

(No Model.)

3 Sheets—Sheet 1.

J. E. WALCOTT.

MACHINE FOR MAKING THE LOOPS OF CHAIN SWIVELS.

No. 273,919.

Patented Mar. 13, 1883.

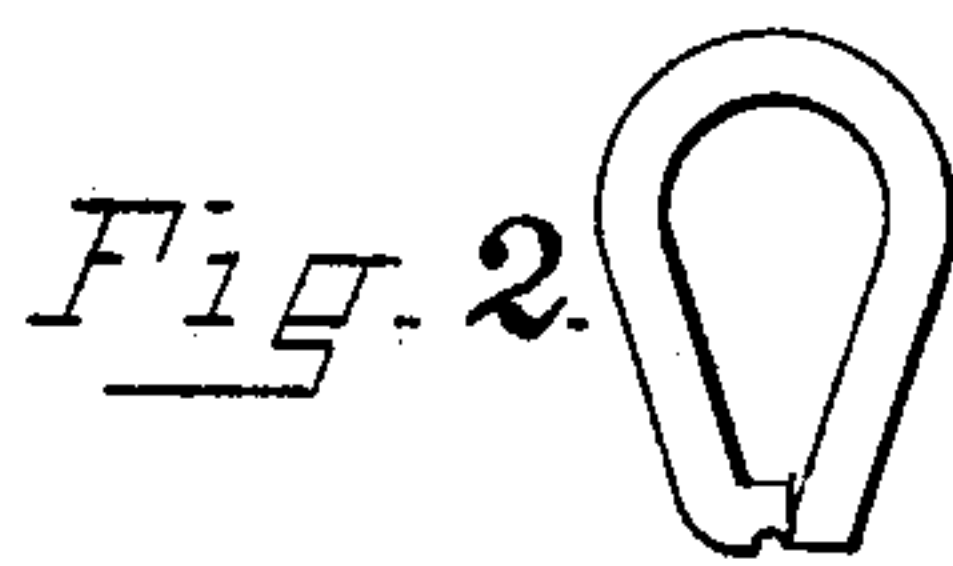
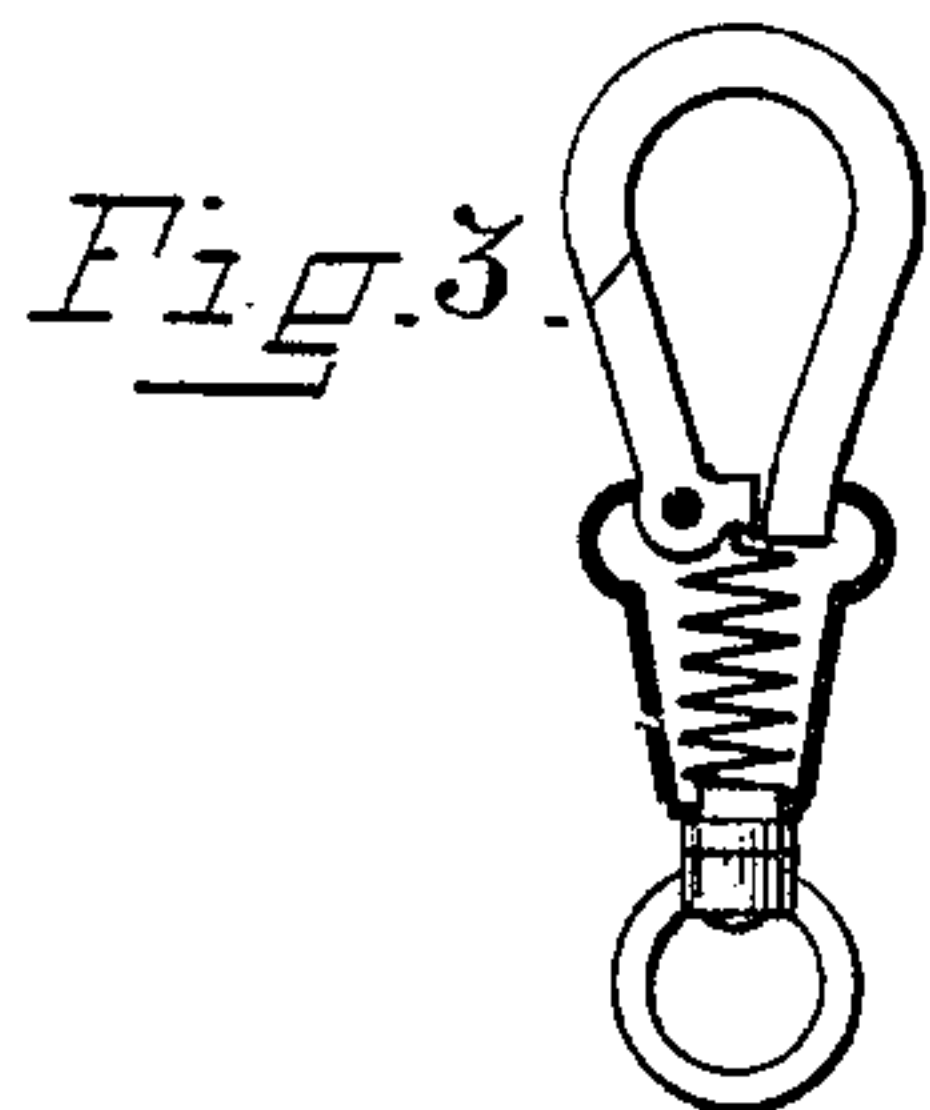
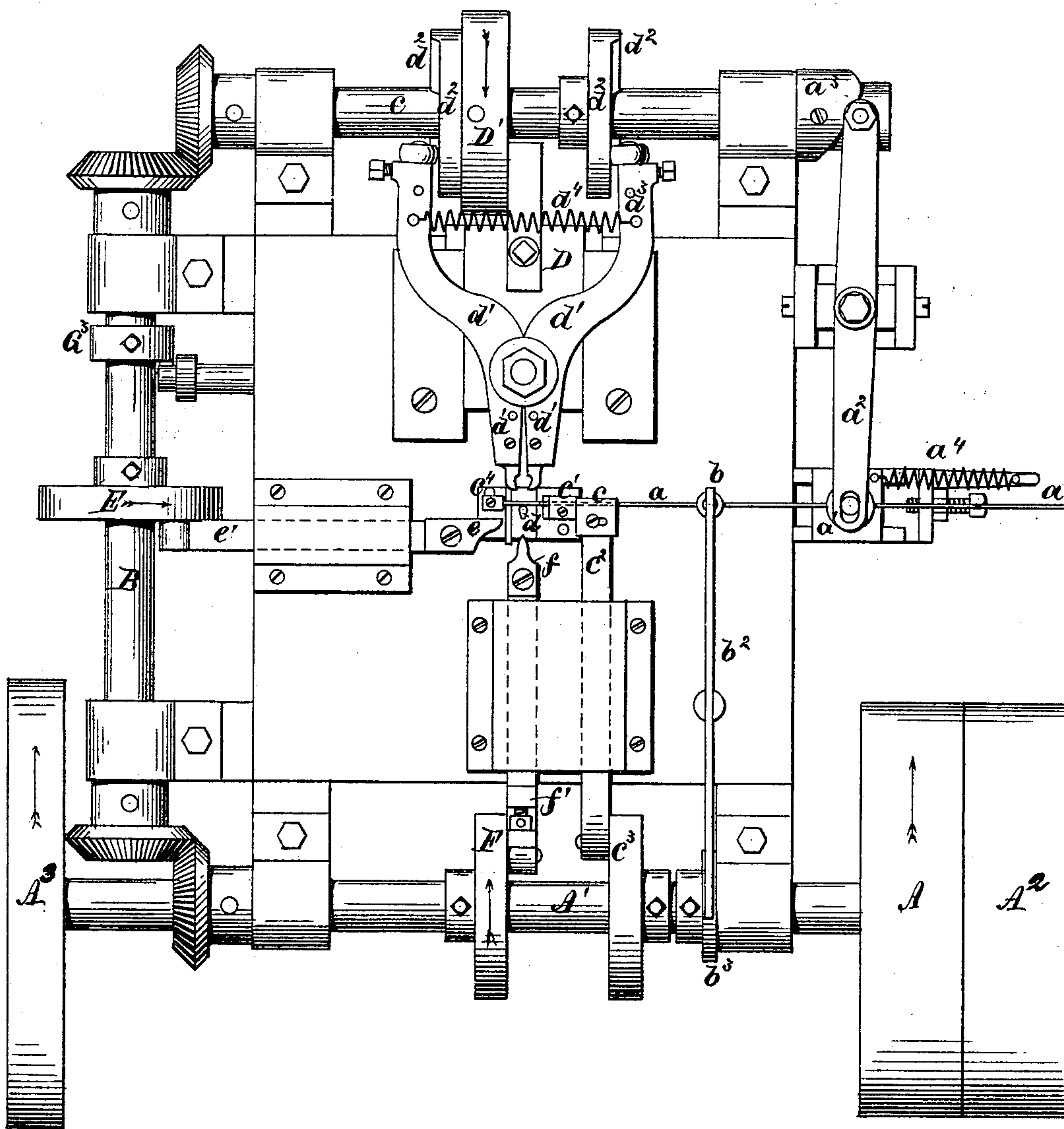


Fig. 1.



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C. H. Leitch

INVENTOR:

Jabez E. Walcott
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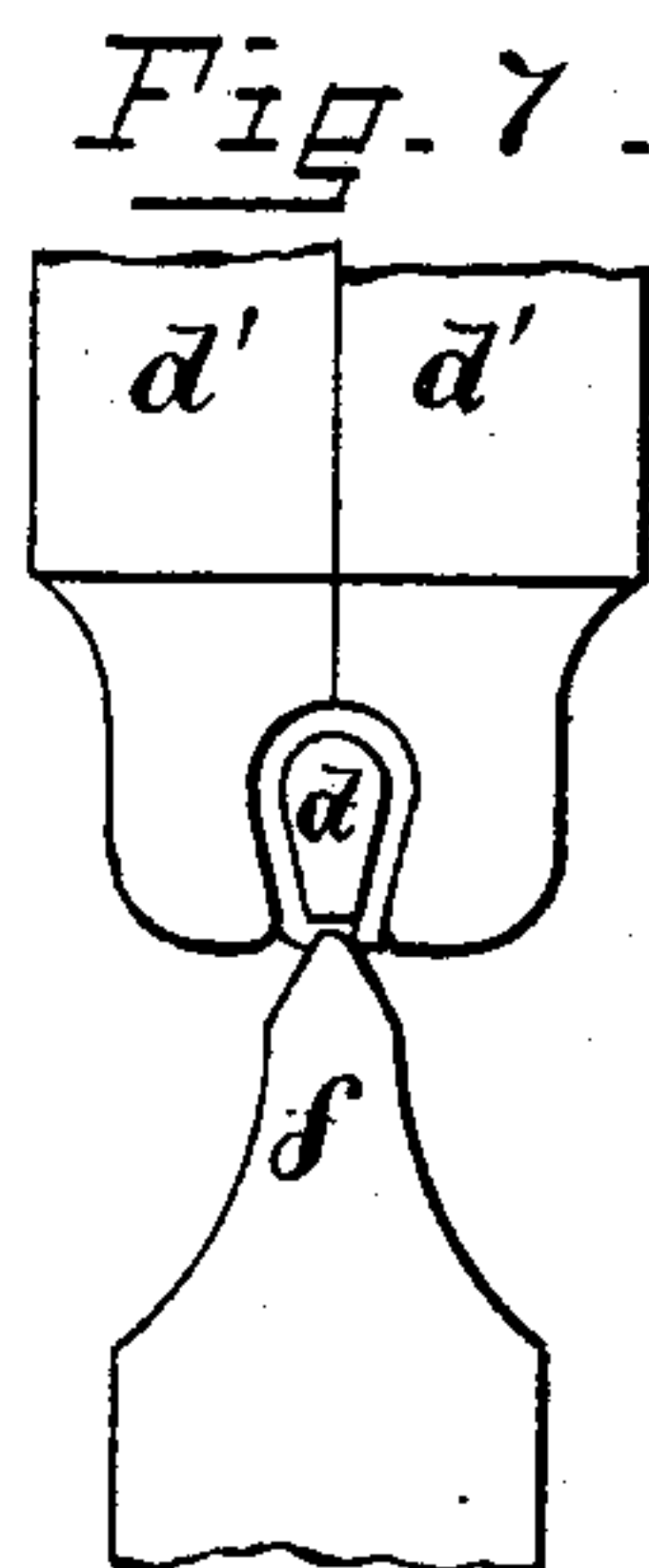
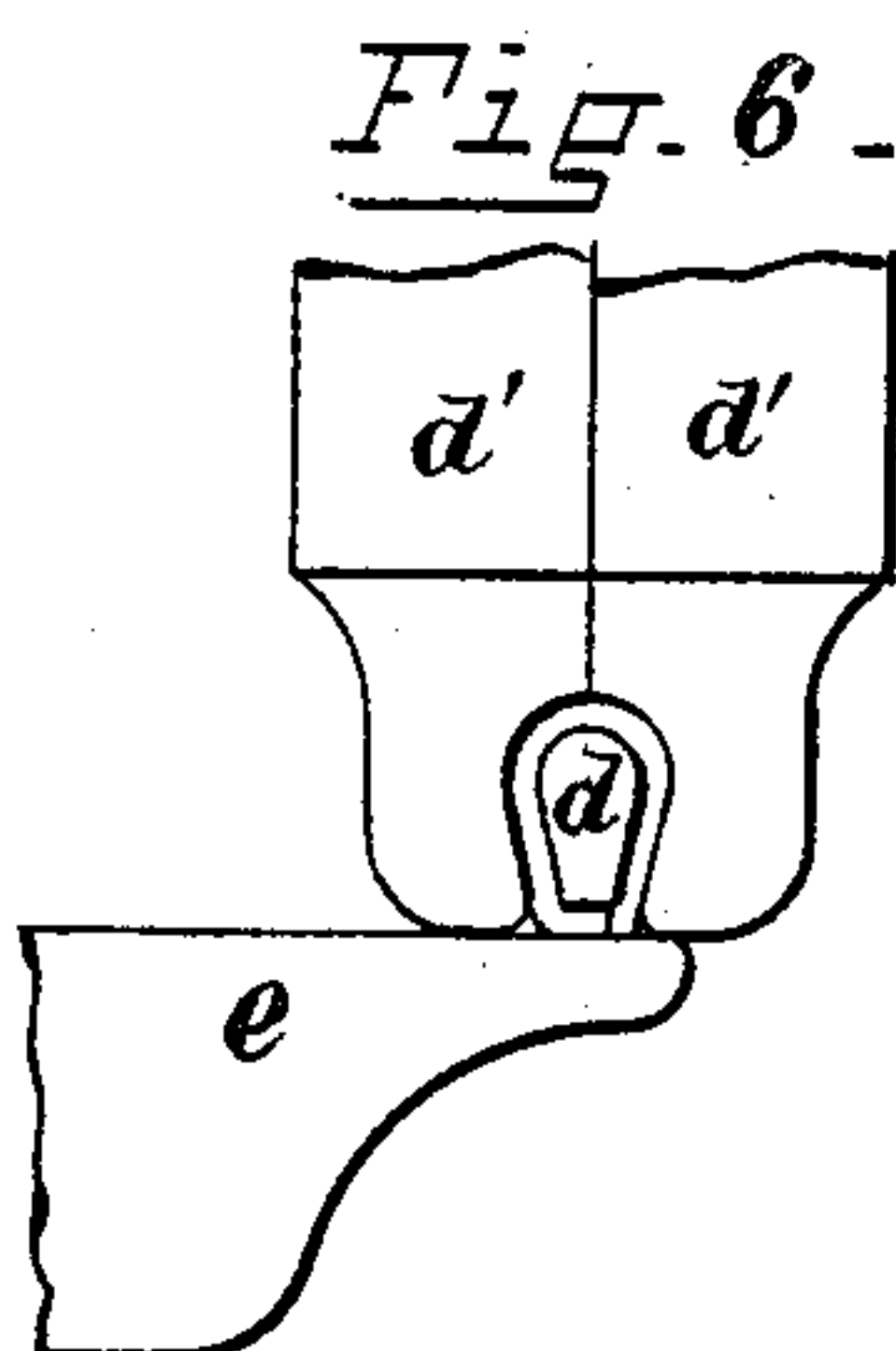
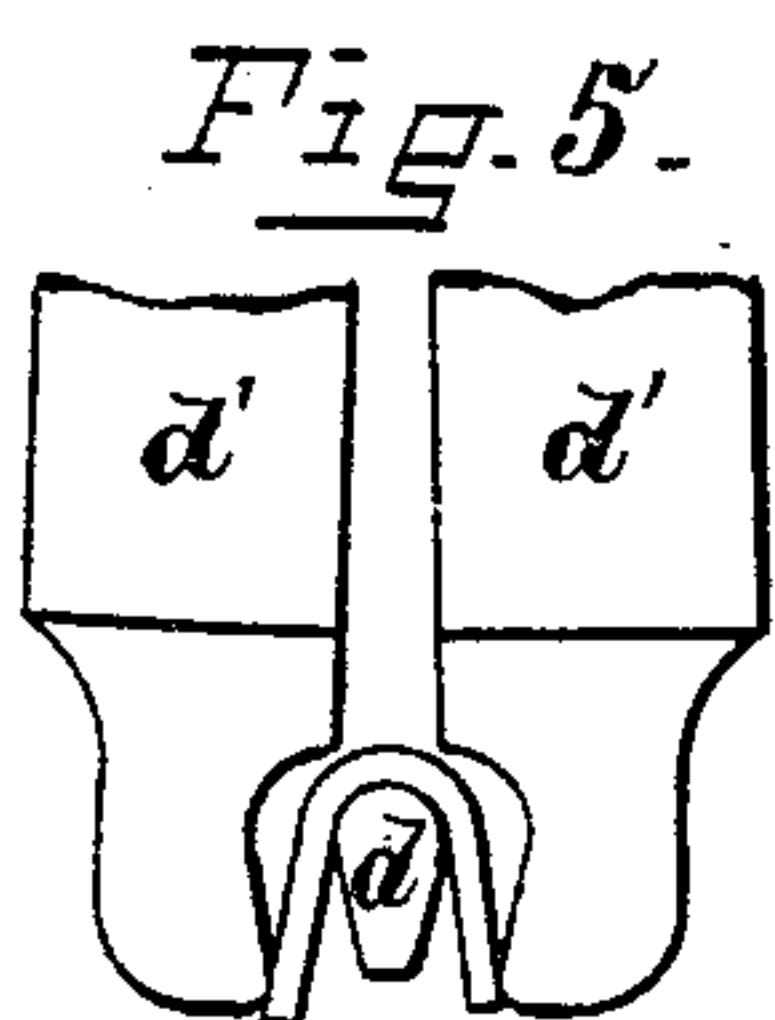
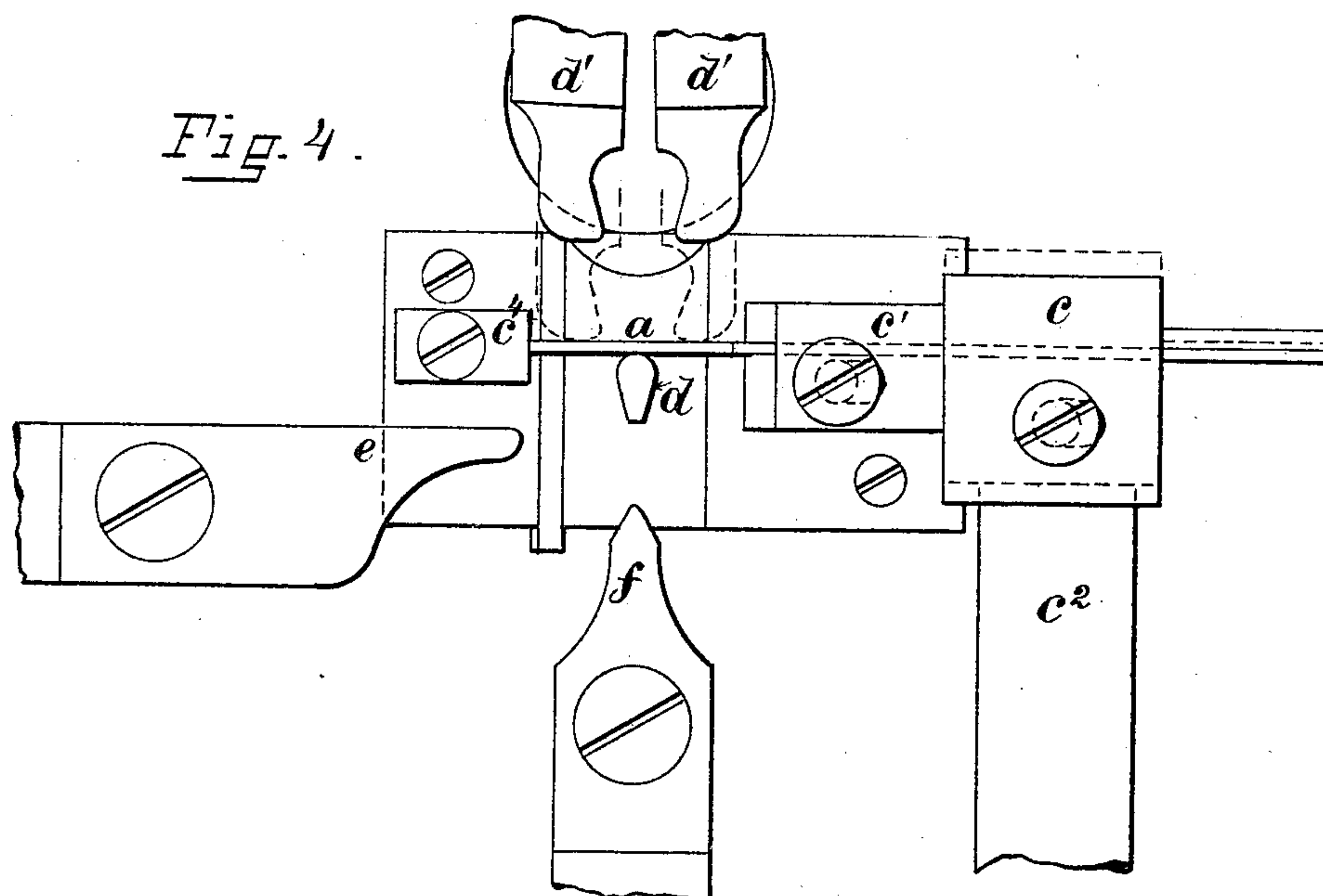
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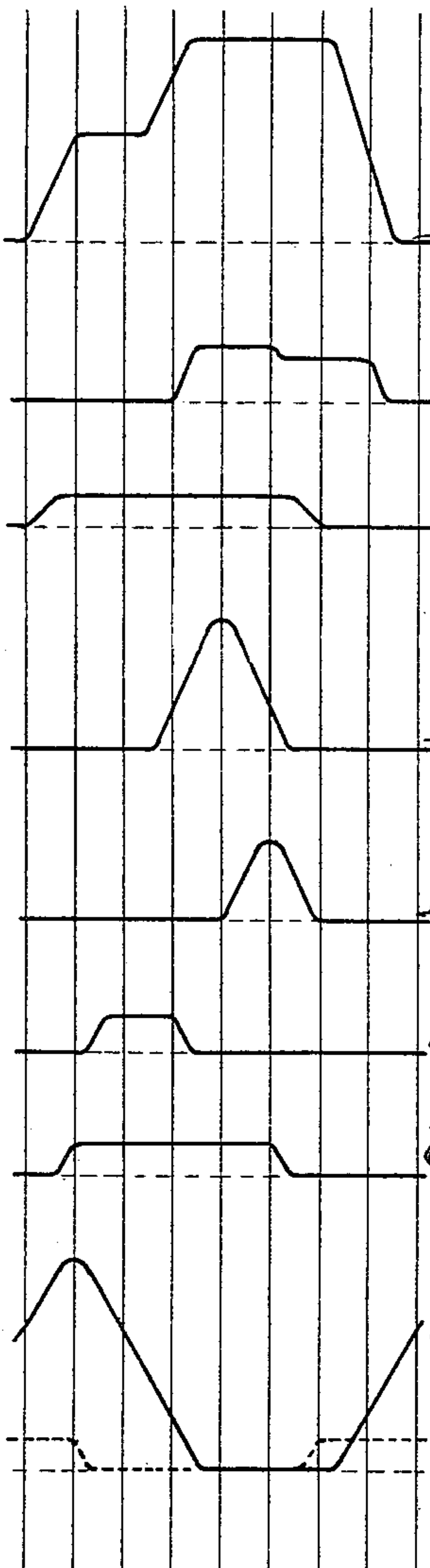


Fig. 11.

Fig. 8.

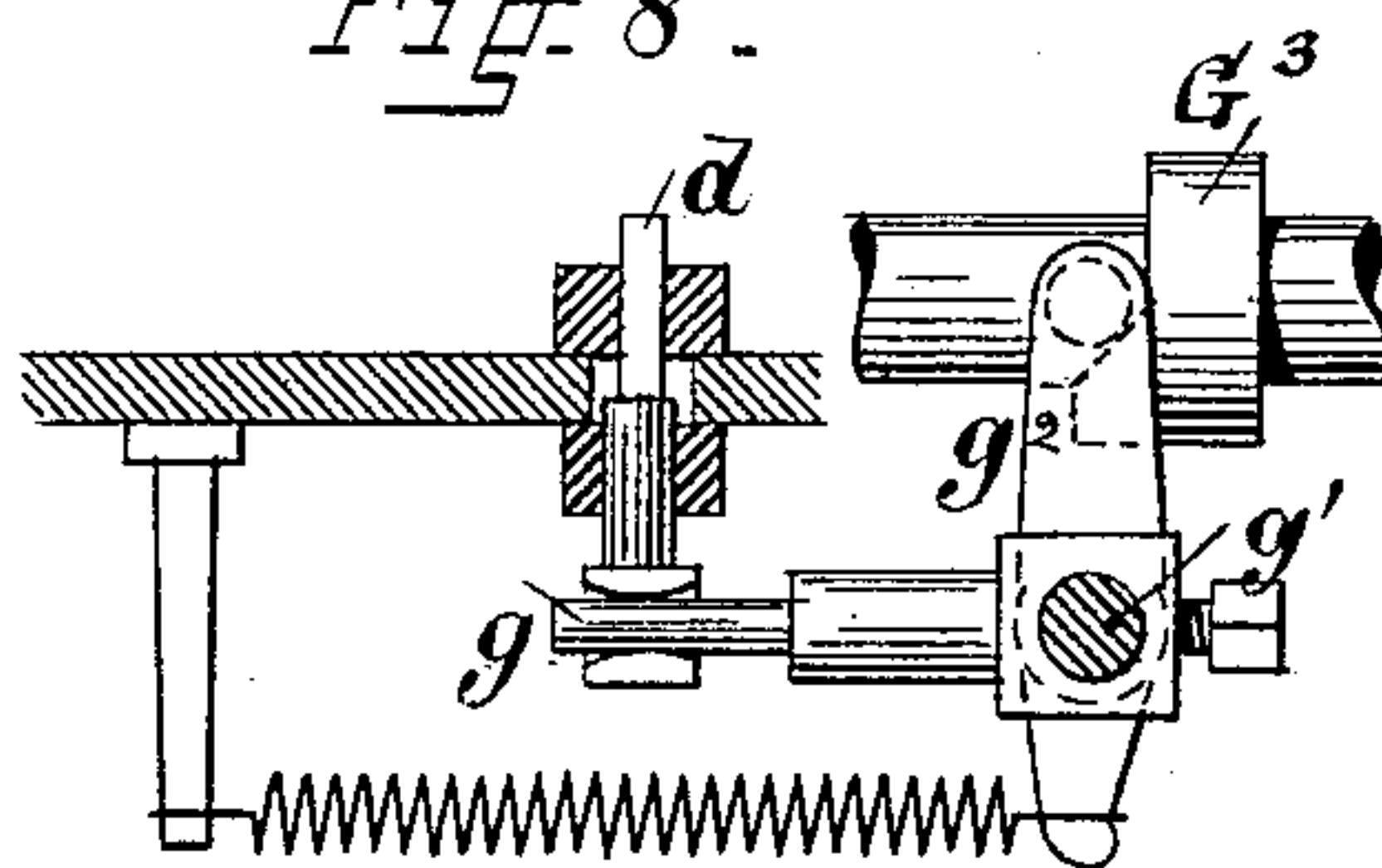


Fig. 9.

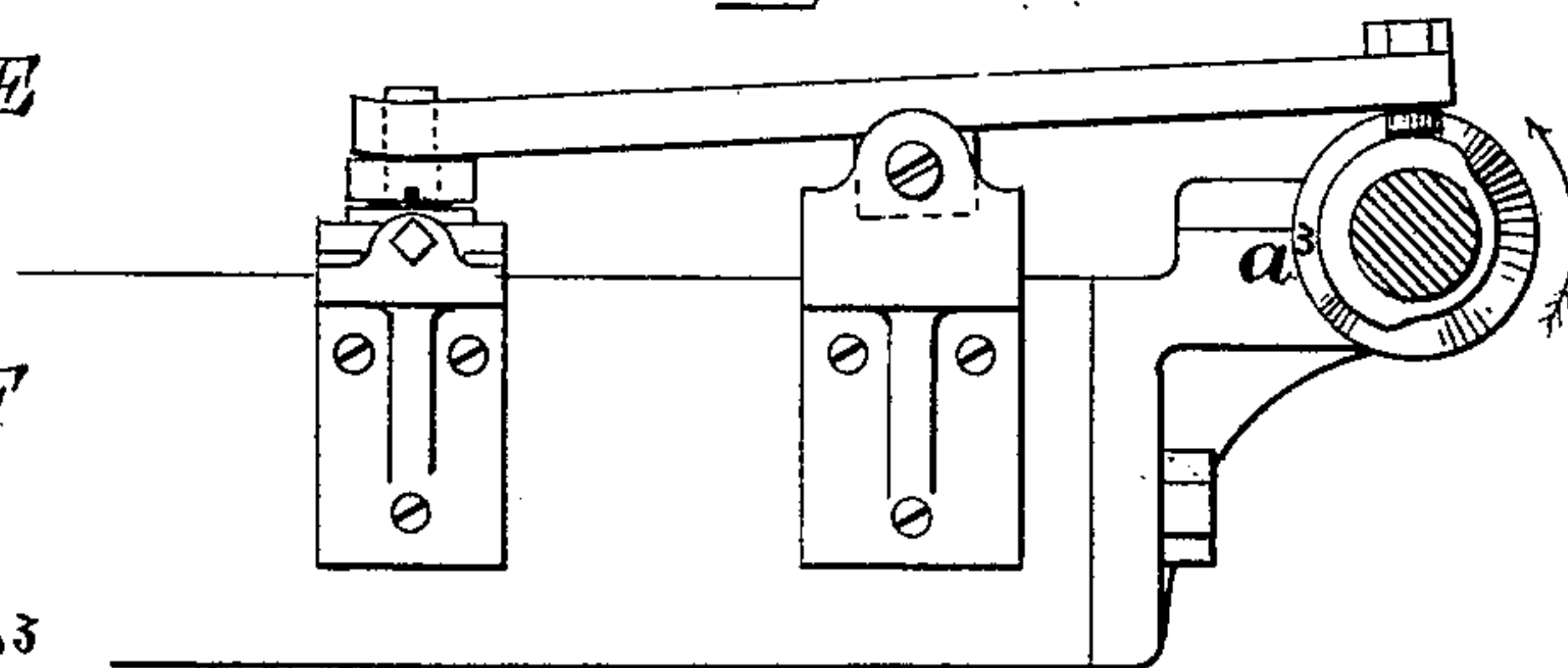
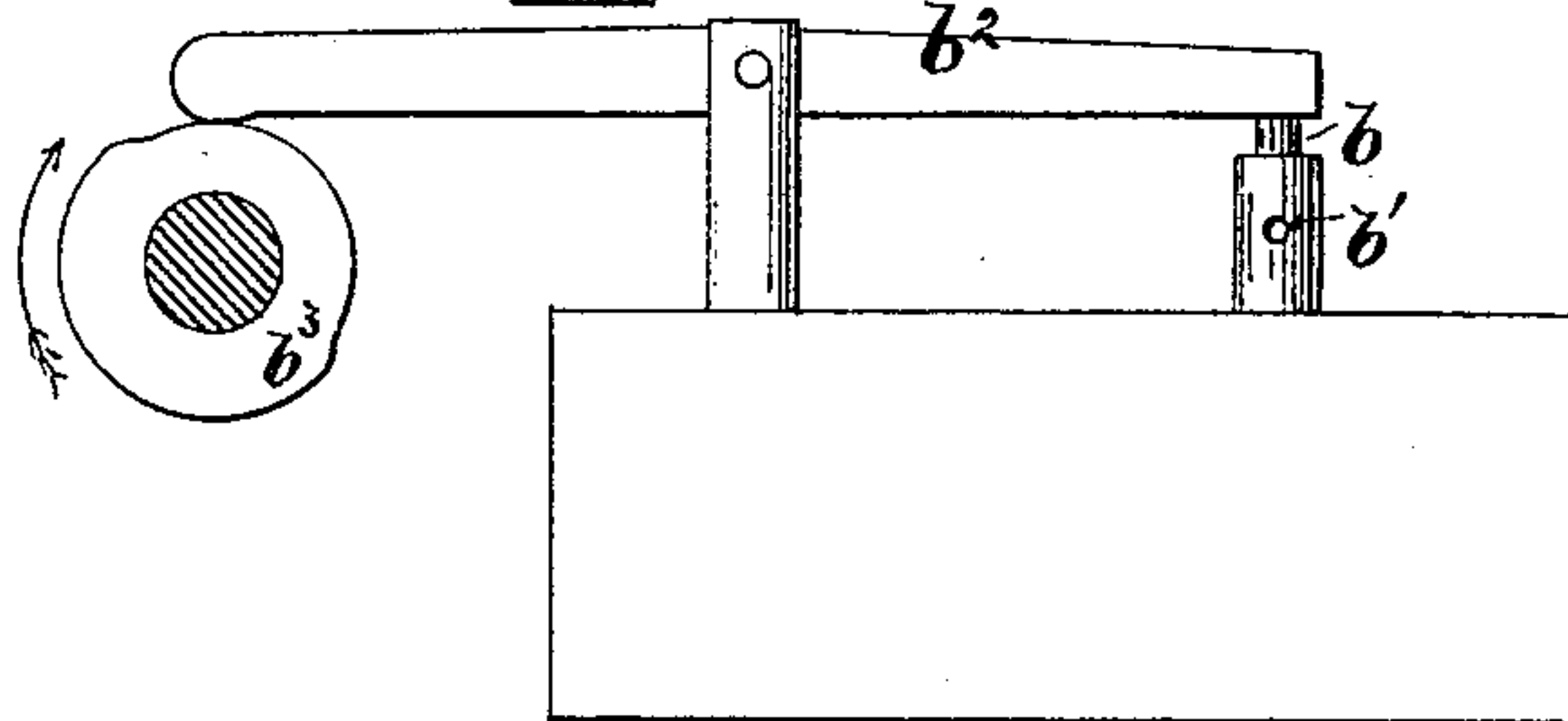


Fig. 10.



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UNITED STATES PATENT OFFICE.

JABEZ E. WALCOTT, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
FREDERICK I. MARCY, OF SAME PLACE.

MACHINE FOR MAKING THE LOOPS OF CHAIN-SWIVELS.

SPECIFICATION forming part of Letters Patent No. 273,919, dated March 13, 1883.

Application filed November 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, JABEZ E. WALCOTT, of the city and county of Providence, and State of Rhode Island, have invented a new and
5 useful Improvement in Machines for Making the Loops of Chain-Swivels; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming
10 part of this specification.

This invention refers to an improvement in machines for making the loops of chain-swivels from wire fed to the same without the intervention of hand labor.

15 The invention consists in the peculiar and novel construction and arrangement of the various operating parts of the machine, by which a wire is fed to the machine, a length separated, bent, formed, and swaged to form
20 the loop for a chain swivel, as will be more fully set forth hereinafter, and particularly pointed out in the claims.

Figure 1 is a top view of the machine, showing the wire-feeding device, the cutter, and the
25 devices for bending the loop and swaging the same. Fig. 2 is a view of the loop as it comes from the machine. Fig. 3 is a view of the completed chain-swivel, the column being shown in section. Fig. 4 is an enlarged view,
30 showing the bending-jaws and the wire-cutter. Fig. 5 is an enlarged view, showing the bending-jaws extended over the former before the same are closed around the former. Fig. 6 represents the bending-jaws closed over the former
35 and the closing-pawl in place. Fig. 7 represents the swaging-tool in contact with the loop. Fig. 8 is a view of the cam and lever by means of which the former is withdrawn. Fig. 9 is a view of the wire-feeding lever and the cam operating the same. Fig. 10 is a view of the lever for holding the wire and the cam operating the same. Fig. 11 is a diagram showing the
40 movements of the various operating parts and their relative position during the formation of one loop.

In the drawings, A is the driving-pulley, secured to the shaft A'; and A² is the loose pulley, onto which the belt is shipped when the machine is to be stopped. A³ is a balance-wheel.
50 Motion is communicated by means of beveled gears from the shaft A' to the shafts B and C,

and from these three shafts all the parts are operated by which the loop is formed.

a represents the wire from which the loops are made. It passes through the sliding clutch
55 a', which is operated by the lever a², the end of which bears against the face-cam a³ on the end of the shaft C. The slide a' is drawn back and the end of the lever held against the face of the cam a³ by the spiral spring a⁴. At each
60 revolution of the shaft C a length of wire is fed into the machine sufficient to make one loop. To prevent the slide a' from drawing the wire out again when the slide moves back, the clamp b is placed in the path of the wire.
65 It consists of a cylinder provided with the round hole b', and a piston connected with the hinged lever b², the other end of which bears on the cam b³, as is clearly shown in Fig. 10. The wire, being square, passes through the
70 hole b', and the piston, being forced down on the wire, firmly holds the same. The wire now passes through a slot in the cutter c and through a similar slot or hole in the fixed plate c'. The cutter is reciprocated sufficiently to shear off or
75 cut the wire by means of the slide c², to which it is secured, and which is operated by the cam c³, having a cam-groove on one side into which a projection from the slide c² enters, and by
80 which the cutter is reciprocated once during each revolution of the shaft A'. The end of the wire rests against the stop c⁴, which stop is adjustable, so that the length of the wire fed can be limited by the same to the exact length
85 required. The separated piece of wire lies now in front of the former d, around which it is to be bent. The bending-jaws d' d' are pivotally secured to the slide D, working in proper ways and reciprocated by the cam D'. They now
90 approach the wire, as is shown in broken lines in Fig. 4, until they have bent the wire, as is shown in Fig. 5. The cams d² d² on the shaft C now force the levers d³ d³ outward, thereby closing the bending-jaws d' d', as is shown in Fig. 6. At the same time the pawl e, secured
95 to the slide e' and operated by the cam E, advances and bends the lower end of the wire across the narrow face of the former d, to close the loop. The pawl e withdraws as soon as the wire is bent, and the pointed swage f, secured
100 to the adjustable slide f', operated by the cam F, advances and enters the wire, forcing

a portion of the metal toward the corner of the loop, into which the wire is inserted to form the hinge of the pawl when separated by a diagonal cut, as is shown in Fig. 3. The loop is now completed. The former d is withdrawn below the plate, through which it projects, by the arm g entering an eye on the lower end of the stem, to which the former is secured. The arm g is secured to the rock-shaft g' , on which the arm g^2 is fixed, the upper end bearing against the cam G^3 and held against the same by a spiral spring secured to the lower end of the arm g^2 . The bending-jaws $d' d'$ are now drawn back by the cam D' , the cams $d^2 d^2$ allow the levers $d^3 d^3$ to come together under the tension of the coiled spring d^4 , and the jaws open and drop the formed loop. At this moment the former d' is raised again above the plate, a new length of wire is inserted, and the operation of bending, closing, and swaging a loop repeated.

By this construction a compact machine is produced, by which the loops for chain-swivels are made quickly, cheaply, and with absolute uniformity, a complete loop being produced, ready for slitting and drilling, at each revolution of the driving-pulley. All the parts are strong, durable, and ready of access.

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

1. In a machine for bending loops for chain-

swivels, the combination, with a former and means for feeding, cutting, and bending the wire, substantially as herein described, of the pawl e , constructed to close the loop, as described. 35

2. In a machine for bending loops for chain-swivels, the combination, with a former and means for feeding, cutting, and bending the wire, substantially as herein described, of the pawl e , constructed to close the loop, and the swage f , constructed to indent the wire and finish the loop, as described. 40

3. The combination, with the driving-pulley A and the shafts A' , B , and C , connected together by beveled gearing, of the cams D' , d^2 , G^3 , E , F , c^3 , and a^3 , secured to the said shafts, and the devices herein described operated by the cams to cut, bend, close, and swage a loop for a chain-swivel, substantially as described. 45

4. The combination, with the former d , of the wire-feeding slide a' , the clamp b , the cutter c , and stop c^4 , the reciprocating jaws $d' d'$, constructed to bend the wire around the former, the pawl e , and swage f , all operated, substantially as described, by cams secured to the shafts A' , B , and C , as and for the purpose set forth. 50

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Witnesses:

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