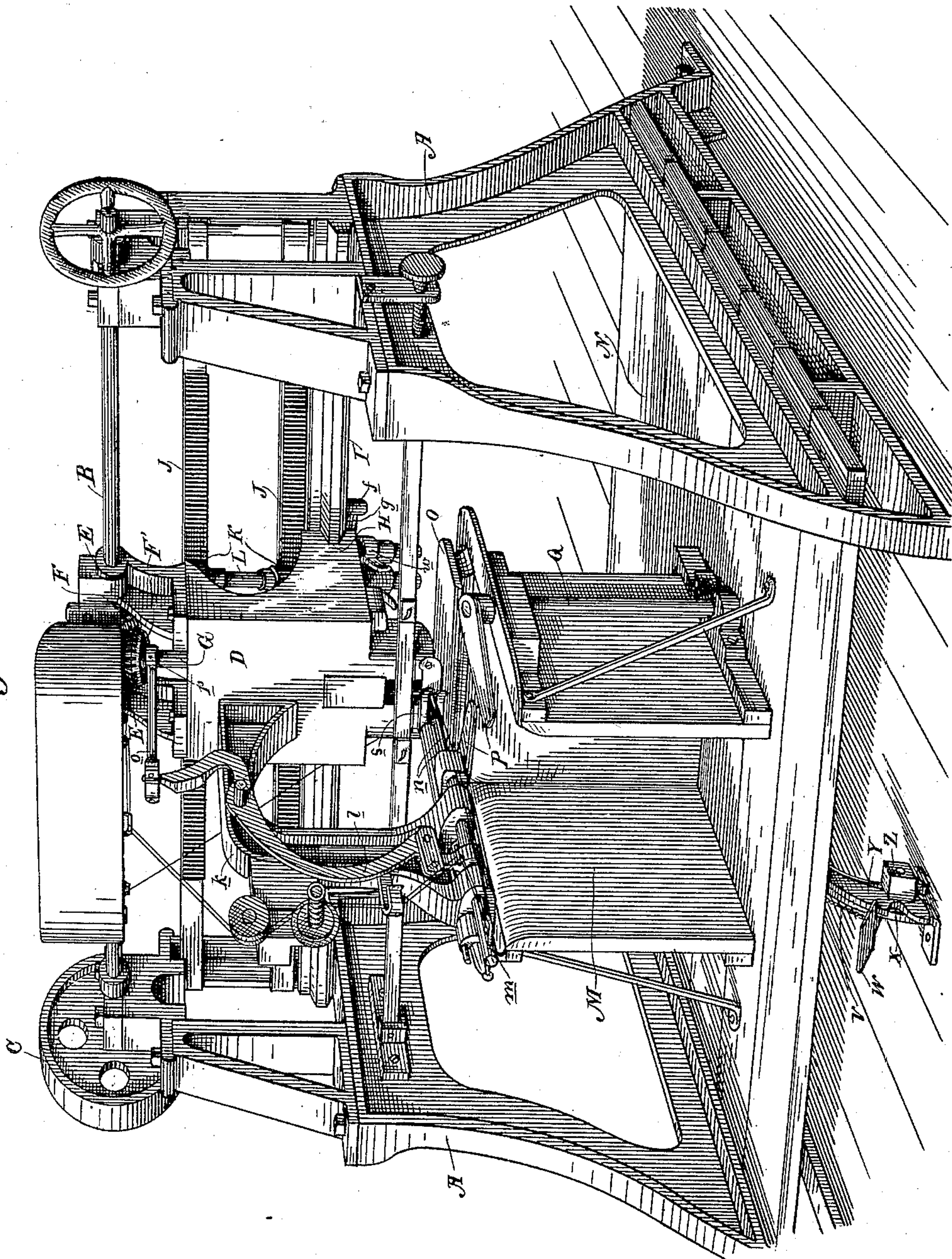


(No Model.)

3 Sheets—Sheet 1.

T. J. DANIELS.  
MACHINE FOR SEWING UP THE MOUTHS OF FILLED BAGS.  
No. 427,750. Patented May 13, 1890.

Fig. 1.



Witnesses,  
Geo. H. Strong.  
J. H. House

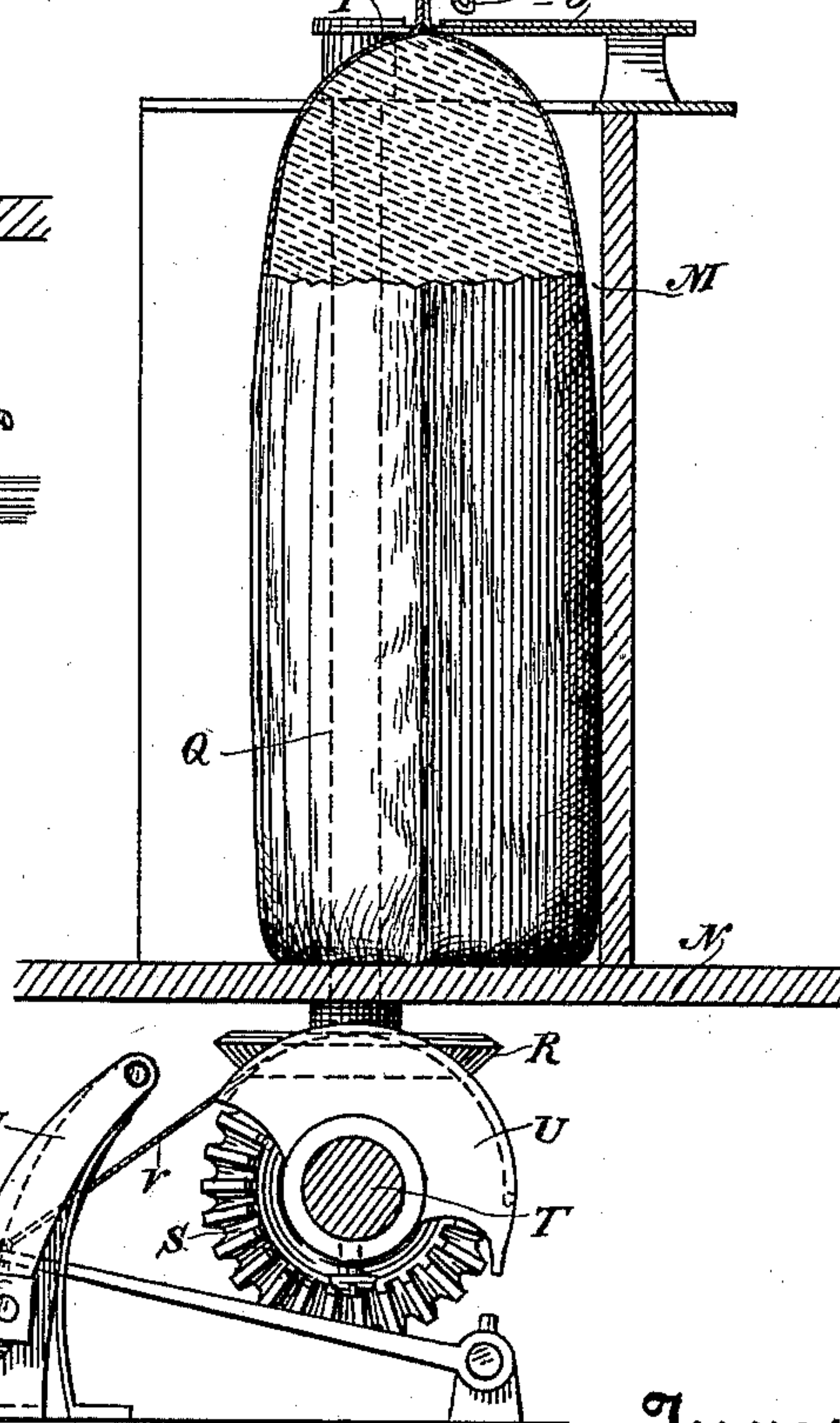
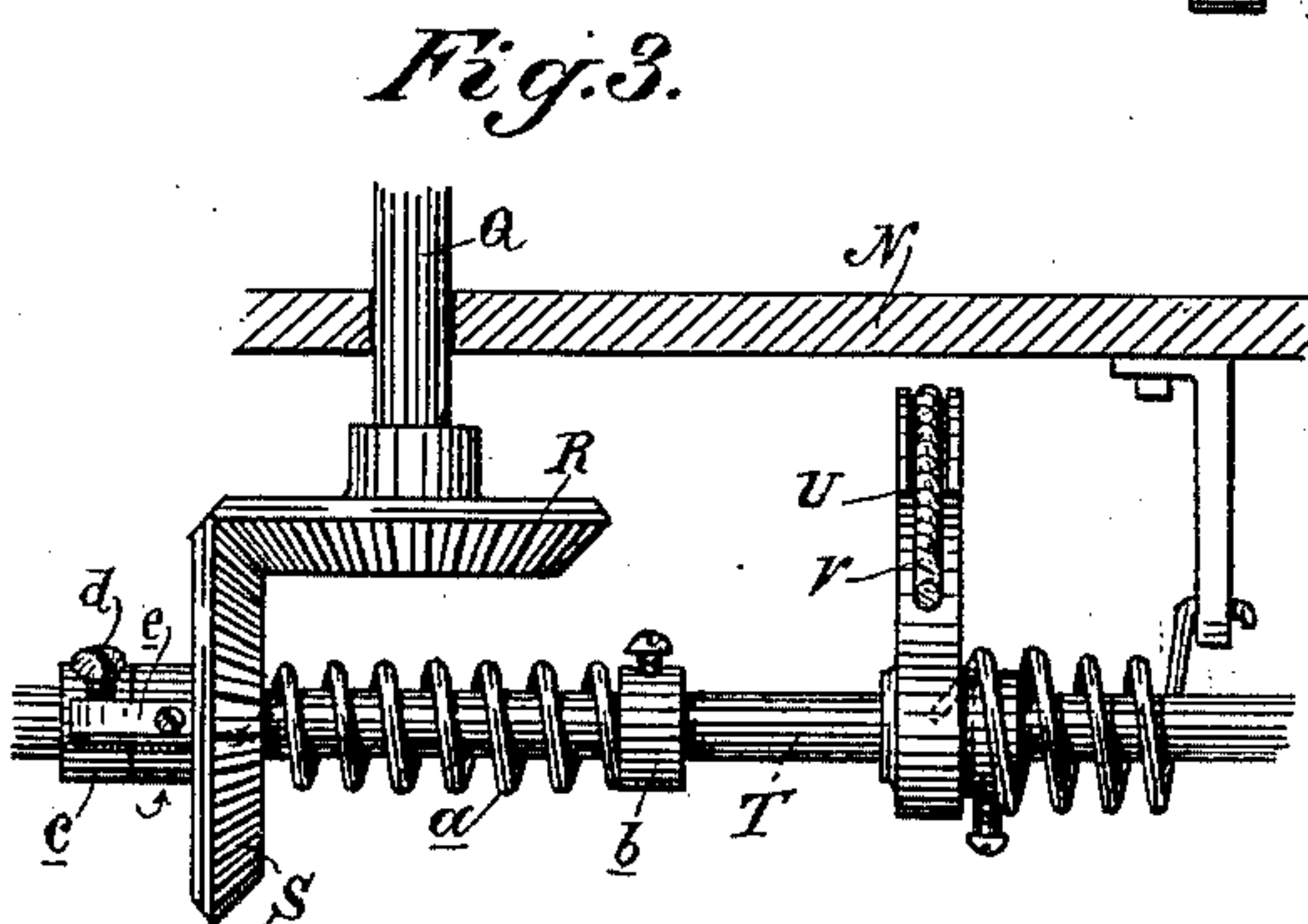
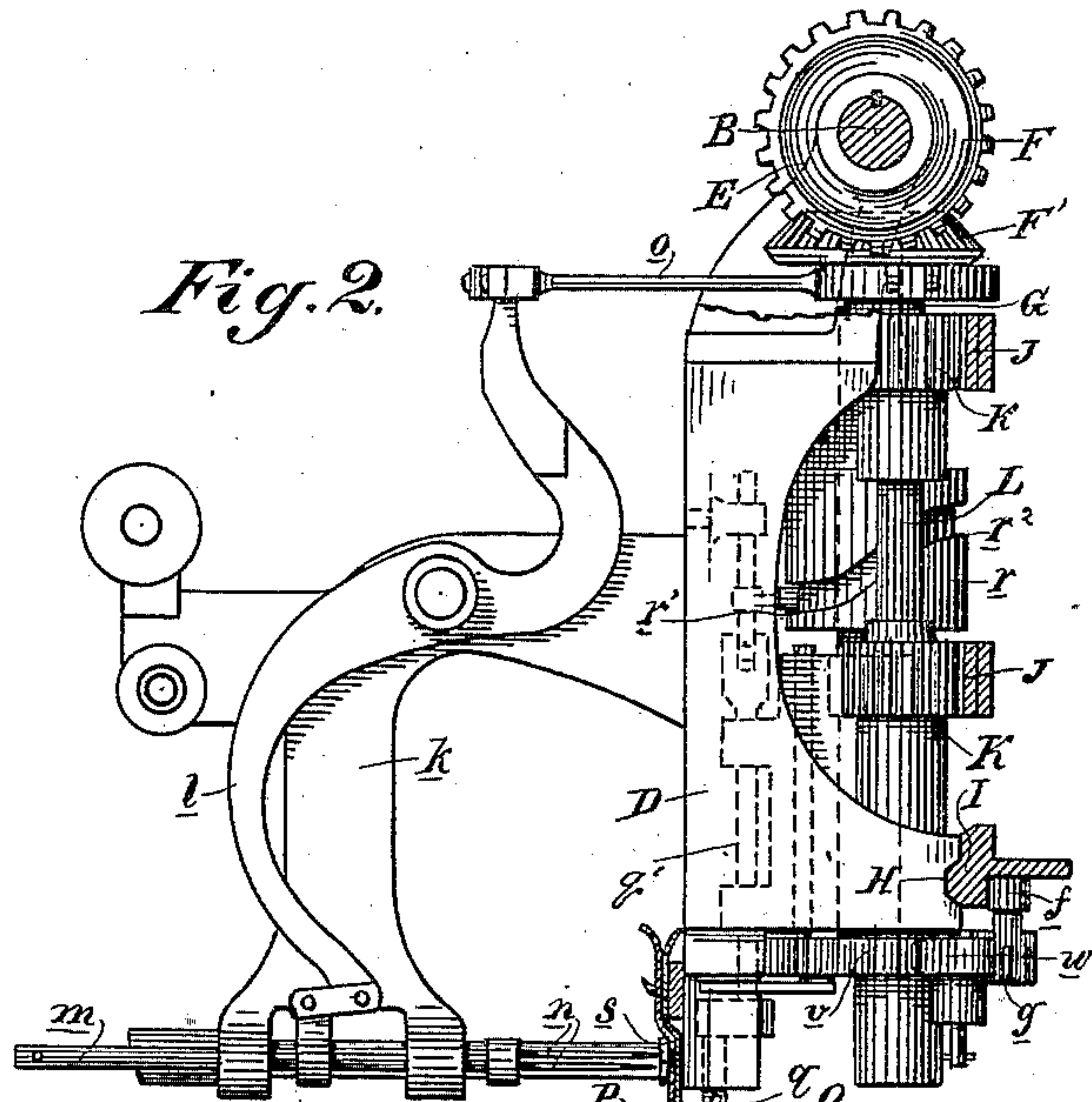
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att



(No Model.)

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(No Model.)

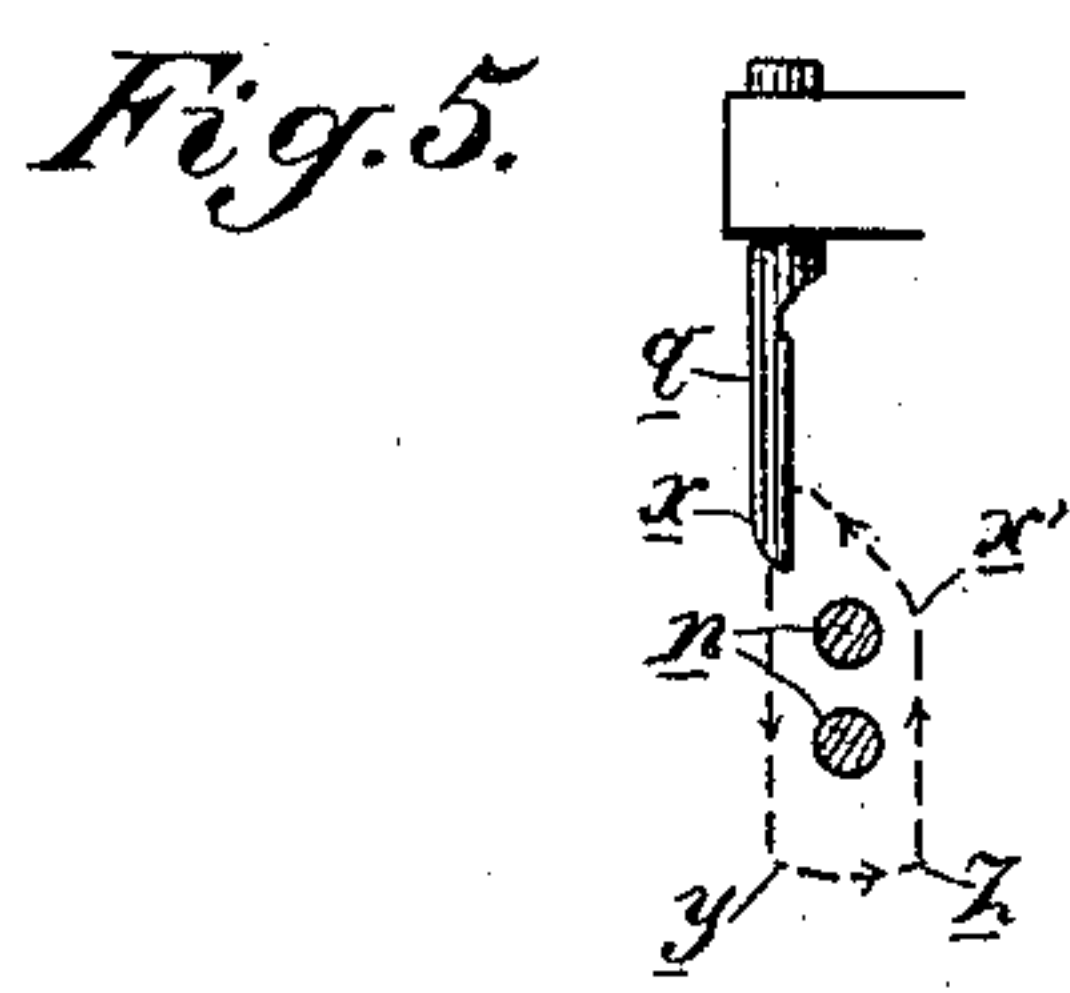
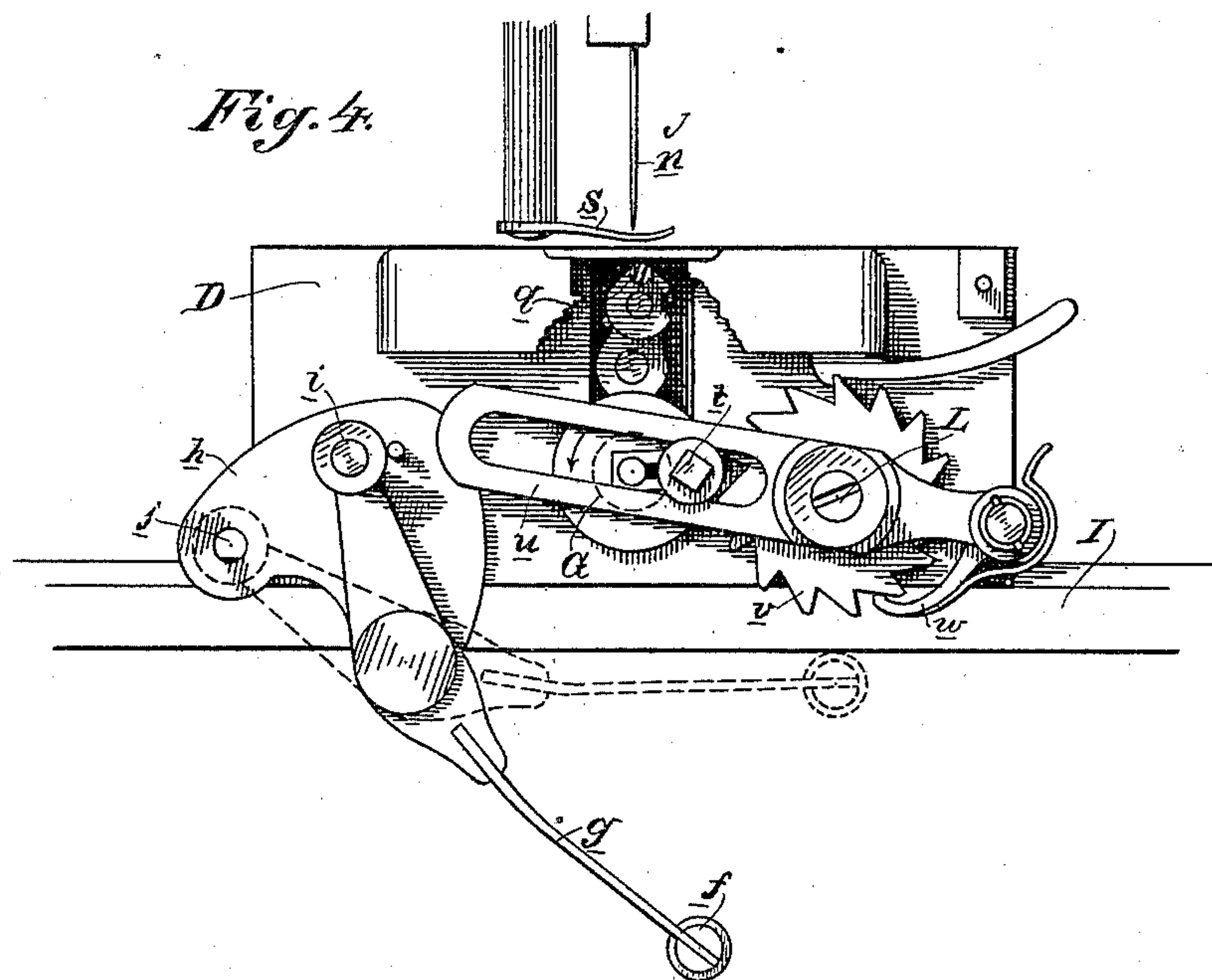
3 Sheets—Sheet 3.

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# UNITED STATES PATENT OFFICE.

THOMAS J. DANIELS, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO  
SPERRY & CO., OF SAME PLACE.

## MACHINE FOR SEWING UP THE MOUTHS OF FILLED BAGS.

SPECIFICATION forming part of Letters Patent No. 427,750, dated May 13, 1890.

Application filed January 2, 1890. Serial No. 335,655. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS J. DANIELS, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Sewing-Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in sewing-machines; and it consists in the construction and combinations of devices which I shall hereinafter fully describe and claim.

Figure 1 is a perspective view of the apparatus. Fig. 2 is a side elevation with parts broken away and in section. Fig. 3 is a view of a portion of the treadle mechanism. Fig. 4 is a view of part of the machine, showing the feed and latch mechanism. Fig. 5 is a diagram showing the movement and position of the looper.

This machine is especially devised for the purpose of closing and sewing the mouths of flour or other bags after they have been filled, with the view of closing the bags with a peculiar stitch, so that after having once been opened and the contents removed the bags cannot be filled with inferior goods for the purposes of deception.

A are the side frames of the machine as at present constructed.

B is the power-shaft, journaled in boxes across the top of the frame, and having a pulley C or other suitable equivalent means for rotating the shaft.

D is the sewing-machine case, which is suspended from the shaft B by boxes E, and the mechanism of the machine is rotated by the beveled gear F and pinion F', the gear traveling upon the shaft B and the pinion being fixed upon the shaft G of the sewing-machine. The sewing-machine is thus suspended so as to hang below the shaft B, and its lower side is formed with grooves or channels H, which are fitted to travel upon the horizontal guide-bar I, which extends across the frame of the machine and parallel with the shaft B.

J J are two toothed racks which extend across the frame of the machine between the shaft B and the bar I, and K K are spur-pinions fixed upon a shaft L, which is journaled

inside the case D, and which is rotated by mechanism hereinafter described, so as to advance the machine along the shaft B as the work progresses.

M is an open-front box or stand fixed upon the platform N and adapted to receive the sacks after they have been filled.

O is a horizontal plate, the edge of which stands in such position above the box M that when the sacks are set into the box one side of the cloth, which is to be stitched above the level of the material within the sack, will rest against the plate O. The other side is pressed closely against the first side, and the mouth of the sack is compressed against the plate O by means of the arms P, which are fixed to vertical shafts Q, journaled on each side of the box M, and by the rotation of the shafts Q the arms P are compressed against the cloth which projects from the upper part of the sack, thus holding it firmly between these arms and the plate O.

The shafts Q have pinions R upon their lower ends, and these engage with corresponding gears or pinions S, which are mounted upon a shaft T, this shaft being suitably journaled beneath the platform N. Upon this shaft is fixed the lever-like attachment or cam U, and a cord or chain V connects this lever with the treadle W, so that when the foot is placed upon the treadle it acts through the cam U to rotate the shaft T, and this shaft acts through the gears R and S and the vertical shafts Q so as to turn the arms P for the purpose of clamping the mouth of the sack, as above described.

When the treadle is depressed, the edge of it falls into a groove or notch X in a pivoted swinging arm Y, which holds it down and retains the parts in position until the sewing is completed, after which it is disengaged by pressing the arm Y backward, so as to release the edge of the treadle. This is conveniently done by means of a foot-block Z, which is attached to the lever Y for the purpose.

As the thickness of that portion of the sack which is to be clamped between the plate O and the arms P may vary by reason of seams or by a portion of the contents of the sack being caught between the clamps, it is necessary to operate the clamps by yielding or ad-



justable pressure, so that one may close more or less than the other, as may be necessary. This is effected by means of the springs *a*, which surround the treadle-shaft *T* and have their inner ends secured to the fixed collars *b*. The outer ends of these springs are connected with the pinions *S*, which turn loosely upon the shaft *T*. Outside of the pinions *S* are fixed the adjustable collars *c* by means of set-screw *d*, and an arm *e*, which is fixed to the hub of each of the pinions *S*, extends over the collar, so as to strike against the pin or screw *d*. The springs *a* are coiled by turning the gears *S* backward until the springs have a sufficient tension, and the collar *c* is turned until the screw *d* is brought into contact with the arm *e*, when the collar is fixed in place by means of the set-screw. The tension of the spring will then keep the arm *e* pressing against the screw *d*, and the pinions *S* will have a resistance which depends upon the amount of tension given the spring. This resistance is sufficient, so that when the treadle *W* is depressed the pinions *S* will act upon the pinions *R* immediately, and thus turn them, the shafts *Q*, and the clamping-arms *P*.

If there were no tension upon the springs *a*, it would be manifest that a portion of the rotation of the shaft *T* would be consumed whenever the treadle was depressed in winding the springs up before they would have strength enough to transmit their force to the vertical shafts, and this would be objectionable on account of the short movement of the treadle. By winding the springs up until a sufficient tension is produced to operate the parts this difficulty is avoided. At the same time, if one of the clamps *P* should encounter an obstruction or a thickness in the sack greater than that beneath the other clamp, it would be manifest that the spring *a* would by its flexibility allow the shaft *T* to continue its rotation under the action of the treadle without any further movement of the pinions *S* and *R* upon that side, the set-screw *d* and collar *c* simply moving away from the arm or stop *e* of the pinion, which latter would remain stationary whenever the clamp *P* upon that side encountered an obstruction before being fully closed against the plate *O*. The shaft *T*, however, would continue to rotate, and if the other arm *P* met with no obstruction the pinions upon that side would continue to operate until the clamp had been closed, so as to hold the cloth firmly at that side.

The sewing-machine *D*, as previously described, is suspended from the shaft *B*, and its lower edge travels against the guide-bar *I*. When the machine is released from its holding device, it may be turned up about the driving-shaft, so that the interior is accessible. When it is turned down in position for work, it is locked in place by means of a roller *f*, which is fixed upon the end of a lever-arm *g*, fulcrumed upon a plate *h*, which is secured to one side of the machine-case *D*. The lever

*g*, being turned about its fulcrum-point, will throw the roller *f* behind the guide-bar *I* in such a manner that it travels against the lower back portion of the bar, and thus prevents the machine from swinging away from the bar. The lever is locked in place by means of a set-screw *i*, the point of which enters a hole *j* in the plate and retains it. By releasing the screw and moving the lever back the roller *f* will be thrown back sufficiently to allow the machine to be turned up, as before described.

*k* is the stationary arm. *l* is the oscillating arm, which carries the needle-bar *m* and with it the needles *n*. The oscillating arm *l* is actuated by a pitman *o* from an eccentric or crank *p* upon the shaft *G* of the sewing-machine. In the present case I have shown two needles *n*, in each of which I use a different colored thread.

The looper *q*, which reciprocates within the case *D* and at right angles with the movements of the needles *n*, is carried upon a rocker-arm fixed to a shaft *q'*, which is reciprocated in the direction of its length by means of the cam *r* upon the main shaft *G*. This shaft *q'* is also caused to oscillate a little upon its axis, so as to move the looper *q* from one side to the other of the line traversed by the needles *n* in making the stitch. The cam *r* is so formed as to reciprocate the looper *q* and to retain it in the stationary position at the proper points, so as to complete the stitch, and this looper, which is of the usual form, also carries a thread different in color from the needles *n*.

The position of the machine relative to the sack-holding device is such that the clamps *P* close the mouth of the sack just above its contents and the needles *n* pass through the upwardly-projecting portion of the mouth of the sack, which extends above the clamps. The presser-foot *s* comes against the upwardly-projecting edges of the cloth, as shown, and when the main shaft *B* is rotated the sewing will commence.

On account of the position of the looper *q*, I have found it necessary to make the stroke of this looper very short to prevent its extending into the top of the sack, and for this reason I have been obliged to so construct the cam *r* as to give this needle stationary periods in its reciprocation, so that the loops of the thread will be properly formed and taken up to form the stitch.

The reciprocation of the looper *q* in this class of machines is usually produced by a continuous or crank movement, and the looper has a correspondingly long motion in the ordinary construction amounting to as much as an inch and a quarter. In my device, however, the movement of the looper does not exceed five-eighths of an inch, and this would be insufficient to make and hold the loop, so that the two main needles would pass through it if the reciprocating motion of the looper were continuous. For this reason I have em-



ployed a cam to move the looper instead of a crank movement, and this cam has its groove made at two points, so as to produce no reciprocating motion of the looper.

5 The operation of the looper will then be as follows: It is first moved forward to the full extent of its stroke, passing through the loops which are formed by the ascent of the two needles *n*. At the end of its stroke the looper  
10 then remains stationary, while the needles *n* are withdrawn and during the time while the feed or forward motion takes place for the following stitch. A slight lateral motion of the looper then takes place, which carries it  
15 to the opposite side of the line of travel of the needles *n*, and the pull of the feed at the same time in the opposite direction causes a slight tension of the loop, which prevents its slipping off the looper. The looper is then  
20 drawn back a short distance by the further movement of the cam, and again remains stationary at the point *x'* to allow the needles *n* to pass through the triangular space, which is thus formed in the loop at the side of the  
25 needle. These rests in the movement of the looper are necessary on account of the short stroke which it takes, and also because of the use of the two needles and the very small space into which these two needles must pass  
30 in their movement through the loop.

In order to advance the machine along the top of the sack as the work proceeds, I have shown a crank-pin *t*, which is carried by the main shaft *G* of the machine. This pin enters  
35 a long slot in the arm *u*, and by its rotation causes the oscillation of this arm, the slot being long enough to allow of the full stroke of the crank-pin within the slot. The arm *u* is fulcrumed upon or in line with the  
40 shaft *L*, which carries the feed-pinions *K*, and a ratchet-wheel *v* is fixed upon this shaft just inside of the lever *u*. By means of the pawl *w*, which engages the teeth of the ratchet-wheel *v*, the shaft *L* is rotated, and with it  
45 the pinions *K K*, which engage with the bars *J J* while advancing the machine the proper distance for the following stitch. This advance takes place while the needles *n n* are out of the goods, and as it must be made rapidly and before the needles are again carried  
50 into the goods the movement of the pawl and ratchet is effected by the crank-pin *t* when it is at that point within the slot in the arm *u* nearest to the fulcrum-point, thus giving a  
55 rapid motion to the feed-shaft at this point and allowing a more leisurely return of the pawl-carrying arm at the other part of its stroke, when the crank-pin *t* is at the greatest distance from the fulcrum.

60 It will be manifest that a friction-clutch or other feed mechanism can be substituted for the ratchet, which is here described as a representative device.

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

1. A sewing-machine for closing and secur-

ing the mouths of sacks, consisting, essentially, of a shaft, a traveling sewing-machine suspended from said shaft, a horizontally-  
70 placed needle-bar at right angles to said shaft and provided with reciprocating needles, a stationary support for the sacks, pivoted clamps mounted in the support and adapted to swing inwardly to close the mouth of the sack, and  
75 a rack and pinion with pawl and feed mechanism, whereby the sewing-machine is advanced between the stitches, substantially as herein described.

2. In a sewing-machine, a rotary shaft having a pinion adapted to slide thereon, a sewing-machine mounted upon said shaft and having a vertical shaft provided with a pinion which is engaged by the sliding pinion, a second pinion on the vertical shaft and a rack  
80 engaged thereby to advance the machine upon its shaft, complementary feed mechanism, and reciprocating needles, substantially as described.

3. A sewing-machine suspended upon the main driving-shaft, a pinion traveling from end to end of said shaft upon a feather and engaging the corresponding pinion upon the main shaft of the sewing-machine, a second shaft upon the sewing-machine with pinions  
90 thereon, fixed rack-bars engaged by said pinions, a feed mechanism by which the pinion-shaft is revolved, so as to move the sewing-machine along upon its supporting-shaft, an oscillating arm carrying the pawls, a slot  
95 made in said arm, and a crank-pin upon the main shaft of the sewing-machine extending into said slot and acting to move the oscillating arm with a variable speed, substantially as herein described.

4. A sewing-machine suspended from a driving-shaft, a traveling pinion moving upon a feather on said shaft and engaging a corresponding pinion of the sewing-machine shaft, the mechanism of which is driven thereby,  
100 stationary rack-bars beneath the suspending-shaft, pinions with a pawl and a feed mechanism, whereby they are rotated so as to travel upon the rack-bars and advance the sewing-machine, a guide-bar, against which the lower  
105 portion of the sewing-machine rests, and a lever-arm and roller adapted to swing behind and beneath the guide-bar, so as to retain the machine in position to prevent its swinging away from the guide-bar, substantially as  
110 herein described.

5. The combination, with the traveling sewing-machine, of the horizontal plate against which the mouth of the sack rests, the swinging arms *P*, by which the sack is clamped  
115 against said plate, the shafts *Q*, and the pinions *R*, in combination with the horizontal shaft, a treadle by which it is moved, pinions *S*, turning loosely upon the shaft and engaging with the pinions *R* of the vertical shafts, and  
120 the springs *a*, connecting the pinions *S* with the shaft, substantially as herein described.

6. The combination of the traveling sewing-machine, the clamps by which the mouth of



the sack is closed, the horizontal shaft having the pinions S, turning loosely upon the horizontal shaft, spiral springs surrounding said shaft, having one end attached to the  
5 shaft or collars thereon and the other end attached to the pinions, the collar c, the set-screw d, and the arm e, fixed to the pinion and projecting so as to engage the set-screw d and

maintain a tension upon the spring, substantially as herein described. 10

In witness whereof I have hereunto set my hand.

THOS. J. DANIELS.

Witnesses:

S. H. NOURSE,

H. C. LEE.