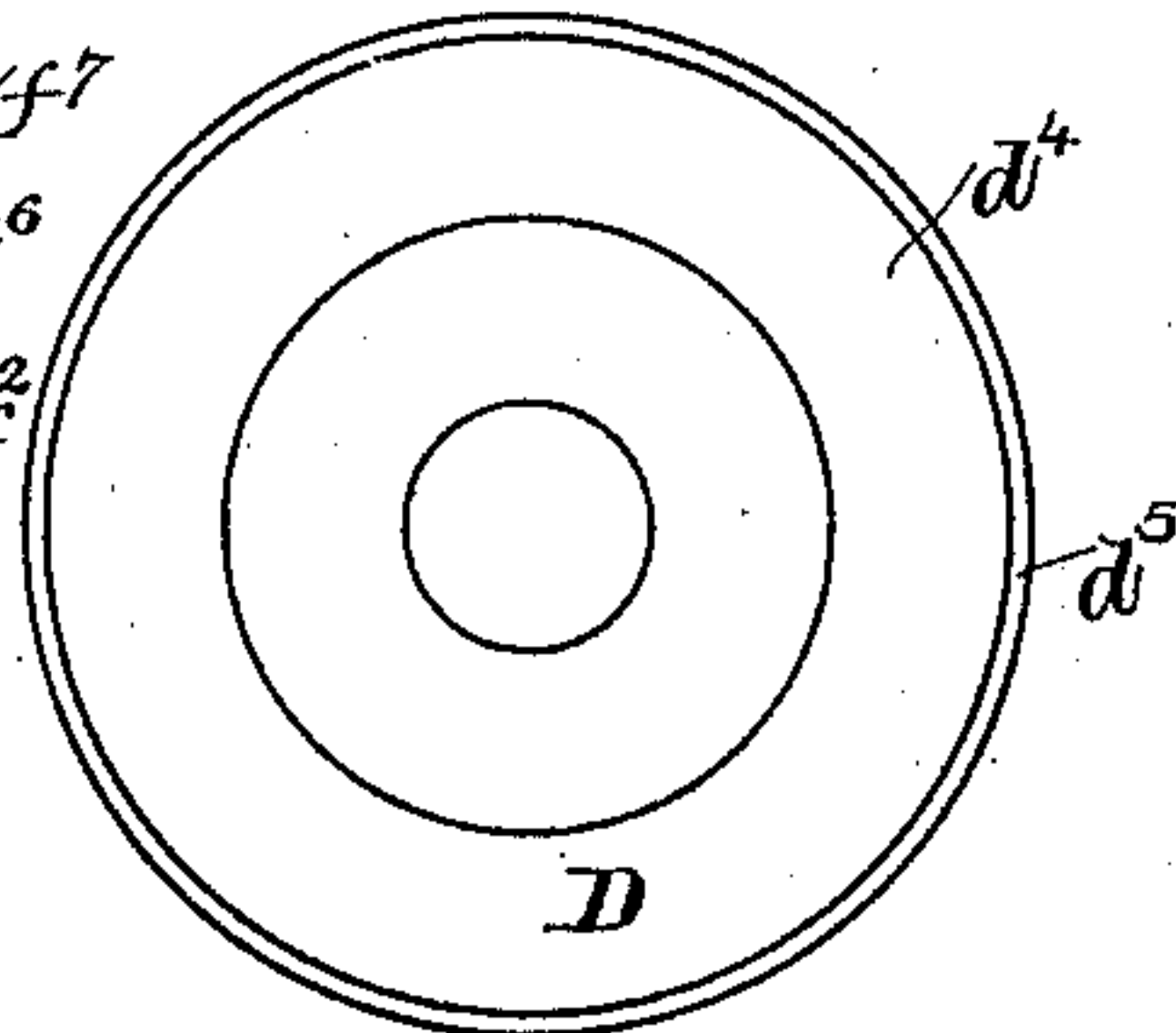


FIG. 7_

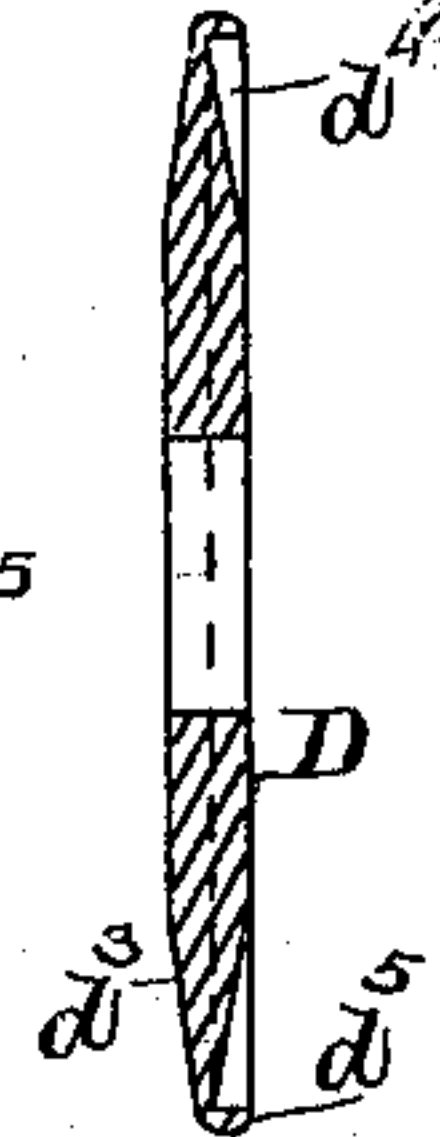


FIG. 12_



FIG. 8_

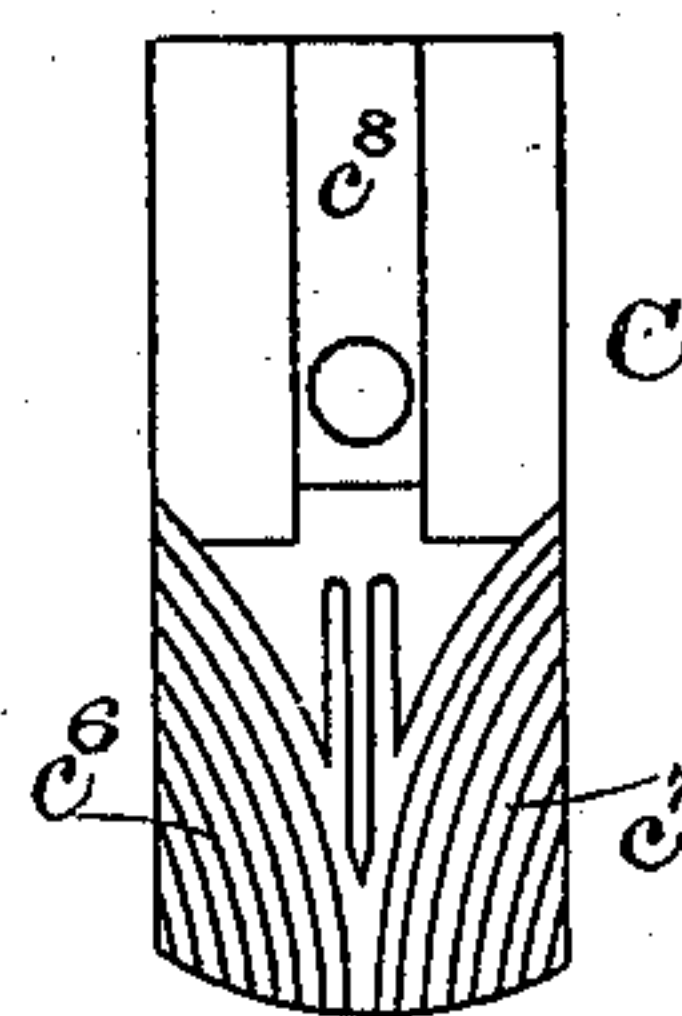
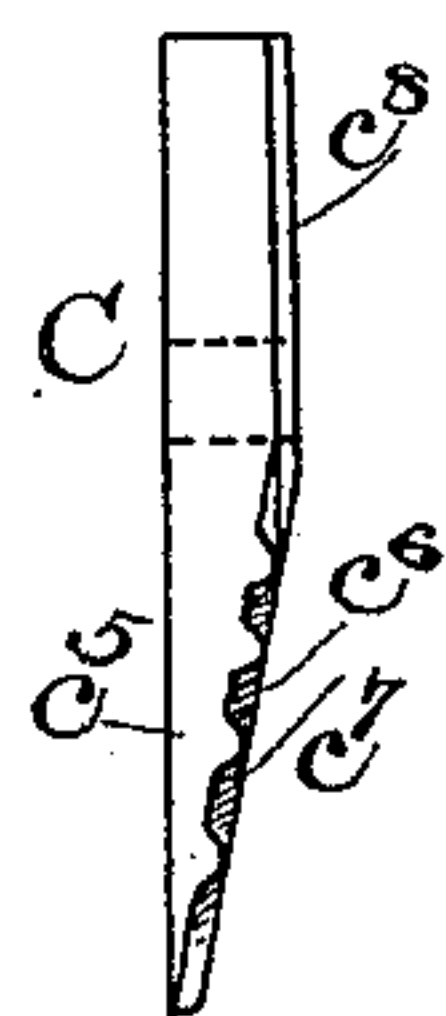


FIG. 9_



WITNESSES

M. F. Dyer.
[Signature]

INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN B. HADAWAY, OF BROCKTON, MASSACHUSETTS.

SEAM RUBBING AND CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 627,185, dated June 20, 1899.

Application filed July 23, 1898. Serial No. 686,746. (No model.)

To all whom it may concern.

Be it known that I, JOHN B. HADAWAY, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Seam Rubbing and Cleaning Machines; 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.

The present invention relates to sole-edge-finishing machines, and more particularly to a machine for rubbing down the stitches and cleaning the stitched surface of the projecting edge of a shoe-sole.

It is well known that the stitches formed by the usual outsole-stitching machines which are employed in uniting the outsole and the welt of boots and shoes vary greatly in height—that is, the crowns of some stitches project farther beyond the surface of the welt than others. It is very essential in order to secure a perfectly-finished edge that the stitches be rubbed down even with the surface of the welt and made uniform. This must be done in order that the gage which guides the trimming-cutter which finishes the sole edge may have a uniform and smooth surface against which to bear, and thus enable the trimmer to produce an evenly-trimmed edge. Furthermore, the thread used to unite the outsole to the welt of a welted boot or shoe is thoroughly saturated with wax, and as the thread passes through the welt and the outsole a considerable amount of wax will be rubbed or scraped from the thread and appear on the upper surface of the welt along the line of stitches. It is therefore necessary before the presentation of the shoe to the stitch-separator for the purpose of separating the stitches and indenting the stitched surface of a welt to clean off the surplus wax which has been deposited along the line of stitches, and this cleaning of the stitched surface of the welt is now almost universally performed by means of a hand-tool.

The object of the present invention is therefore to produce a machine for rubbing down the stitches and removing the surplus wax from stitched surfaces of boots and shoes and other work.

To the above end the present invention consists of the devices and combination of devices, which will be hereinafter described and claimed.

The present invention is illustrated in the accompanying drawings, in which—

Figure 1 shows in side elevation a machine embodying the present invention. Fig. 2 shows a front elevation of the machine. Fig. 3 represents a vertical sectional view of a portion of the mechanism for advancing the presser or work-rest. Figs. 4 to 12 represent details of mechanism which will be hereinafter referred to. Fig. 13 represents in perspective the tool-carrying sleeve and the tool secured thereto.

Similar letters of reference will be used throughout the specification and drawings to designate corresponding parts of the machine.

In the drawings, A represents the supporting-frame, which is of suitable size and shape to support the working parts of the machine. The frame A comprises a vertical standard a , which rises from a base a' , the said base a' being arranged to be mounted upon a suitable supporting-column or upon a bench or table, as desired. The standard a at its upper end is cut out, as shown at a^2 and a^3 , and carries suitable bearings a^4 , in which is mounted a driving-shaft B. The driving-shaft B has upon one end fast and loose pulleys b and b' , by means of which power is communicated to the shaft B to rotate it from any suitable source of power.

Between the openings a^2 and a^3 the frame A carries a tubular bearing a^5 , which may be formed or cast integrally with the frame, and in the bearing a^5 is fitted a cylindrical stud or shaft a^6 , having at its outer end a head a^8 , and said shaft is secured in said bearing by means of set-screws a^7 , the stud or shaft a^6 projecting some distance beyond the front of the machine, as clearly shown in Fig. 1, forming a fulcrum or bearing about which the seam-rubbing tool oscillates.

The seam rubbing and cleaning tool C is fastened by means of a bolt c to an arm c' , which projects downwardly from a tubular sleeve c^2 , fitted to oscillate upon the projecting end of the shaft a^6 , and an oscillating movement is imparted to the sleeve c^2 and the tool C by means of a crank b^2 on the forward

end of the shaft B, which crank carries a block b^3 , arranged to have a free sliding movement in a fork c^3 , which is carried by an arm c^4 , projecting upwardly from the sleeve c^2 .

5 The tool C preferably has a substantially vertical front face c^5 and an inclined rear working face c^6 , (see Fig. 1,) and the working face c^6 is provided with grooves c^7 , (see Figs. 8 to 12, inclusive,) which grooves may be
10 formed upon curved lines extending from the sides of the tool downward toward the medial line, as shown in Figs. 8 and 9, or, as shown in Figs. 10 to 12, the grooves may be formed substantially vertical.

15 In order to fixedly hold the tool C on the arm c' against any possible independent lateral movement, I prefer to form on the rear face of the shank of the tool a rib c^8 , which is arranged to engage a groove c^9 , formed in
20 the front face of the arm c' .

In operation the tool C enters the crease between the upper and welt of the shoe, and the stitched surface of the welt is pressed closely in contact with the inclined working
25 face of the tool C, and said tool is rapidly oscillated, whereby the grooved surface will effectually rub down and clean the wax from the crowns of the stitches and from the welt.

In order that the rapid movement of the
30 tool will take place without liability of injuring the upper of the shoe, I provide a guard D, which, as shown, is formed in the shape of a disk or wheel (see Figs. 6 and 7) and which is secured by means of a screw d to
35 the end of a plate d' , the said plate having a substantially vertical face upon its inner side or the side adjacent to the tool C and at its lower end being inclined, (see Figs. 4 and 5,) and at such end the plate d' is provided with
40 a circular boss d^2 , upon which the guard D is mounted and arranged to freely turn. The guard D is beveled around its periphery upon its outer surface, as shown at d^3 , and when in position the beveled surface d^3 of the guard
45 and the inclined working face c^6 of the tool C form a substantially wedge-shaped end to enter the crease between the upper and welt. As shown in Figs. 6 and 7, the guard D has an annular recess d^4 on its rear face and
50 around its periphery a flange d^5 , into which recess the lower curved end of the tool C fits, and is thus prevented from coming in contact with the upper of the boot or shoe. The plate d' at its upper end is provided with a
55 slot d^6 , through which passes a set-screw d^7 , tapped into the end of the shaft a^6 , thus clamping the plate d' against the head a^8 , whereby the guard D will be held in position in front of the tool C and free to turn around
60 its bearing d^2 as the boot or shoe is moved along in contact therewith.

G represents a gas-pipe which is provided with a suitable stop-cock g and to which gas may be conducted by a pipe g' , the pipe G
65 having its end disposed adjacent to the tool C and provided with a suitable burner g^2 ,

whereby the tool C may be heated during its operation.

In operation the stitched surface of the welt is pressed against the face c^6 and the tool
70 C, and for this purpose I have provided a work-rest and presser, which may conveniently consist of a disk or wheel E, mounted to turn freely on a stud e , secured in a threaded bearing e' in the end of a sliding shaft e^2 .
75 The shaft e^2 is arranged to reciprocate in bearings e^3 , formed in the standard a . The shaft e^2 is moved longitudinally in its bearings to project and retract the work-rest and presser E by means of a bell-crank lever F,
80 which is fulcrumed at f on a stud, which is secured in a bearing f' by means of a set-screw f^2 . One arm f^3 of the bell-crank lever is provided with a slot f^4 , which engages a stud f^5 , projecting from a collar f^6 , surround-
85 ing the shaft e^2 , and to which it is secured by means of a screw f^7 .

In order to insure the correct positioning of the shaft e^2 and to prevent its turning in its bearings e^3 , the collar f^6 is provided with
90 an arm f^8 , projecting upwardly and carrying at its upper end a fork f^9 , which engages a short rib or a guide f^{10} , formed on the under surface of the bearing a^5 , whereby the shaft e^2 is prevented from turning and yet is free
95 to have a sliding motion to project and retract the work-support and presser E.

The work-rest and presser E is normally held in a retracted position, as shown in Fig. 1, by means of a coiled spring s , one end of
100 which engages a stud s' on the fixed frame of the machine and the other end of which engages the screw f^7 , which secures the collar f^6 to the shaft e^2 .

s^2 represents a stop-screw tapped in a
105 threaded bearing in the forward end of the shaft e^2 in order to limit the backward movement thereof, as shown in Fig. 1. The shaft e^2 is adjusted to bring the work-rest and presser E in contact with the bottom of the
110 shoe-sole to press the stitched surface of the welt against the grooved face of the rubbing and cleaning tool C by means of a rod r , which is connected at its lower end to a suitable treadle (not shown) and which at its
115 upper end is connected by means of a coiled spring r' to the arm f^{11} of the bell-crank lever F.

In the operation of the machine the tool C is properly heated by means of the flame of
120 the burner g^2 and is rapidly oscillated by the rotation of the driving-shaft B. The shoe is positioned with the bottom surface of the sole turned inward toward the work-rest and presser E and the lower edge of the guard D
125 and the tool C inserted between the upper and the welt. The operator by means of the treadle advances the work-rest and presser E and causes it to yieldingly hold the stitched surface of the welt against the grooved work-
130 ing face c^6 of the rubbing and cleaning tool C. When thus positioned, the operator moves the

shoe rapidly along, holding the shoe up against the periphery of the guard D, and the rapidly-oscillating tool will rub and smooth out the stitches and clean off the surplus wax along the stitches of the seam and from the surface of the welt, thus cleaning the stitched surface of the welt.

Having described the construction and mode of operation of my invention, I claim as new and desire to protect by Letters Patent of the United States—

1. The combination with an oscillating seam-rubbing tool arranged to act in the crease between the upper and sole, of a guard carried by a fixed support adjacent to the tool in position to prevent the upper from coming in contact with the said tool, substantially as described.

2. The combination with a movable seam-rubbing tool arranged to act in the crease between the upper and sole, of a guard mounted to turn freely on a fixed support adjacent to the tool in position to prevent the upper from coming in contact with said tool, substantially as described.

3. The combination with an oscillating tool arranged to act in the crease between the upper and sole, of a guard carried by a fixed support adjacent to the tool and provided upon its rear face with an annular recess and a peripheral flange arranged to receive and cover the lower end of the tool, substantially as described.

4. The combination with a movable seam-rubbing tool arranged to act in the crease between the upper and sole, of a work-rest and presser, and yielding means under the control of the operator to cause said rest and presser to engage the bottom of the shoe-sole, and force the projecting edge of the sole

against the working face of the tool, substantially as described.

5. The combination with a movable seam-rubbing tool having a grooved working face, of a work-rest and presser arranged to hold the work in contact with the grooved working face of the tool, substantially as described.

6. The combination with a movable seam-rubbing tool having a grooved working face, of a guard-disk having an annular beveled surface near its periphery, mounted to turn freely on a fixed support adjacent to the tool, and means to adjust the support to position the periphery of the guard-disk with relation to the lower end of the tool, substantially as described.

7. The combination with a seam-rubbing tool, of a work-rest and presser movable toward and from the tool, means to normally retract said work-rest and presser away from the tool, and yielding means under the control of the operator to advance the work-rest and presser toward the tool, substantially as described.

8. The combination with a movable seam-rubbing tool having a grooved working face, of a work-rest and presser comprising a roller arranged to engage the bottom of a shoe-sole to hold the projecting edge of the sole or welt against the working face of the tool, a slide-shaft carrying the work-rest and presser and a treadle and yielding connections arranged to advance the slide-shaft and the work-rest and presser, substantially as described.

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

JOHN B. HADAWAY.

Witnesses:

T. HART ANDERSON,
HORACE VAN EVEREN.