

No. 632,676.

Patented Sept. 5, 1899.

J. CROOK & E. WHITEHEAD.  
SEWING MACHINE FOR SEWING MOUTHS OF BAGS.

(Application filed Nov. 25, 1898.)

(No Model.)

4 Sheets—Sheet 1.

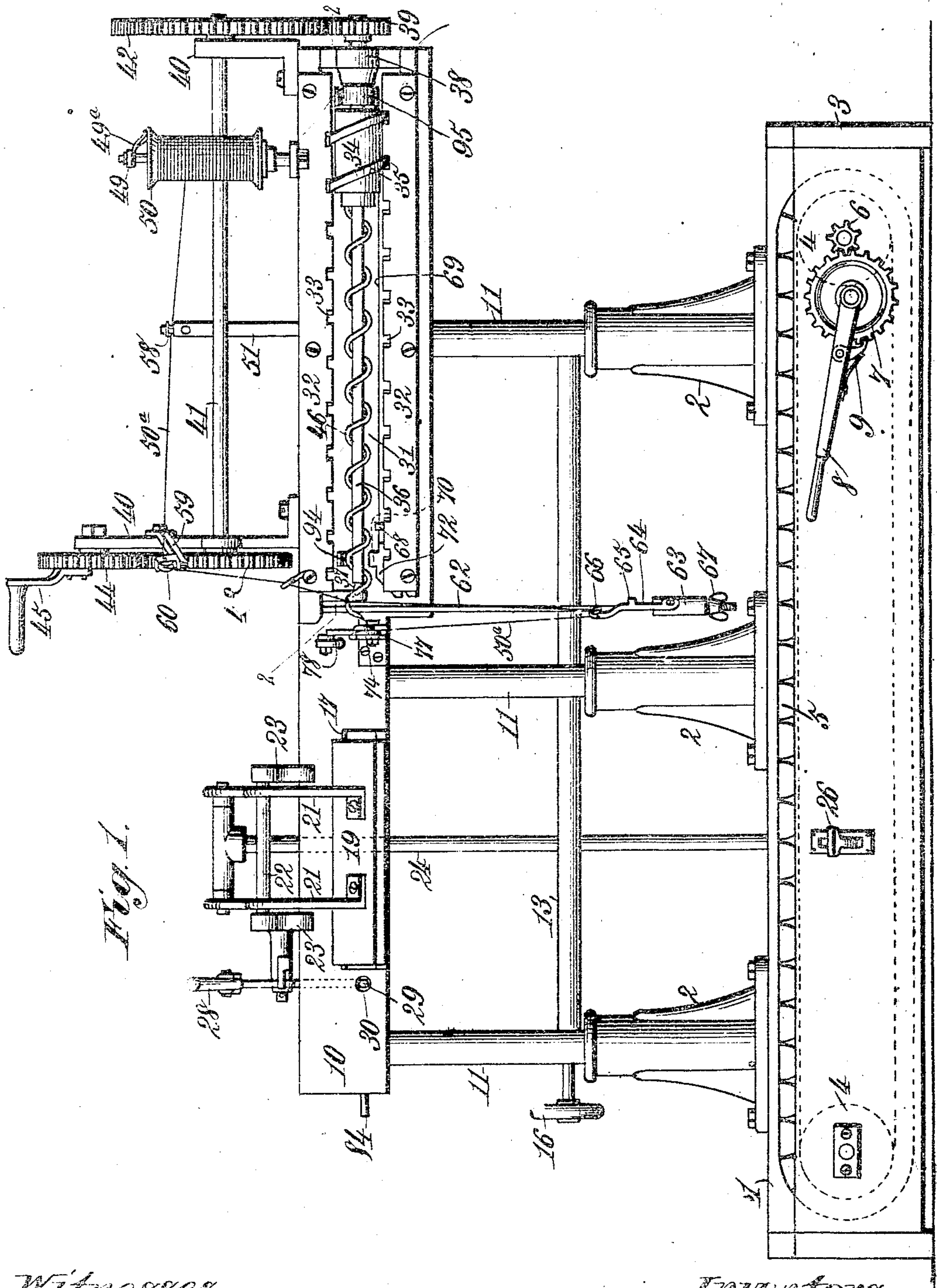


Fig. 1.

Witnesses.  
Robert Crook.  
J. B. Kuyper.

Inventors  
John Crook  
Ernest Whitehead.  
By James L. Norris  
Atty.



No. 632,676.

Patented Sept. 5, 1899.

J. CROOK & E. WHITEHEAD.

SEWING MACHINE FOR SEWING MOUTHS OF BAGS.

(Application filed Nov. 25, 1898.)

4 Sheets—Sheet 2.

(No Model.)

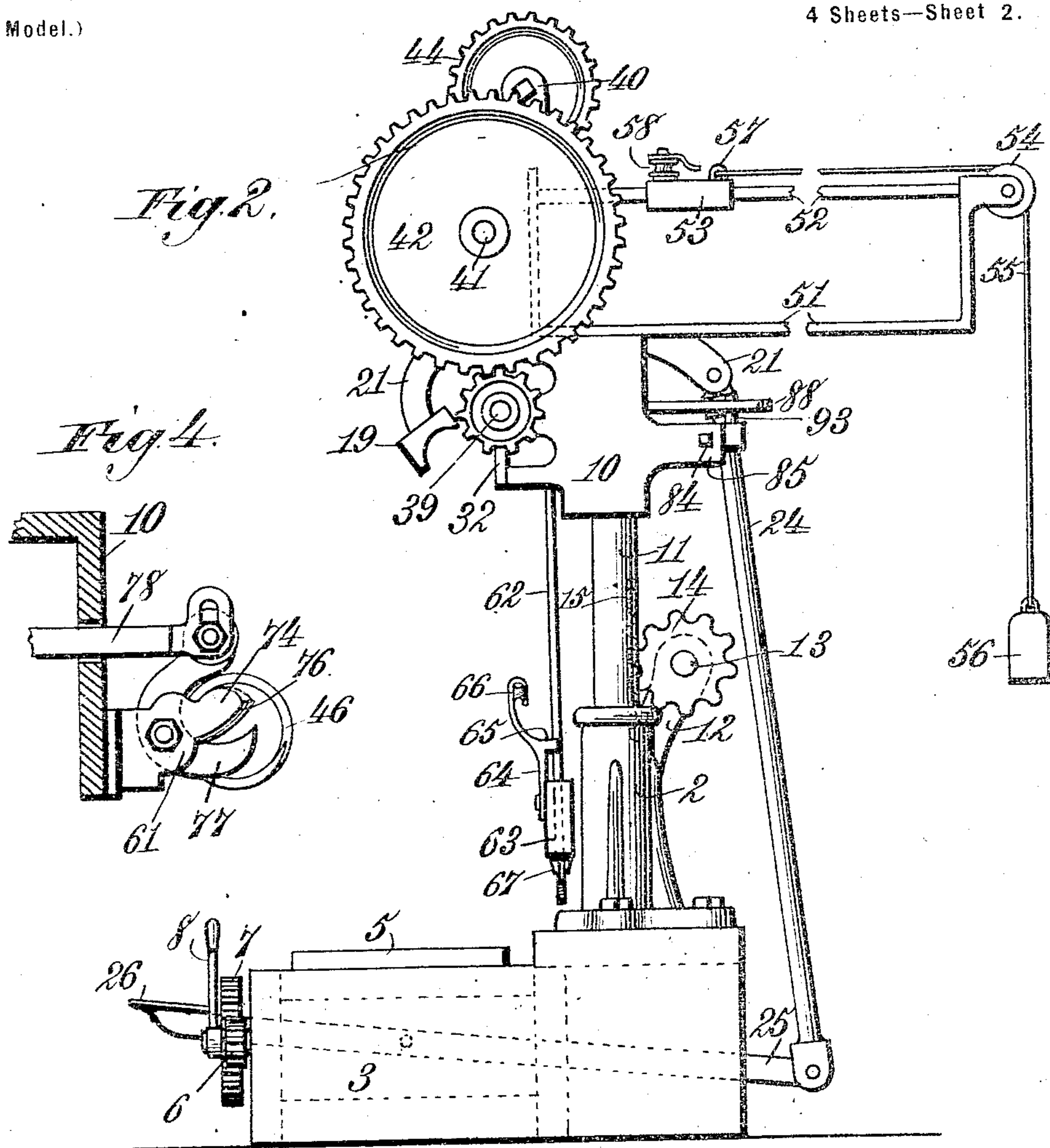


Fig. 4.

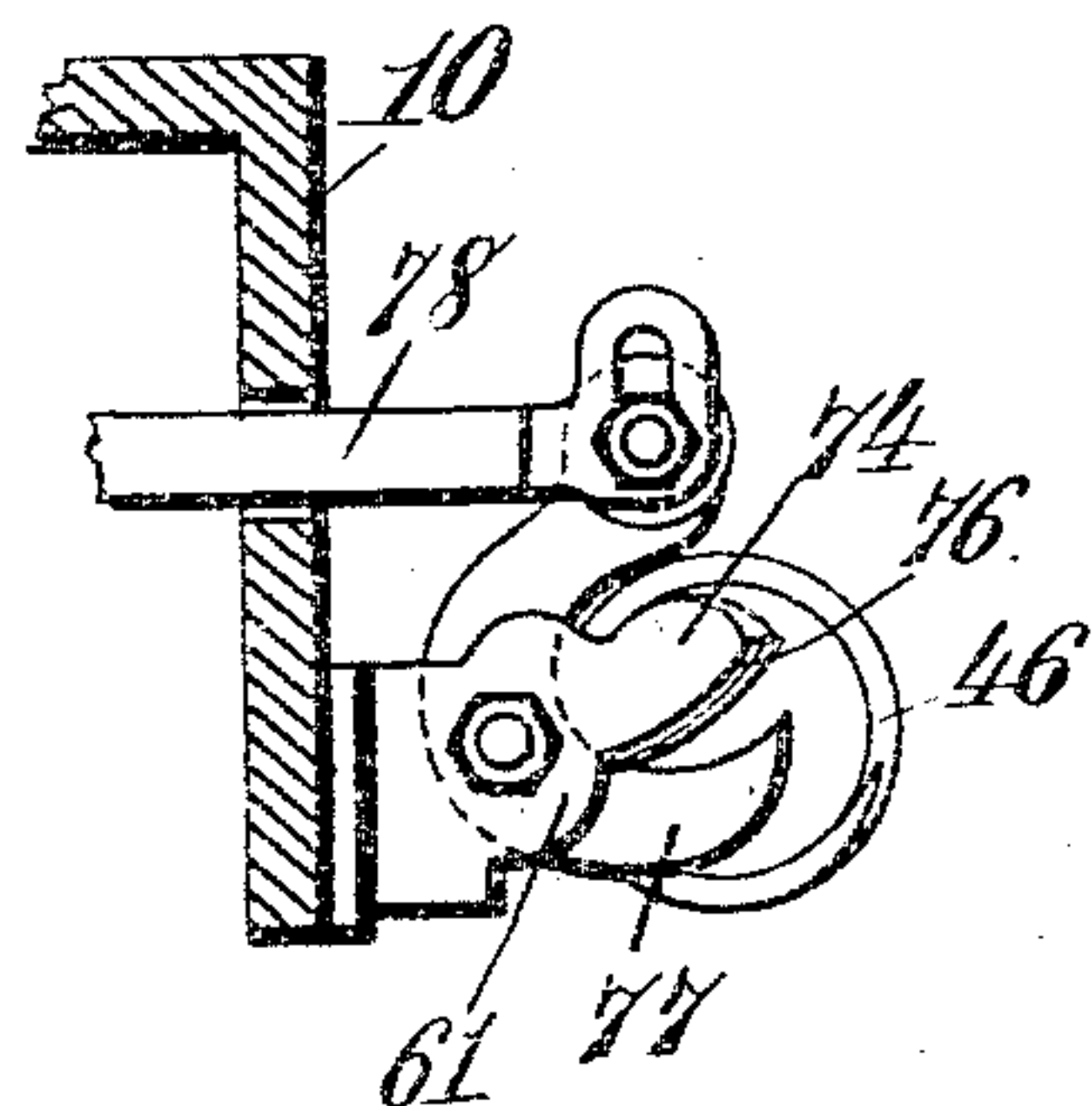
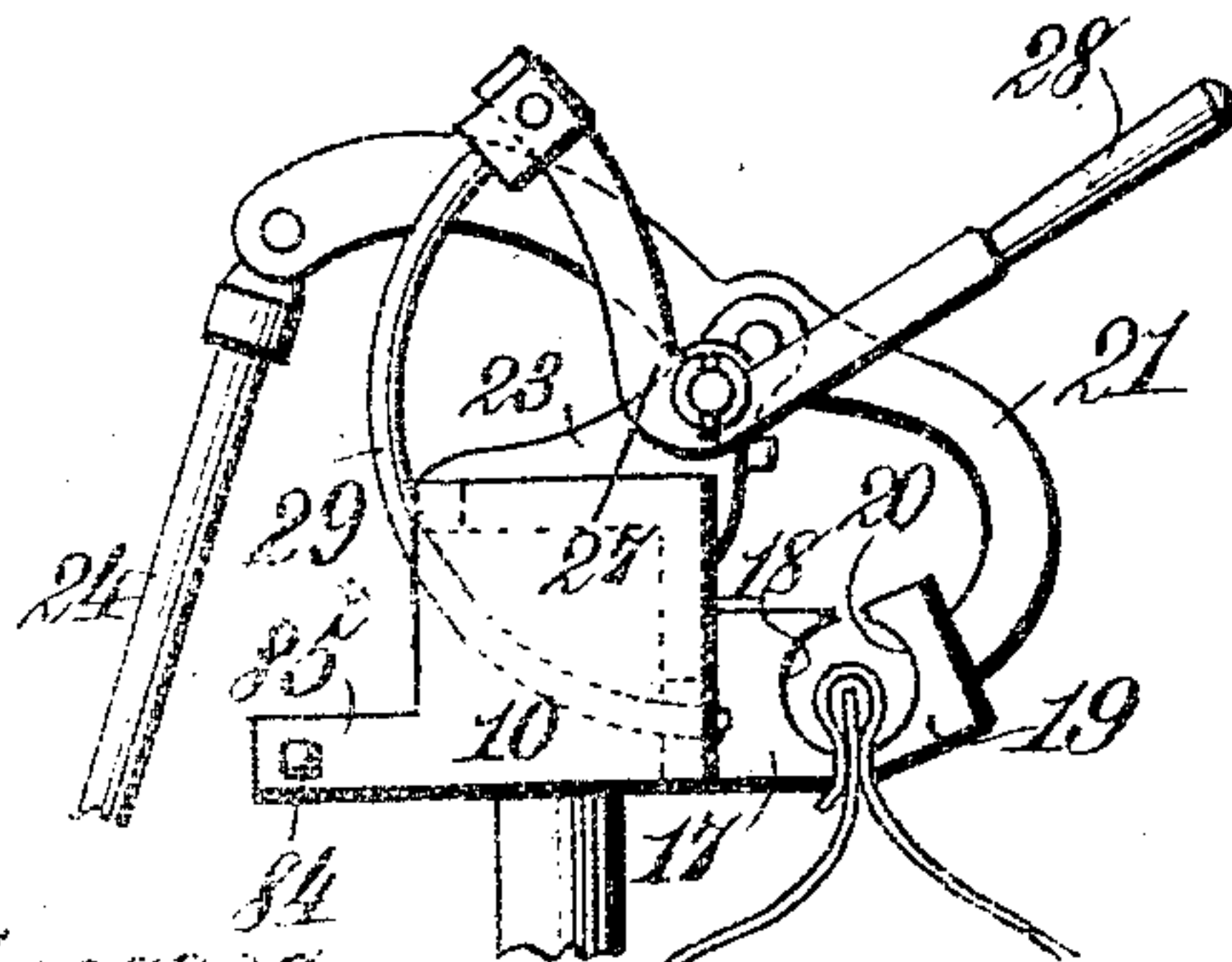
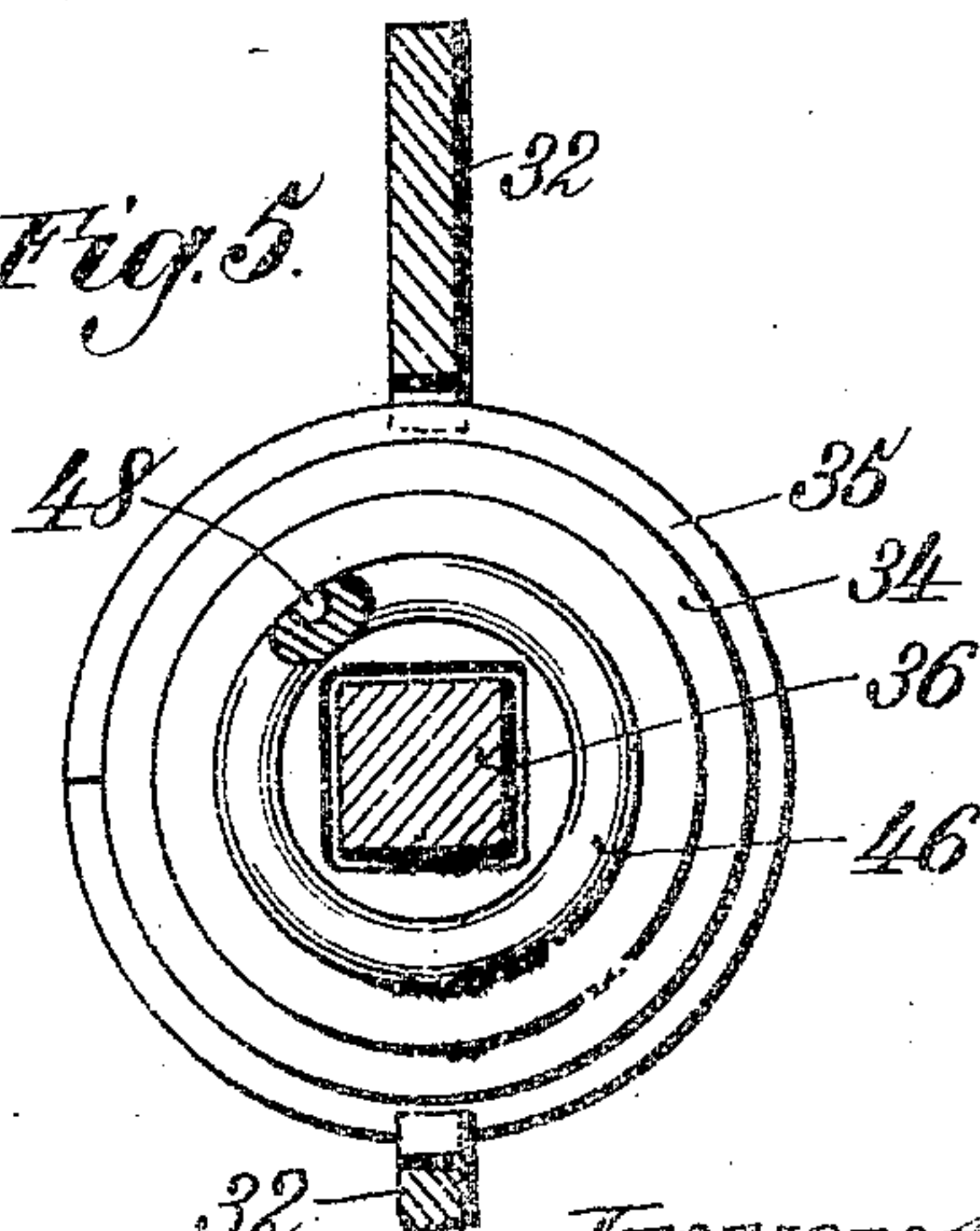


Fig. 3.



Witnesses  
Robert Emmett,  
Atty. for

Fig. 5.



Inventors,  
John Crook,  
Ernest Whitehead,  
By James L. Norris,  
Atty.



No. 632,676.

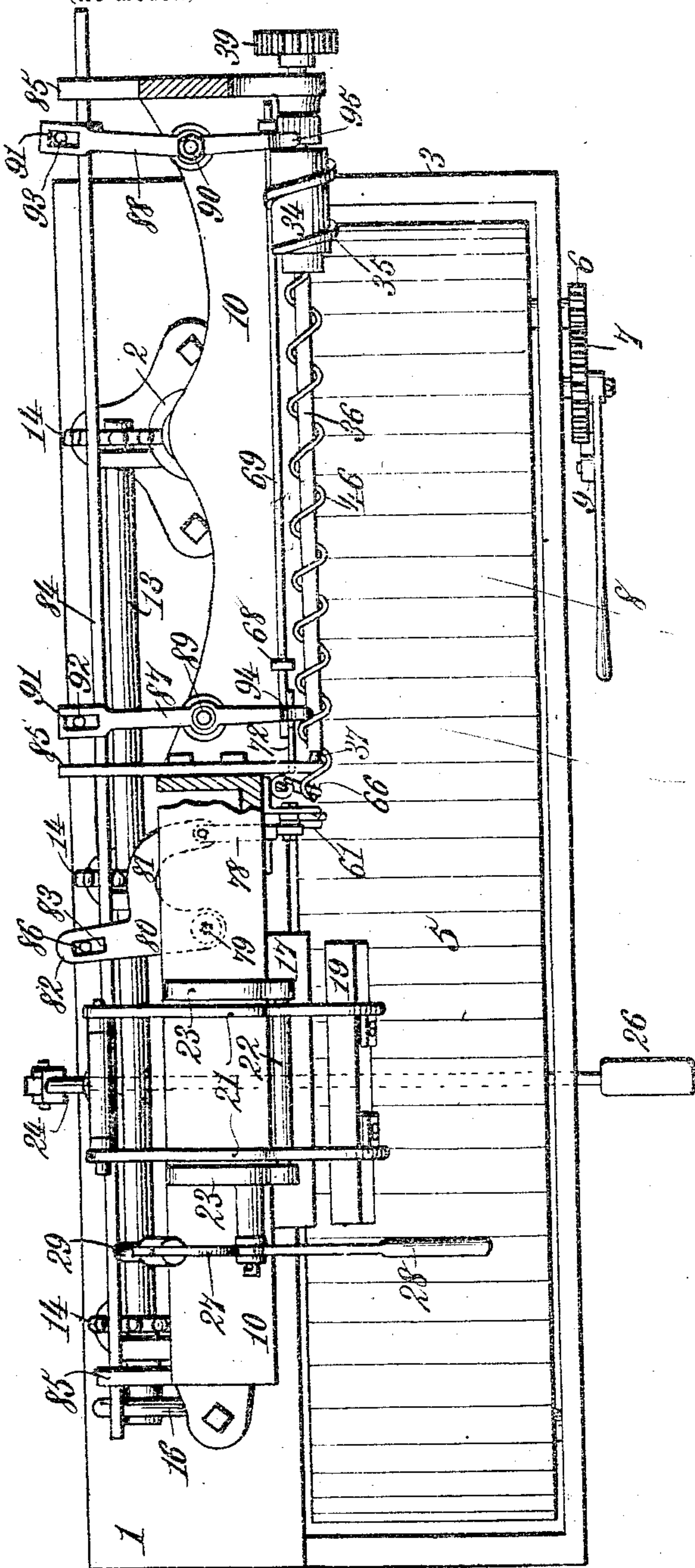
Patented Sept. 5, 1899.

J. CROOK & E. WHITEHEAD.  
SEWING MACHINE FOR SEWING MOUTHS OF BAGS.

(Application filed Nov. 25, 1898.)

4 Sheets—Sheet 3

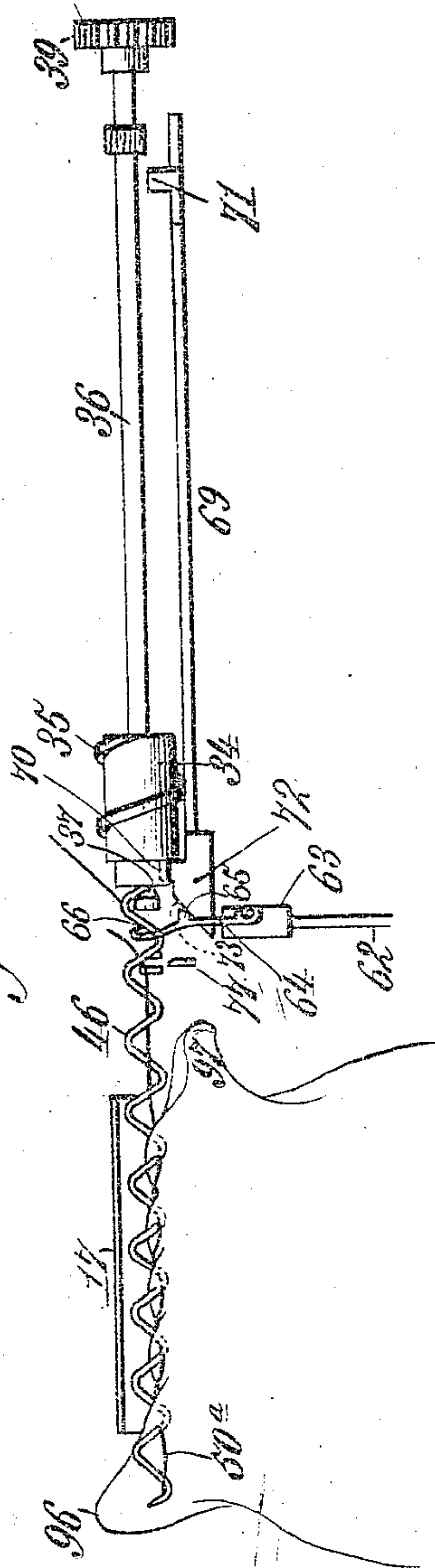
(No Model.)



Witnesses.  
Robert Everett.  
J. B. Kiefer

Fig. 6.

Fig. 7.



Inventors.  
John Crook.  
Ernest Whitehead  
By James L. Norris.  
Atty.



No. 632,676.

Patented Sept. 5, 1899.

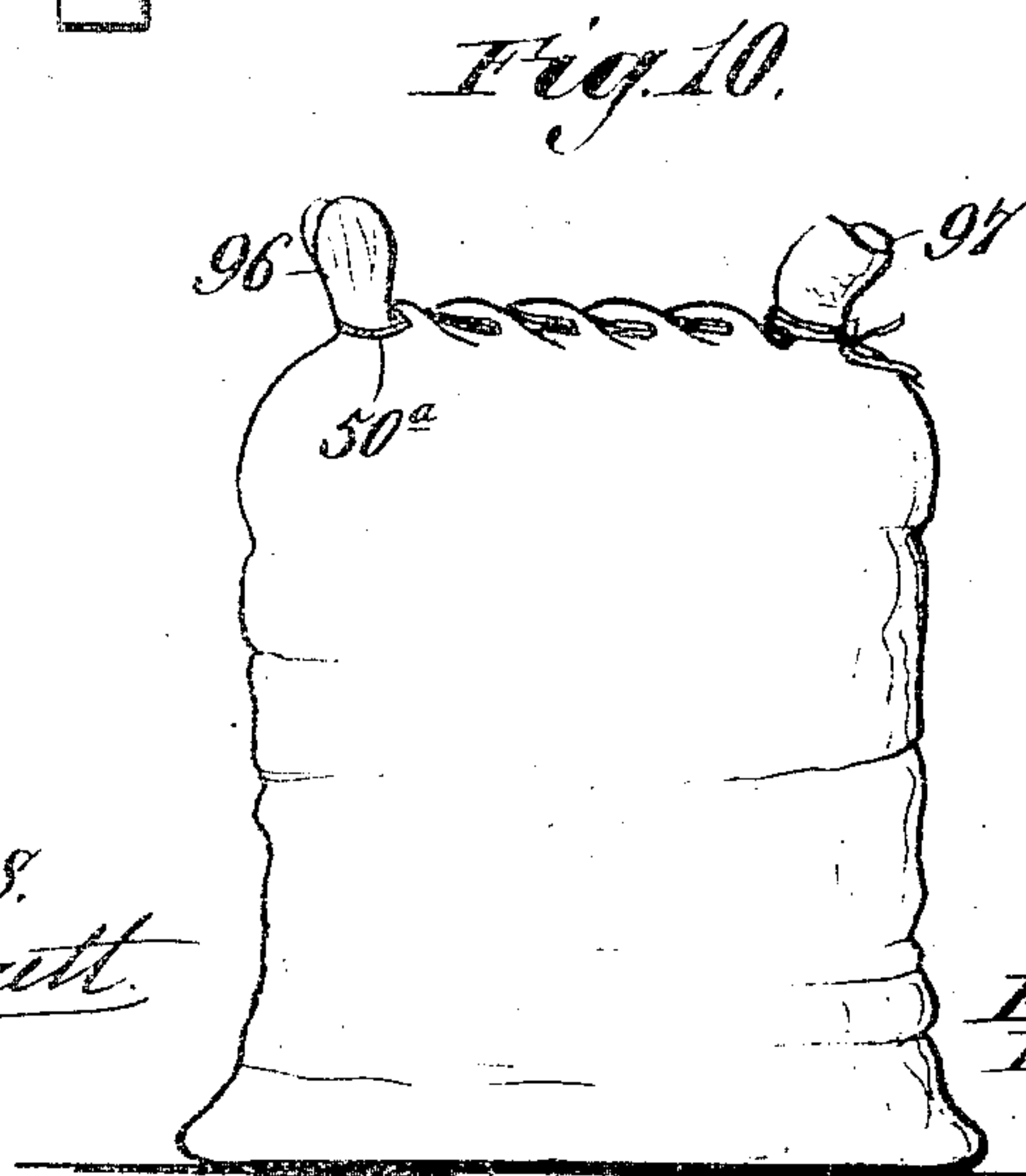
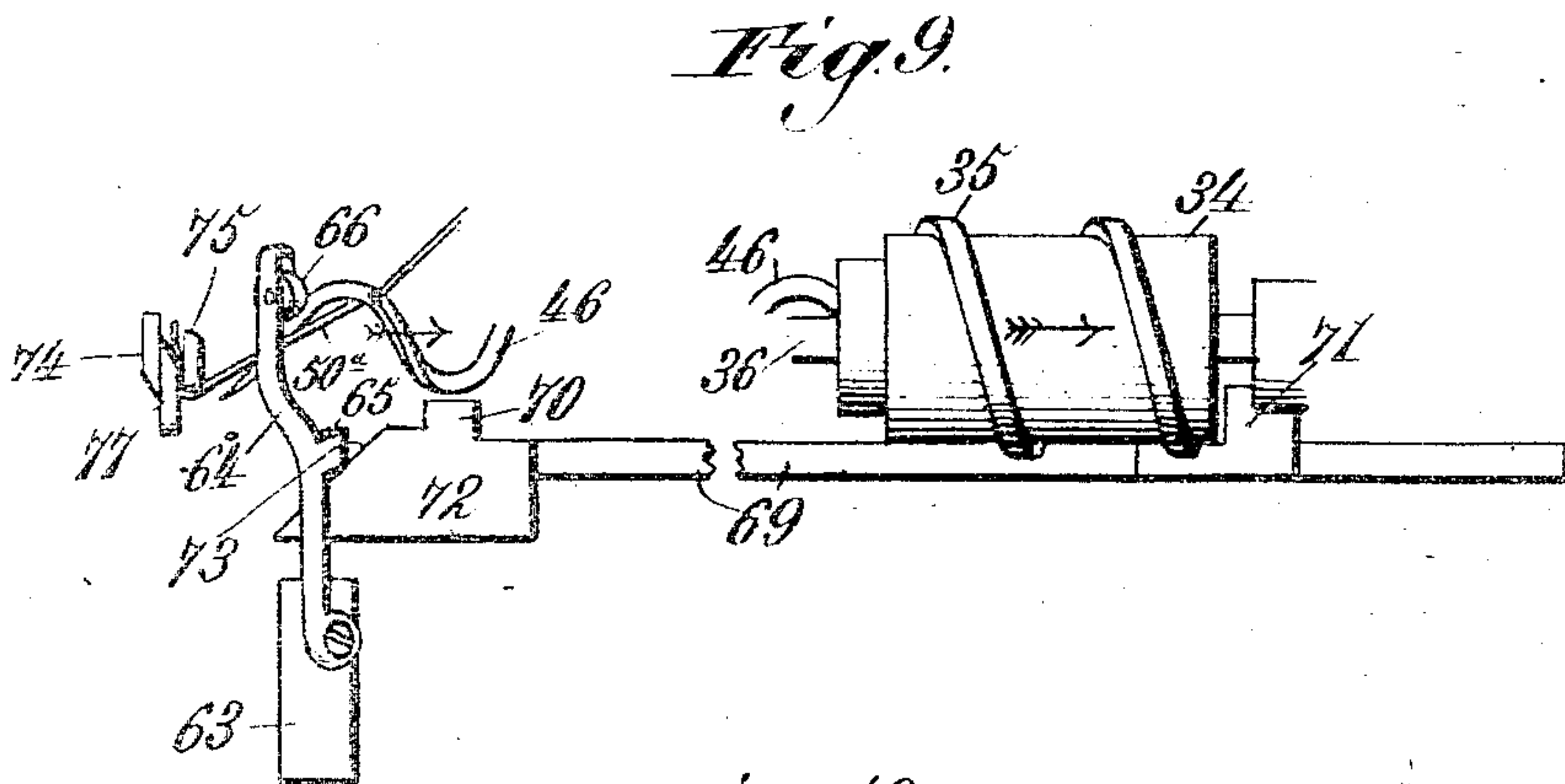
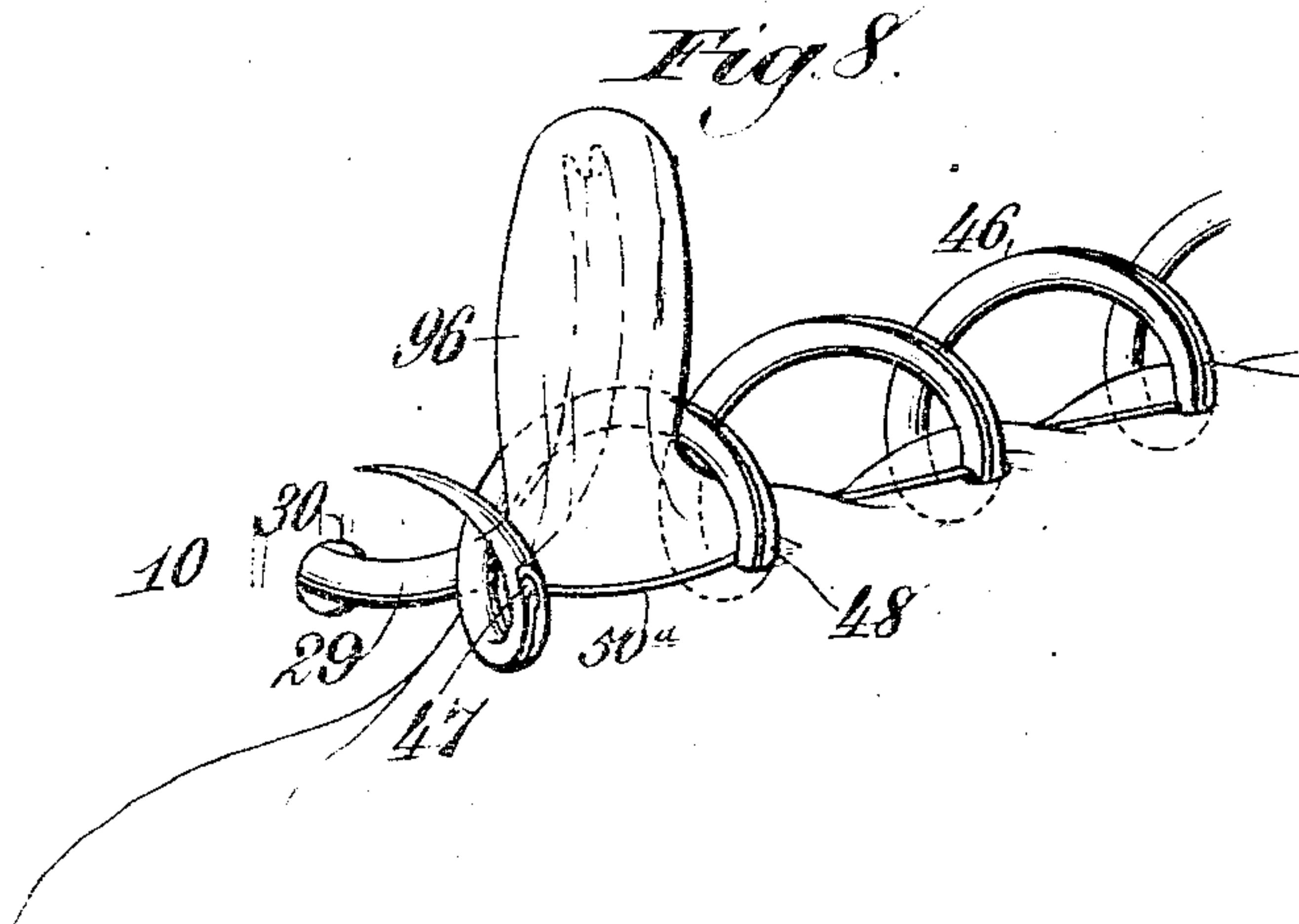
J. CROOK & E. WHITEHEAD.

SEWING MACHINE FOR SEWING MOUTHS OF BAGS.

(Application filed Nov. 25, 1898.)

(No Model.)

4 Sheets—Sheet 4



Witnesses:  
*Robert Crook*  
*Ernest Whitehead*

Inventors:  
*John Crook*  
*Ernest Whitehead*  
By *James L. Norris*  
*Atty*



# UNITED STATES PATENT OFFICE.

JOHN CROOK AND ERNEST WHITEHEAD, OF SURREY HILLS, NEW ZEALAND.

## SEWING-MACHINE FOR SEWING MOUTHS OF BAGS.

SPECIFICATION forming part of Letters Patent No. 632,676, dated September 5, 1899.

Application filed November 25, 1898. Serial No. 697,450. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN CROOK, hatter, and ERNEST WHITEHEAD, baker, subjects of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, and residents of Surrey Hills, near the city of Auckland, in the provincial district of Auckland and Colony of New Zealand, have invented a certain new and useful Sewing-Machine for  
5 Sewing the Mouths of Bags or Sacks when Full, of which the following is a specification.

Our invention relates to a machine for sewing up the mouths of filled sacks, such as are used for bagging sugar, flour, grain, and the like. This work has heretofore commonly  
15 been done by hand, although we are aware that attempts have been made to perform the operation by means of machines. The mechanical sewing of filled sacks has never to  
20 our knowledge, however, passed beyond the experimental stage by reason of the fact that no practical machine has been devised which would reliably and rapidly perform the work and offer any decided advantage over hand  
25 labor.

It is the general object of our invention, therefore, to provide a machine which shall be simple in construction, reliable in operation, and which shall operate to sew up the mouths  
30 of sacks which have been filled in as secure a manner as can be done by hand and far more expeditiously.

Our invention therefore consists in the features of construction and combinations and  
35 operations of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

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

40 Figure 1 is a front elevation of the machine. Fig. 2 is an end elevation, looking toward the left. Fig. 3 is a similar view, looking in the opposite direction and showing the mouth of the sack held in the clamping-jaws and also  
45 showing the device for forming the ear on the sack. Fig. 4 is a detail view of the cutting mechanism, the cutting-blade being in a lowered position. Fig. 5 is a transverse sectional view through the spindle, the needle, and the  
50 notched guides for the head carrying the needle. Fig. 6 is a sectional plan view of the top portion thereof, the section being taken

on the line 2-2 of Fig. 1. Fig. 7 is a front elevation of certain parts of the machine to illustrate the position of these parts at the end of  
55 the forward movement of the head and needle. Fig. 8 is a detail perspective view illustrating the manner of forming the ear on the sack. Fig. 9 is an enlarged view, in front elevation, illustrating the position of the parts  
60 as the head and needle near the end of the backward movement; and Fig. 10 is a view of a sack which has been sewed and secured according to our invention.

The reference-numeral 1 indicates the base  
65 of the machine, upon which are supported hollow standards 2.

The numeral 3 indicates an extension of the platform at the front of the machine, having at each end a roller 4, on which rollers is supported an endless carrier 5. The platform  
70 extension 3 is open at the top, and the carrier 5 travels in this opening and provides a movable surface for conveying the filled bags or sacks to and from the sewing mechanism, 75 as more fully hereinafter explained. At the right-hand end of the machine, as shown in Fig. 1, the shaft of the roller 4 has on its end a small gear-wheel 6, which meshes with a large gear-wheel 7, journaled on the platform  
80 extension 3.

The numeral 8 indicates a handle which is journaled at its lower end on the shaft of the gear 7 and carries a ratchet 9, engaging the  
85 teeth of said gear. By moving the handle 8 toward the left the gear-wheel 7 will be turned and through the medium of gear 6 will operate to move the carrier 5 a given distance toward the right.

The numeral 10 indicates an upper support, 90 on which are mounted the main operating parts. Depending from the under side of this support are a series of pillars 11, which are movably seated in the hollow standards 2. Journaled in suitable bearings 12 on these  
95 standards is a rod 13, having cogs 14 secured at intervals thereon, which cogs mesh in racks 15, one of which is provided on the rear side of each pillar 11, as shown in dotted lines in Fig. 2. On the end of the rod 13 is a hand-  
100 wheel 16 for turning the rod. By turning this rod in one direction or the other the support 10 may be raised or lowered, according to the height of bags or sacks to be sewed,



and held in its adjusted position in any suitable manner. Near the left-hand end of the support 10 is located the device for clamping and holding the upper edges of the sack to be  
 5 sewed. This device comprises the following parts: Secured on the front of support 10 is a jaw 17, having a longitudinal concave or recess 18. The numeral 19 indicates a complementary jaw having a similar concave or recess 20. The jaw 19 is secured to one end of  
 10 a pair of levers 21, which are journaled on a short shaft 22, secured in bearings 23, mounted on the upper side of support 10. The opposite or rear ends of the levers 21 are pivotally secured to the upper end of a rod 24,  
 15 which at its lower end is pivotally connected to a bar 25, fulcrumed in the base of the machine and extending through the same to the front of the machine, where it is provided  
 20 with a treadle 26. By pressing down on this treadle the rod 24 is raised, thereby rocking the lever mechanism 21 and causing the jaw 19 to be brought in contact with the jaw 17. In practice the lower edges only of these jaws  
 25 engage the bag between them, as shown in Fig. 3. Journaled on one of the bearings 23 is a bell-crank lever 27, one member of which is extended to afford a handle 28. To the other member of this lever is secured a curved  
 30 arm 29, which works in an opening 30 in the support 10. By moving the handle 28 toward the rear of the machine or in a direction away from the operator the curved arm 29 is caused  
 35 to move outward or toward the operator through the opening 30. The purpose of this device will be presently described.

The mechanism for sewing the sacks and the parts cooperating therewith will now be described.

40 The right-hand portion of the support 10 is provided with a longitudinal opening 31. Secured along the front of the support 10 and at the bottom and top edges, respectively, of this opening are two steel plates 32, the oppos-  
 45 ing edges of which are provided with notches 33, which are so arranged as to form sections of a complete interior screw-thread. Mounted between these plates is a revolving head  
 50 34, provided with a circumferential spirally-arranged rib 35, engaging in the notches 33 in the manner of a screw-thread. The head 34 is non-rotatively and slidably mounted on  
 55 a revolving square spindle 36, which at its inner end is mounted on a point-bearing, as shown at 37, and at its opposite end is journaled in and extends through a bearing 38,  
 the bearings 37 and 38 being located, respectively, at opposite ends of the slotted portion of the support 10. Secured on the outer end  
 60 of spindle 36 is a gear 39. Mounted in bearings 40, located, respectively, near opposite ends of the slotted part of the support 10, is a shaft 41, having on its outer end a gear 42,  
 which meshes with the gear 39, and on its inner  
 65 end a gear 43. The inner bearing 40 is extended upward a sufficient distance to permit of a gear 44 being mounted on a bearing

at the side thereof, said gear 44 meshing with the gear 43 and being revolved by means of a crank-arm 45. The plates 32 form, as it  
 70 were, a notched or screw-threaded guide for the head 34, so that when the spindle 36 is revolved in one direction or the other through the medium of the mechanism just described  
 75 the head 34 will be caused to revolve and to slide backward or forward on the spindle by reason of the engagement of the spiral rib or  
 80 thread 35 with the notches 33. Secured on the inner end of head 34 is a long spiral needle 46, made of tempered spring-steel, said  
 85 needle having a pointed end and being provided near said pointed end with an eye 47. The outer circumferential surface of the spiral needle is provided with a continuous groove  
 90 48, which extends from the butt of the needle to the eye 47. In its normal position the needle 46 lies coiled about but out of contact with the spindle 36. The spiral rib or  
 95 thread 35, being of a greater circumference than the spiral needle, is given a less pitch than that given the spirals of the needle; but the distance in a straight line between the  
 convolutions of the spiral needle and the convolutions of the spiral rib or thread 35 is the same, so that the screw motion or throw of  
 the head is the same as that of the needle.

Located on the support 10, at about the relative position shown, is a vertical spindle 49 for receiving a bobbin 50, containing the  
 100 thread 50<sup>a</sup> for sewing the sacks. In order to prevent the bobbin from turning too freely, we may employ any suitable form of tension device. Secured on the support 10, about centrally of the slotted portion thereof and extending therefrom to the rear, is a rectangular  
 105 frame 51, the upper bar 52 of which is squared to form a guide for a slide 53, mounted thereon. At the rear of frame 51 is a roller 54, over which passes a cord 55, having at its outer end a weight 56. The opposite end  
 110 of the cord 55 is secured in an eye 57 on slide 53. On the slide 53 is mounted a roller 58. On the inner bearing 40 is secured an arm 59, on which is mounted a roller 60. The cord from the bobbin is passed around the  
 115 roller 58 and thence over roller 60 and through the eye of the needle to the combined cutting and holding mechanism 61, to be presently described, where its end is secured. The  
 120 slide 53, with the weighted cord 55, affords an automatic tension or take-up device for the cord passing from the bobbin about the needle in the operation of the latter. Depending  
 125 from the support 10, adjacent to the cutting mechanism 61, is a square rod 62, forming a guide for a slide 63, mounted thereon. Secured to said slide and extending upward therefrom is an arm 64, which is provided  
 130 with an offset 65. Beyond said offset the arm 64 is curved slightly outward, and on the inner side of its upper end is mounted a roller 66. This roller takes over the thread lying between the eye of the needle and the cutter, and by pulling the slide 63 downward to the



position shown in Fig. 1 a sufficient amount of thread is provided to permit the needle to pass freely through the material being sewed and to carry the thread with it without the necessity of the thread having to be pulled or fed through the eye of the needle. It is necessary that the correct length of thread or cord be measured off by pulling down slide 63, as hereinafter explained, and to regulate this operation the lower end portion of the squared rod 62 is screw-threaded and provided with an adjusting-nut 67. By turning this nut in one direction or the other the distance the slide 63 can be moved downward may be regulated, as will be understood.

Mounted in the bottom of the slotted part of support 10 in bearings 68 is a slide-bar 69, having near opposite ends stops 70 71, respectively. Secured on the inner end of this slide-bar 69 is a plate 72, having its outer end pointed and provided with an inclined surface 73, so that said plate forms a wedge. The slide-bar 69 is moved backward and forward by the engagement of the head 34 with one or the other of stops 70 71, and in its inward or forward thrust the inclined part of plate 72 engages beneath the offset 65 and raises the slide 63, as shown in Figs. 7 and 9, so that the roller 66 will lie above the thread extending between the cutting mechanism 61 and the eye of the needle and be in a position to engage said thread when the head 34 on its return engages stop 71 and moves the slide-bar 69 backward, thereby drawing the wedge 72 backward and permitting the slide 63 to fall, all of which will more clearly appear from the description of the operation of the machine given farther on. The plate or wedge 72 could of course be made an integral part of the structure of slide-bar 69.

The cutting mechanism 61 and the manner of operating the same will now be described.

Secured on the front of the support 10, adjacent to the inner end of the slotted portion thereof, are two parallel steel plates 74 75, the lower side of plate 74 being provided with a cutting edge 76, while the lower side of plate 75 has its edge blunted or somewhat rounded. Pivotaly mounted between these plates is the cutter 77, which has one edge sharpened to cooperate with the cutting edge 76 and its opposite edge blunted and somewhat beveled to cooperate with the plate 75, so that in one operation the thread will be cut by this mechanism and the end of the thread leading from the eye of the needle will be wedged in between the blunt edge of the cutter and plate 75, as shown in Fig. 9. The cutter 77 is practically semicircular in form, its end farthest removed from the operator projecting above the plates 74 75 and having a slotted connection with a lever-arm 78, working in an opening extending through the support 10. Pivotaly mounted at 79 in the support 10 is a bell-crank lever 80, one member, 81, of which is semicircular in shape and pivotaly connected at its free end to the in-

ner end of the lever-arm 78. The other arm, 82, of the bell-crank lever projects rearward and is provided with a slot 83. At the rear of the support 10 and extending from end to end thereof is a bar 84, which is slidably supported in bearings 85. Secured to this bar in a suitable manner, preferably adjustably, is a pin 86, which works in the slot 83. Pivotaly mounted on the bottom of the slotted part of the support 10 and near opposite ends thereof are two tappets 87 88, respectively, their pivots being indicated by the numerals 89 90. These tappets at their rear ends are slotted, as indicated by the numerals 91, and secured to the bar 84, preferably adjustably, are two pins 92 93, which engage in the respective slots 91. The inner end of each tappet projects into the path of head 34, these projecting ends being denoted, respectively, by the numerals 94 95.

The operation of the machine is as follows: The parts being in the position shown in Fig. 1, a filled sack to be sewed up is placed on the carrier 5 and the handle 8 is manipulated to rotate this carrier and move the sack beneath the jaws 17 and 19. One edge of the mouth of the sack is preferably doubled over the other, and the mouth of the sack is then clamped between the bottom edges of the jaws 17 and 19 by pressing the treadle 26 down with the foot. The crank 45 is now turned in a direction away from the operator, which, through the gearing described, will cause the spindle 36, to revolve. The head 34, being non-rotatively mounted on the spindle 36, will revolve with it, and the spiral rib or thread 35, engaging the notches 33, said head, with the needle 46, will thereby be carried forward. As the needle moves forward it enters the guide formed between the two jaws 17 and 19 by the recesses 18 and 20, and its pointed end pierces the fabric of the sack and carries the thread continuously through and over the doubled edge, closing the mouth thereof by an over-and-under stitch, as more clearly represented in Figs. 7, 8, and 10. In the position of the parts shown in Fig. 1 the thread 50<sup>a</sup> having been pulled down by means of the slide 63 the roller 58 and slide 53 have thereby been pulled forward or toward the operator, raising the weight 56, this position being shown in Fig. 2. As the needle starts to revolve the thread above the eye 47 will seat in the groove 48, continuing to do this as long as the needle revolves forward, the weight of slide 63 being sufficient to prevent the thread from slipping through the eye of the needle. The thread that is wound about the needle in the spiral groove 48 is therefore unwound from the bobbin. In the forward movement of the needle the thread below the eye thereof passes over the upper side of the cutting device 61 and draws the slide 63 upward, the thread running straight through the needle longitudinally thereof, as best shown in Figs. 7 and 8. As the head 34 nears the limit of its forward movement its front end strikes



the stop 70, moving the slide-bar 69 forward, the incline 73 engaging beneath the offset 65 and further raising the slide 63 and holding it in this elevated position, as shown in Fig. 7. It will now be seen that if the slide 63 has been pulled so far downward as to draw down more than the proper length of thread the forward movement of the needle will not operate to raise the slide high enough to permit the wedge 72 to pass beneath the offset 65. After engaging the stop 70 the head 34 will next engage the end 94 of tappet 87, thereby moving the bar 84 toward the right. In this movement of bar 84 the engagement of pin 86 in the slot 83 of bell-crank lever 80 will operate to turn said lever toward the right on its pivot 79, and thereby move the lever-arm 78 outward or toward the operator, which movement of lever-arm 78 operates to turn downward the cutter 77 and release the free end of the thread which had previously been held clamped in the cutting mechanism, as shown in Fig. 1, this position of the parts being indicated in Figs. 4 and 7. In clamping the bag in the jaws 17 and 19 the corners of the bag are so disposed as that the needle shall not engage them. The purpose of this is to leave sufficient material to form the usual ears at the corners of the sack, as shown at 96 97 in Figs. 7 and 10. By referring to Fig. 7 it will be seen that the point and one of the spirals or convolutions of the needle projects through the sack on the side toward the operator and that the thread 50<sup>a</sup>, which runs centrally through the needle, forms, with this part of the needle, an eye or opening. In order to form the ear 96 and secure the same with the thread, the handle 28 is now moved in a direction away from the operator, which will cause the curved arm 29 to project outward through the opening 30 in the support 10 and to push the corner or ear 96 of the sack through the eye or opening formed by the thread 50<sup>a</sup> and the needle, as clearly shown in Fig. 8. The handle 28 is next moved to withdraw the curved arm 29 to its normal position or that shown in Fig. 3. The crank 45 is now turned in the reverse direction to that first described to withdraw the needle from the sack. In this movement the thread will first be drawn tightly about the ear 96, as shown in Fig. 10, and as the needle continues to be withdrawn the thread is pulled through the groove 48, being left in the sack to occupy practically the same position formerly occupied by the needle, except that it is pulled down close about the edge of the sack by the friction of the thread passing through the groove in the needle lying adjacent to the thread which was carried through the sack in the progress of the needle therethrough, as previously described. The slack of the thread that was wound in the spirals of the needle is taken up by the slide 53, having the roller 58 engaging the thread, which slide is gradually drawn backward toward the rear of frame 51 by the weight 56. The needle 46 is in line

with the cutting mechanism 61, but is curved in a spiral of such diameter that it will revolve about this mechanism. The relative arrangement of these parts is such that as the needle is withdrawn from the sack the thread of the needle will be carried by the revolution of the needle between the cutter 77 (which is still in the position shown in Figs. 4 and 7) and the plates 74 and 75. The head 34 as it nears the limit of its return movement will first strike the end 95 of tappet 88, which, through the mechanism described, will operate to raise the cutter 77, severing the string on the side next the bag and wedging the end of the string leading from the needle between the cutter 77 and plate 75. In Fig. 9 the position of the parts at this period of the operation is shown. By referring to this figure it will be seen that the slide 63 is supported by the wedge 72 and that the roller 66 lies directly over the thread 50<sup>a</sup>. Immediately after striking the end 95 of tappet 88 to operate the cutter the head 34 will strike the stop 71, moving slide-bar 69 backward and withdrawing wedge 72 from beneath the offset 65. The slide 63 will now fall a short distance, the roller 66 resting on the thread. By drawing slide 63 down to the adjusting-nut 67 the requisite amount of thread is measured off for the next passage of the needle, and the slide 53 is drawn toward the front of frame 51, raising the weight 56. The free ends of the cord are tied by hand about the other corner of the bag to form the ear 97. By manipulating handle 8 the carrier is moved to discharge the bag from the platform or to move the bag along a given distance, so that a second operator may form the ear 97.

In practice three bags are on the platform at one time—viz., one that is on the receiving end of the platform, one that is being sewed, and one that is ready to be discharged.

We have shown and described a machine that is operated manually; but we contemplate running the machine by power derived from an engine, dynamo, or the like.

Having thus fully described our invention, what we claim as new is—

1. In a machine for sewing up the mouths of sacks, the combination with means for clamping the sack, of a spiral needle carrying a thread, means for imparting a forward screw motion to the needle to carry the same through the sack, and a backward screw motion to the needle to withdraw it from the sack, means for preventing the thread from being withdrawn with the needle, and means operating in the backward movement of the needle to cut the thread between the needle and the sack, substantially as described.

2. In a machine for sewing up the mouths of sacks, the combination with means for clamping the sack, of a spiral needle carrying a thread, means for imparting a forward screw motion to the needle to carry the same through the sack, and a backward screw motion to the needle to withdraw the needle from



the sack, means for preventing the thread from being withdrawn with the needle, and means operating in the backward movement of the needle to cut the thread between the 5 needle and the sack and to hold the end of the thread leading from the needle, substantially as described.

3. In a machine for sewing up the mouths of sacks, the combination with means for 10 clamping the sack comprising a stationary and a movable jaw affording between them a guide, of a spiral needle carrying a thread, means for imparting a forward screw motion to the needle through said guide to carry the 15 said needle through the sack and a backward screw motion to the needle to withdraw the needle from the sack, means for preventing the thread from being withdrawn with the needle, and means operating in the backward 20 movement of the needle to cut the thread between the needle and the sack, substantially as described.

4. In a machine for sewing up the mouths of sacks, the combination with means for 25 clamping the sack, of a spiral needle having an eye and provided with a circumferential groove, a bobbin carrying thread for the needle, said thread being passed through the eye of the needle and having its end secured, 30 means for imparting a forward and a backward screw motion to the needle whereby on the forward movement the thread will be drawn from the bobbin and will seat in the groove of the needle and be carried thereby through 35 the sack, while the portion of thread that has been passed through the eye will be drawn through the sack by the needle and extend longitudinally through the spirals of the needle, and means for pushing the corner of the 40 sack between this part of the thread and the needle when the needle has reached the end of its forward movement whereby on the backward movement of the needle the thread will be drawn through the groove of the needle and be pulled tightly about said corner 45 to form an ear, substantially as described.

5. In a machine for sewing up the mouths of sacks, the combination with means for 50 clamping the sack, of a spiral needle carrying a thread, means for imparting a forward and a backward screw motion to the needle to first carry the same through the sack and then withdraw the needle from the sack, and means for pushing the corner of the sack be- 55 tween the thread and the needle when the latter has reached the end of its forward movement, whereby as the needle is withdrawn the thread will be pulled tightly about said corner to form an ear, substantially as 60 described.

6. In a machine for sewing up the mouths of sacks, the combination with means for 65 clamping the sack, of a spiral needle carrying a thread, means for imparting a forward and a backward screw motion to the needle to first carry the same through the sack and then withdraw the needle from the sack,

means for pushing the corner of the sack between the thread and the needle when the latter has reached the end of its forward 70 movement, whereby as the needle is withdrawn the thread will be pulled tightly about said corner to form an ear, and means operating in said backward movement of the needle to sever the thread between the sack and 75 the needle, substantially as described.

7. In a machine for sewing up the mouths of sacks, the combination with means for clamping the sack, of a spiral needle having 80 an eye and a circumferential groove, a bobbin having thread wound thereon, said thread being passed through the eye of the needle, means for imparting a forward screw motion to the needle to carry the same through the sack, and a backward screw motion to the needle to withdraw the needle from the sack, 85 means for preventing the thread from being withdrawn with the needle, cutting mechanism operated in the backward movement of the needle to cut the thread between the needle and the sack and to hold the end of the thread leading from the needle, means for en- 90 gaging the thread between the cutting mechanism and the needle whereby a given length of thread is drawn through the eye of the needle, and means for adjusting the length of 95 thread so drawn through the needle, substantially as described.

8. In a machine for sewing up the mouths of sacks, the combination with means for 100 clamping the sack, of a spiral needle having an eye and a circumferential groove, a bobbin having thread wound thereon, said thread being passed through the eye of the needle, means for imparting a forward screw motion 105 to the needle to carry the same through the sack and a backward screw motion to the needle to withdraw the needle from the sack, means for preventing the thread from being withdrawn from the needle, cutting mechanism 110 operated in the backward movement of the needle to cut the thread between the needle and the sack and to hold the end of the thread leading from the needle, and a combined tension and take-up device engaging 115 the thread leading from the bobbin to the needle, substantially as described.

9. In a machine for sewing up the mouths of sacks, the combination with means for clamping the sack, of a spiral needle having 120 an eye and a circumferential groove, a bobbin having thread wound thereon, said thread being passed through the eye of the needle, means for imparting a forward screw motion to the needle to carry the same through the sack, and a backward screw motion to the 125 needle to withdraw the same from the sack, means for preventing the thread from being withdrawn with the needle, cutting mechanism operated in the backward movement of 130 the needle to cut the thread between the needle and the sack and to hold the end of the thread leading from the needle, a combined tension and take-up device engaging



the thread leading from the bobbin to the needle, a vertical bar having a lower screw-threaded end, a slide mounted on said bar carrying a roller for engaging the thread between the cutting mechanism and the needle, 5 whereby by pulling said slide downward the thread may be pulled through the eye of the needle, and an adjusting-nut on the lower end of said rod for limiting the downward movement of said slide, substantially as described. 10

10. In a machine for sewing up the mouths of sacks, the combination with means for clamping the sack, of a guide provided with notches, a square spindle revolubly mounted 15 in said guide, means for revolving said spindle, a head slidably mounted on said spindle and having a circumferential spiral rib or thread engaging in said notches, and a spiral needle carried by said head and having an 20 eye and a circumferential groove, substantially as described.

11. In a machine of the class described, the combination with the device for clamping the

sack, of the spiral needle having an eye, and of the means for causing said needle to travel 25 back and forth, of cutting mechanism, a slide adapted to be suspended on a length of thread passed through the eye of the needle the said cutting mechanism also having means to engage said thread whereby in the passage 30 forward of the needle the slide will be carried upward by said thread, means operated in the forward movement of the needle to engage said slide and hold it in an elevated position, means for operating said cutting 35 mechanism to release the thread in the forward travel of the needle after the slide has been elevated, and means operating in the backward travel of the needle to first operate the cutter and after that to release the slide, 40 substantially as described.

JOHN CROOK.

ERNEST WHITEHEAD.

Witnesses:

GEORGE WILLIAM BASLEY,  
PERCY HERBERT BASLEY.