

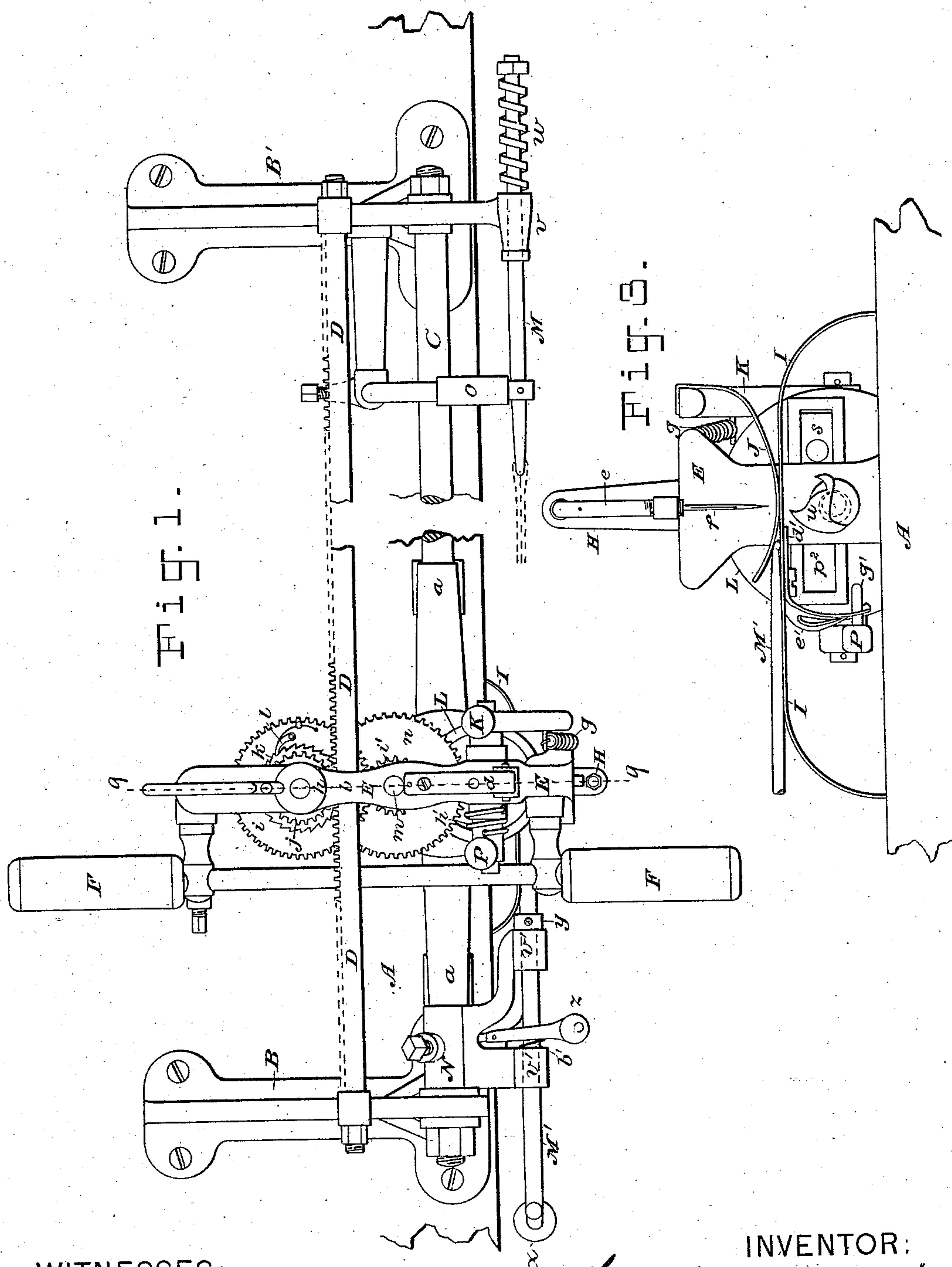
(No Model.)

4 Sheets—Sheet 1.

C. W. WEISS.
BAG SEWING MACHINE.

No. 290,952.

Patented Dec. 25, 1883.



WITNESSES:

E. B. Bolton
Geo. Bainton

INVENTOR:

Charles W. Weiss,

By his Attorneys,

By his Attorneys,
Burke, Fraser & Hornum

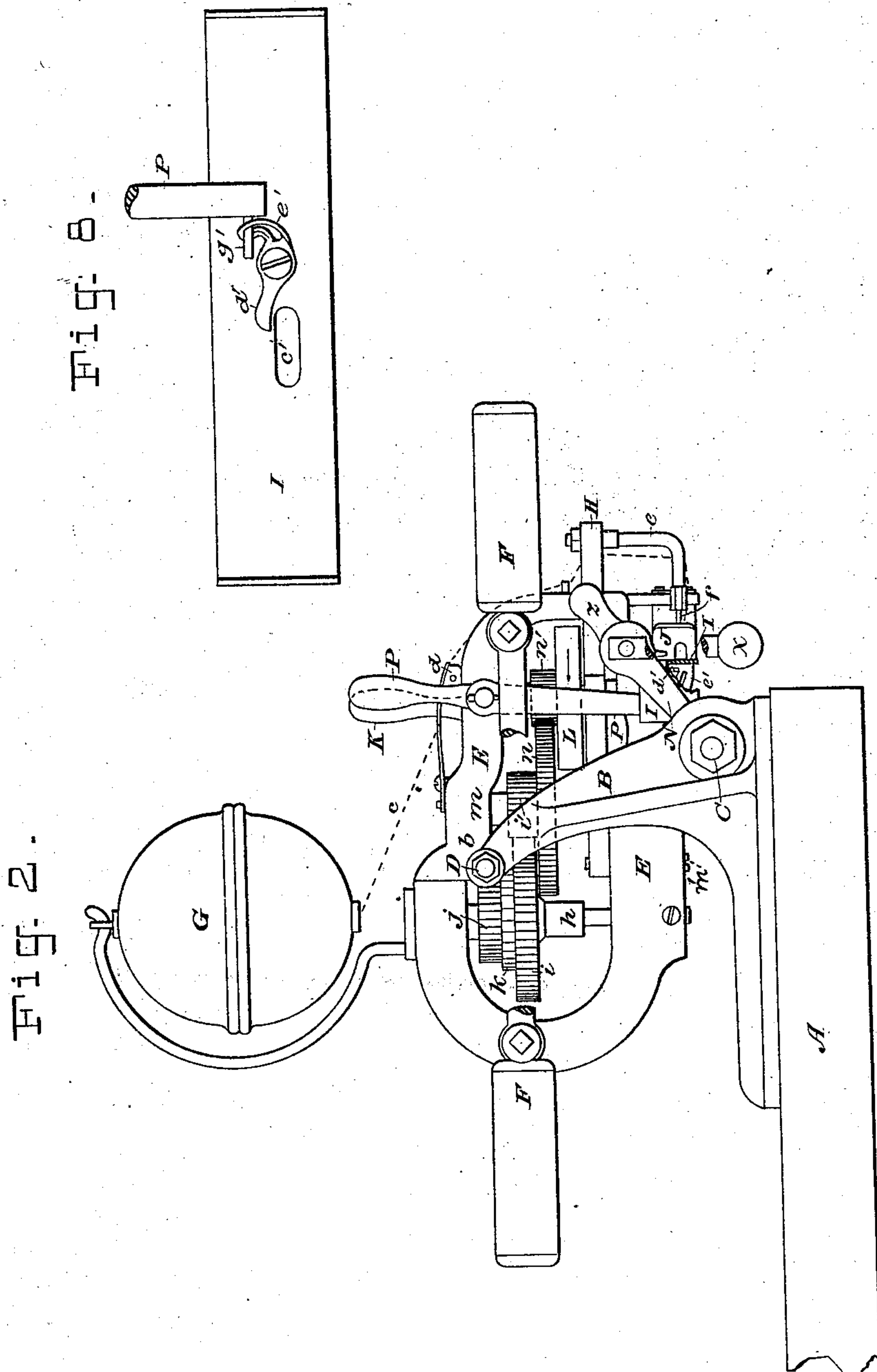
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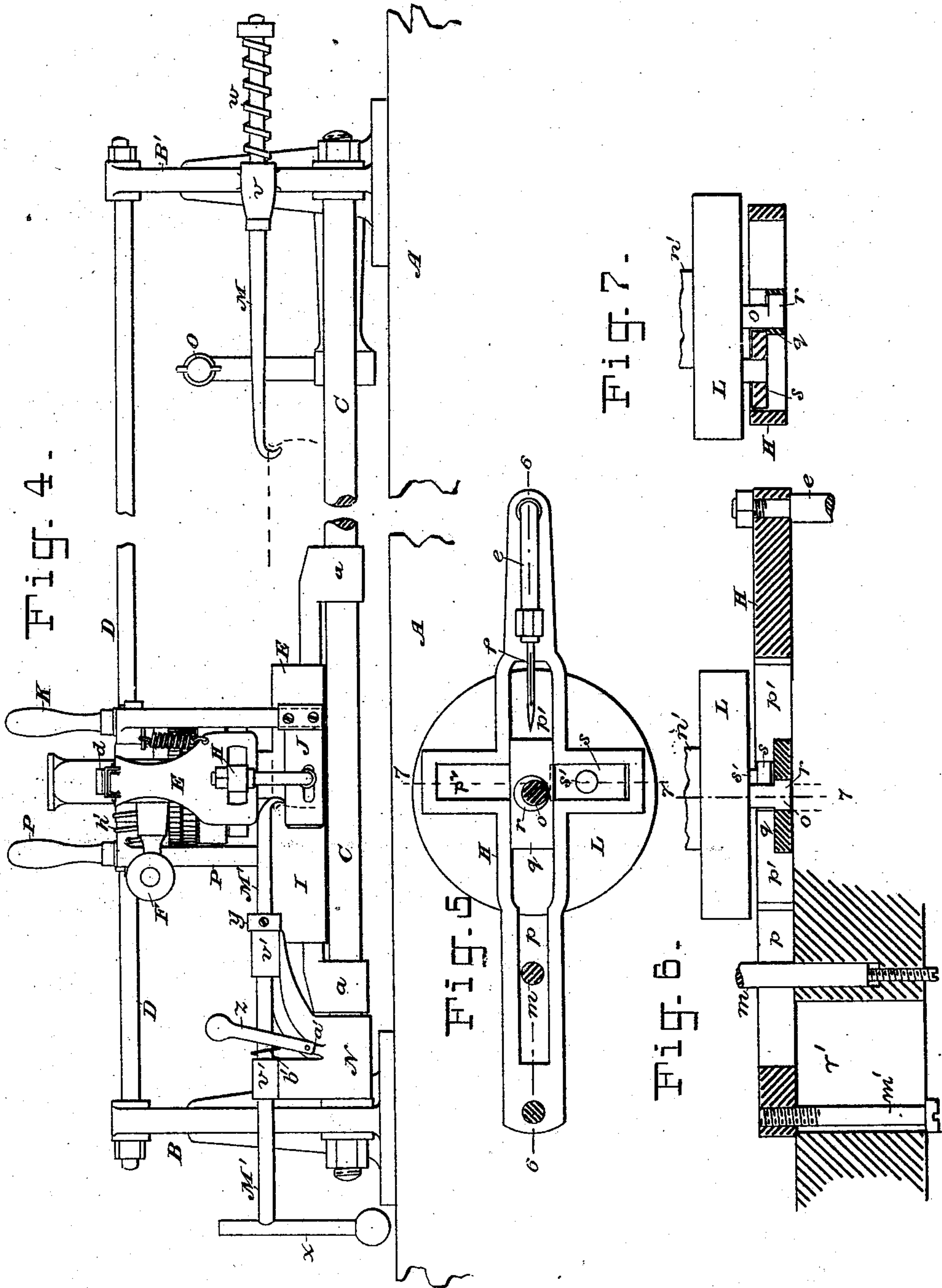
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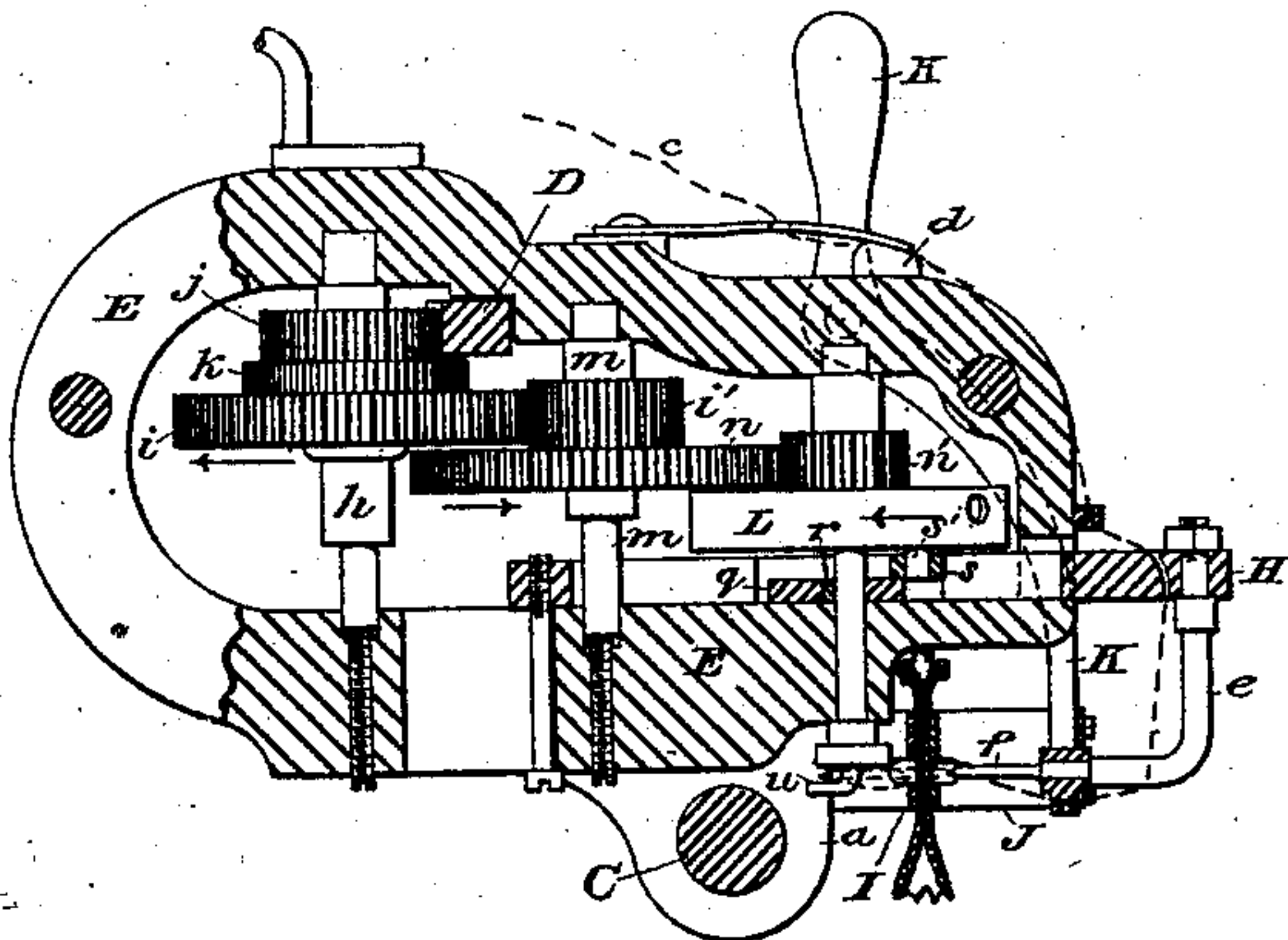
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Fig. 9.



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Geo. H. Fraser.

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UNITED STATES PATENT OFFICE.

CHARLES W. WEISS, OF BROOKLYN, NEW YORK, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO GEORGE I. CULLMER, GEORGE CORBETT, AND SARAH A. MARTIN, OF SAME PLACE, AND GEO. W. CORBETT AND WM. W. CORBETT, OF NEW BRIGHTON, NEW YORK.

BAG-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 290,952, dated December 25, 1882.

Application filed March 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. WEISS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Machines for Sewing Up the Mouths of Bags, of which the following is a specification.

My invention relates to that class of machines which are employed for closing the mouths of filled sacks or bags by stitching. The sewing-machine is mounted to slide on guides, and the stitching mechanism is actuated by the engagement of a pinion with a fixed rack. A belt or friction mechanism might, however, be substituted for the rack and pinion.

My improvements relate, in part, to the mechanism for stretching and supporting the bag-mouth while it is being sewed, in part to the construction of the stitching mechanism, and in part to a thread-cutting mechanism.

I will now describe my improved machine with reference to the accompanying drawings, in which—

Figure 1 is a plan of the same. Fig. 2 is an end elevation. Fig. 3 is a bottom view, or view of the under side, of the sewing-machine or mechanism. Fig. 4 is a front elevation, and Figs. 5, 6, 7, and 8 are detached detail views, which will be more fully described hereinafter. Fig. 9 is a vertical section of the machine on line 9 9 in Fig. 1. Figs. 3, 5, 6, 7, and 8 are on a larger scale than the remaining figures.

Let A represent a suitable table or base, upon which the mechanism is mounted; B B', end frames or supports; C, a connecting-bar or stretcher, upon which the sewing mechanism is mounted and on which it slides; and D, the rack-bar, which also extends between the frames B B' and engages a driving-pinion in the sewing-machine, as will be hereinafter more fully set forth.

E is the frame of the sewing-machine proper, which has sliding bearings at *a a* on the bar C and a bearing at *b* on the rack-bar D. To this frame E are attached cross-handles F F,

whereby the machine may be moved back and forth along the rack-bar. This is done by grasping the two handles F with the hands.

G (in Fig. 2 only) is the thread-holder; *c*, the thread; *d*, the tension device; H, the needle-bar; *e*, the needle-socket; *f*, the needle; I, the needle-plate, and J the presser-foot. This foot is attached to a lever-arm, K, which is pivoted to the machine-frame, and provided with a spring, *g*, which keeps the presser-foot pressed up normally toward the needle-plate.

Mounted rotatively in the frame E (see Figs. 1, 2, and 9) is the driving-shaft *h*, bearing the main driving spur-wheel *i* of the train, and mounted loosely on said shaft *h* is the driving-pinion *j*, which meshes with the teeth on rack D. To this pinion is attached a ratchet-wheel, *k*, which is engaged by a pawl, *l*, on the spur-wheel *i*, whereby, when the machine is moved along the rack in one direction, the pinion is caused to drive the train, but when moved in the other direction the pawl rides over the ratchet, and the train is not driven. The spur-wheel *i* meshes with a pinion, *i'*, on an intermediate shaft, *m*, and a spur-wheel, *n*, on this shaft meshes with the pinion *n'* on the shaft *o*, which bears the crank-wheel L, which reciprocates the needle-bar H.

Figs. 5, 6, and 7 illustrate the needle-bar and its operative mechanism on a scale double that of Fig. 1. Figs. 6 and 7 are respectively sectional views taken on lines 6 6 and 7 7 in Fig. 5, the former showing, also, the base or frame E in section. In Fig. 5 I have shown the needle-bar viewed from its under side and detached from the extraneous features of the machine. It is provided with a longitudinal guide-slot, *p*, through which the shaft *m* passes. In a wider continuation, *p'*, of this slot is fitted a block, *q*, which is bored to receive an eccentric, *r*, on the crank-shaft *o*. A cross-slot, *p*², in the bar is engaged by a block, *s*, bored to receive the crank-pin *s'*. It will readily be seen that in this construction the rotation of the crank-wheel L will impart two motions to the needle-bar: first, a reciprocating motion by reason of the engagement of the block *s* and pin *s'* with slot *p*², and, second, a slight laterally-swing-

ing motion by reason of the eccentric r and its block-engaging slot p' . The lateral oscillation is on a pin, m' , screwed into the tail of the bar H, and arranged to engage and play in a slot, r' , in the base of the frame E, as shown in Fig. 6. This pin serves as a fulcrum. On the lower extremity of the shaft o is fixed the hook u , (see Fig. 3,) which forms the chain-stitch. The hook is the same as that in the well-known Willcox & Gibbs sewing-machine, or it may be the same. This hook is not set exactly concentric with the axis of its shaft, for reasons that will be hereinafter explained. The blocks q and s each extend about half-way through the needle-bar, and rest on and play over each other when the machine is in motion. These blocks are longer than the width of the slots they cross, whereby their free movement is secured.

I will now describe the means for supporting and stretching the mouth of the bag in order that it may be firmly held and strained while it is being stitched.

Referring particularly to Figs. 1 and 4, M is a hook or hook-rod mounted in a bearing, v , in the end frame, B', and provided with a spring, w , on its shank. By pulling in the hook, the spring may be compressed by the sliding of the hook through its bearing; but the spring is made strong enough to resist considerable force exerted to move the hook. In a bracket, N, secured to bar C, is mounted another hook, M', which has two bearings, v' v' , and a handle, x . This hook has a collar, y , on its shank, which prevents it from being drawn out or back too far, and a friction-clutch, which holds it when drawn back. This clutch consists of a lever, z , loosely pivoted at a' in the bracket N. The shank of hook M' passes loosely through a hole in lever z , and a coil-spring, b' , arranged between the lever and bearing v' , cants the lever forward, normally, as far as it can go. When canted in this manner, the hook may be drawn back, (to the left in Fig. 4,) but cannot be moved in the other direction, except by pressing back lever z so as to compress the spring b' . A ratchet device or some other known form of brake might be substituted for the clutch just described.

The length of the machine—that is, the space between the end frames B and B'—will depend upon the kind of work to be done. It should be long enough to take in bags of the largest size intended to be sewed.

The bag to be sewed may be set on a platform of such a height as to bring the top of the bag up to the level of the machine; but this is not a matter of importance so far as my present invention is concerned.

I will now describe the operation of the machine.

A filled bag is placed on the platform or floor in the proper position, and the hook M is made to engage its mouth, as indicated by the dotted lines in Figs. 1 and 4. The hook M' is then made to engage the mouth on the

opposite side in the same way, and the mouth is then stretched flat by drawing out the hook M' until the collar y strikes the bearing v' . If the bag is a little narrower than the standard or normal size, the spring w will permit hook M to yield a little. All the variation should be at the hook M, as it is important that the other edge of the bag-mouth should be properly presented to the needle of the machine—that is to say, when the sewing-machine stands at the starting-point, as in Figs. 1 and 4, it is as far to the left as it can go, its bearing a being in contact with the bracket N. The needle f then stands in a certain position with respect to the tip of hook M', when the latter is drawn back until collar y contacts with bearing v' . Fig. 4 shows this position of the parts, and illustrates the position of the needle with respect to the edge of the bag where the stitching begins. It is important that the stitching should begin close to the edge of the bag, and also that at its first stroke the needle should enter the material of the bag. It will be understood that by adjusting or setting the bracket N along on the rod C the machine may be adapted to sew any size of bag smaller than the maximum, as this bracket serves as a stop for the movement of the machine toward the left; but the slight variation in one class of bags is taken up by spring w . Before the stretching of the bag is completed, care should be taken that the edge of the same be properly clamped between the presser-foot J and needle-plate I. Everything being now ready, the operator grasps the cross-handle F and pulls or pushes the sewing-machine along on its bearings (at a and b) toward the right in Fig. 4. The engagement of the pinion j with the fixed rack D produces rotary motion of the hook u and reciprocation of the needle f through the medium of the mechanism hereinbefore described. When the machine has been pushed along far enough to stitch across the bag-mouth, the crank-wheel L strikes a pad O, mounted on some fixed part of the frame, and this arrests simultaneously the movement of the machine and the rotation of said wheel L. This is very important, as the ratcheting of the pinion would, even though the movement of the machine were stopped, permit the momentum of the crank wheel to reciprocate the needle several times and tangle the thread around the hook. The thread is now cut by a mechanism mounted on the sewing-machine, which I will now describe with reference to Figs. 2, 3, and 8, the latter of which is a rear view of the needle-plate, showing the cutter mounted therein. In the needle-plate I is a hole or slot, c' , through which the needle plays, and on the needle-plate adjacent to this slot is pivoted the cutter or cutting-blade d' . The tail e' of this blade is bent into a curve and slotted to receive a pin, g' , on the lower end of a lever, P, pivoted to the frame E, and provided with a retracting-spring, h' . When this lever is pushed over,

(to the left in Fig. 2,) the blade d' is caused to play across the slot c' and cut off the thread which is stretched between the hook u and the material of the bag. The machine is now
5 pushed back to the starting-point, the bag released from the hooks, and another bag placed for sewing.

I will now explain the object I have in giving to the needle-bar the lateral horizontal
10 swing by means of the eccentric r , (shown in Figs. 5, 6, and 7.)

When the machine is moved along bodily over the stationary bag, the feeding motion, unlike that of the ordinary sewing-machine,
15 is continuous with respect to the material being sewed, and the needle has of course a lateral or sidewise motion simultaneous with its reciprocating motion. Consequently, unless proper precautions were taken, the lateral
20 pressure on the needle would be sufficient to spring it badly, if not to snap it off. To obviate this I swing the needle laterally in the direction opposite to that in which the machine is moving while it is in the goods or
25 material of the bag—that is, during that half of its movement while it is engaged with the material of the bag, or nearly so—thus compensating for the forward movement of the machine by a backward movement of its needle. This movement is not usually great; but,
30 whatever it may be, the eccentric r should be sufficient to effect it. As the needle must correspond to the hook u , I set the hook eccentric with the shaft o to the proper extent, as before stated. To swing the needle laterally at the proper time—that is, while in the material being sewed—the throw of the eccentric is set opposite to the crank-pin s' , and the hook u is set over to the same side.

I wish it understood that I do not limit myself to the precise construction and arrangement of the parts as herein shown, as these may be departed from to some extent without materially affecting my invention—
45 as, for example, a cam in lieu of eccentric r might be employed for imparting a lateral motion to the needle-bar, and some other well-known form of hook u might be employed in lieu of that shown. The hooks M
50 M' might also be pinchers to grasp the bag.

I do not claim, broadly, every form of machine for sewing up the mouths of bags, nor a machine for this purpose actuated by moving it along a fixed rack; but

What I believe to be new and what I claim 55 is—

1. In a machine for sewing up the mouths of bags, the mechanism for stretching and supporting the mouth of the bag, comprising the hook M , provided with a pendent projection 50 at its tip to engage the bag-mouth, the sliding hook M' , provided with a like pendent projection, and the clutch-lever z and its spring, all arranged to operate substantially as set forth. 65

2. In a machine for sewing up the mouths of bags, the combination of the hook M , mounted to slide in its bearing, and provided with a spring, w , the hook M' , mounted to slide in its bearings, and provided with a stop-collar, 70 y , and means, substantially as described, for clutching and holding said hook when drawn back in stretching the mouth of the bag, all arranged to operate substantially as set forth.

3. The combination, in a machine for sewing up the mouths of bags, of the means for 75 imparting to the needle a longitudinal reciprocating and lateral oscillating motion, comprising the cross-slotted needle-bar, the shaft o , eccentric r , wheel L , and its crank-pin s' , 80 and the sliding blocks q and s , arranged to play or slide over each other, all arranged to operate substantially as set forth.

4. The combination, in a machine for sewing up the mouths of bags, of the fixed rack-bar, 85 the driving-pinion j , the intermediate train of gears, the crank-wheel provided with pin s , the shaft m , the slotted needle-bar, the shaft o , eccentric r , block q , hook u , mounted eccentrically on its shaft, and the needle and its 90 socket, all arranged to operate substantially as set forth.

5. The thread-cutter comprising the blade d' , pivoted to the needle-plate and provided with a curved and slotted tail, e' , and the lever P , provided with a pin, g' , to engage the 95 slot in said tail e' , all arranged to operate substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing 100 witnesses.

CHARLES W. WEISS.

Witnesses:

HENRY CONNETT,
ARTHUR C. FRASER.