

C. RUTSON.
MACHINE FOR STUFFING EDGE ROLLS.
APPLICATION FILED DEC. 29, 1908.

992,808.

Patented May 23, 1911.

3 SHEETS-SHEET 1.

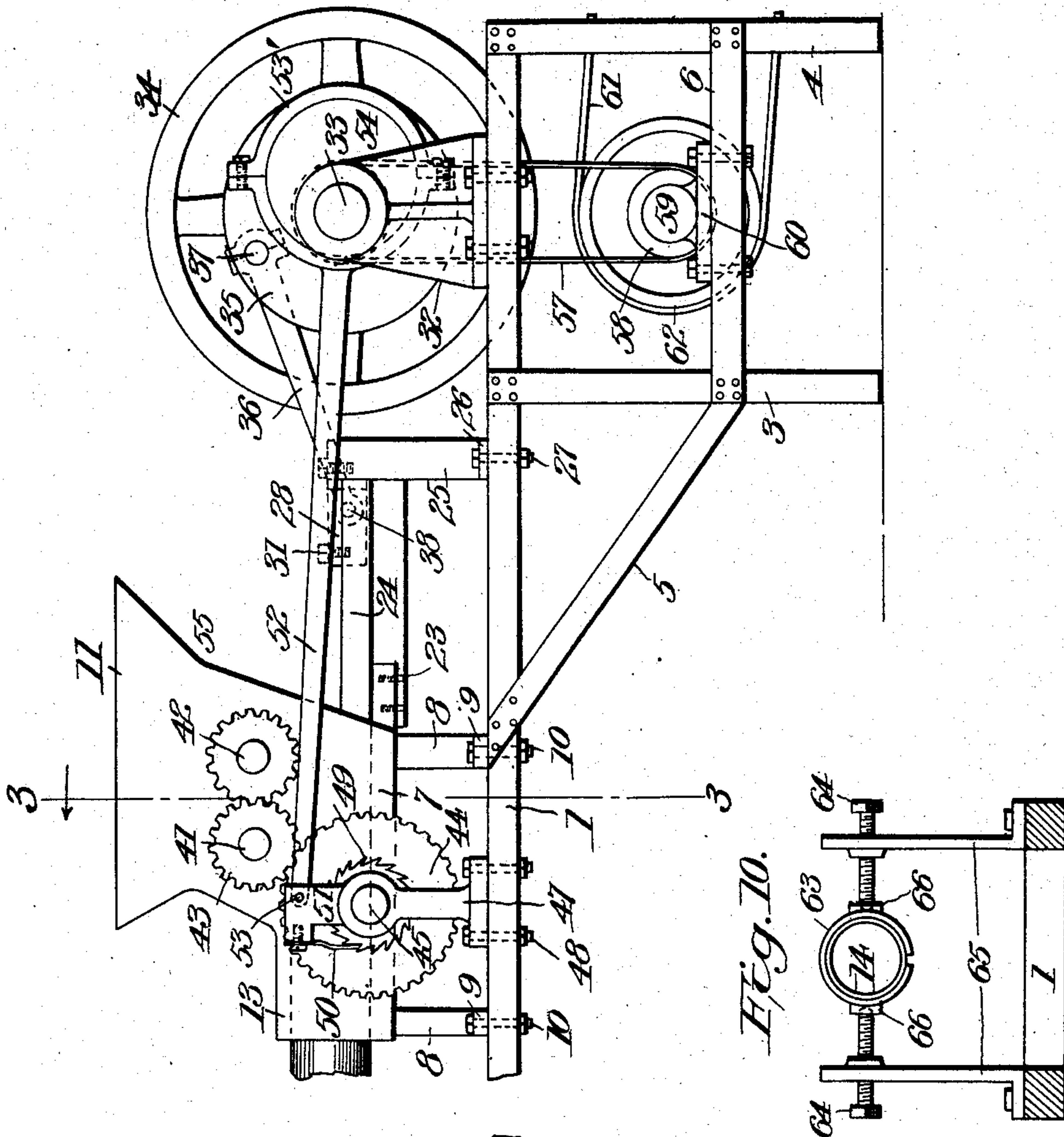
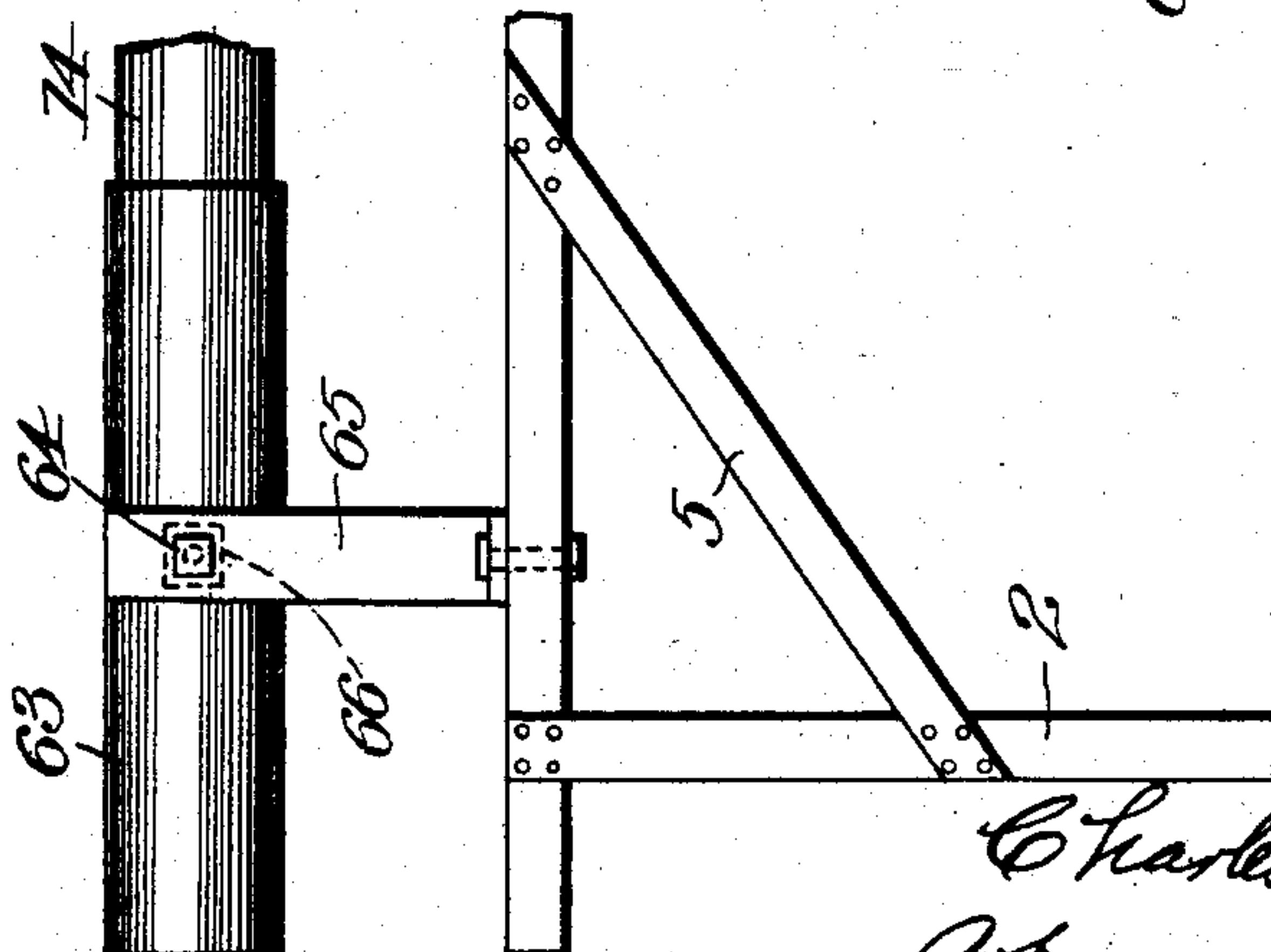


Fig. 1.



Witnesses

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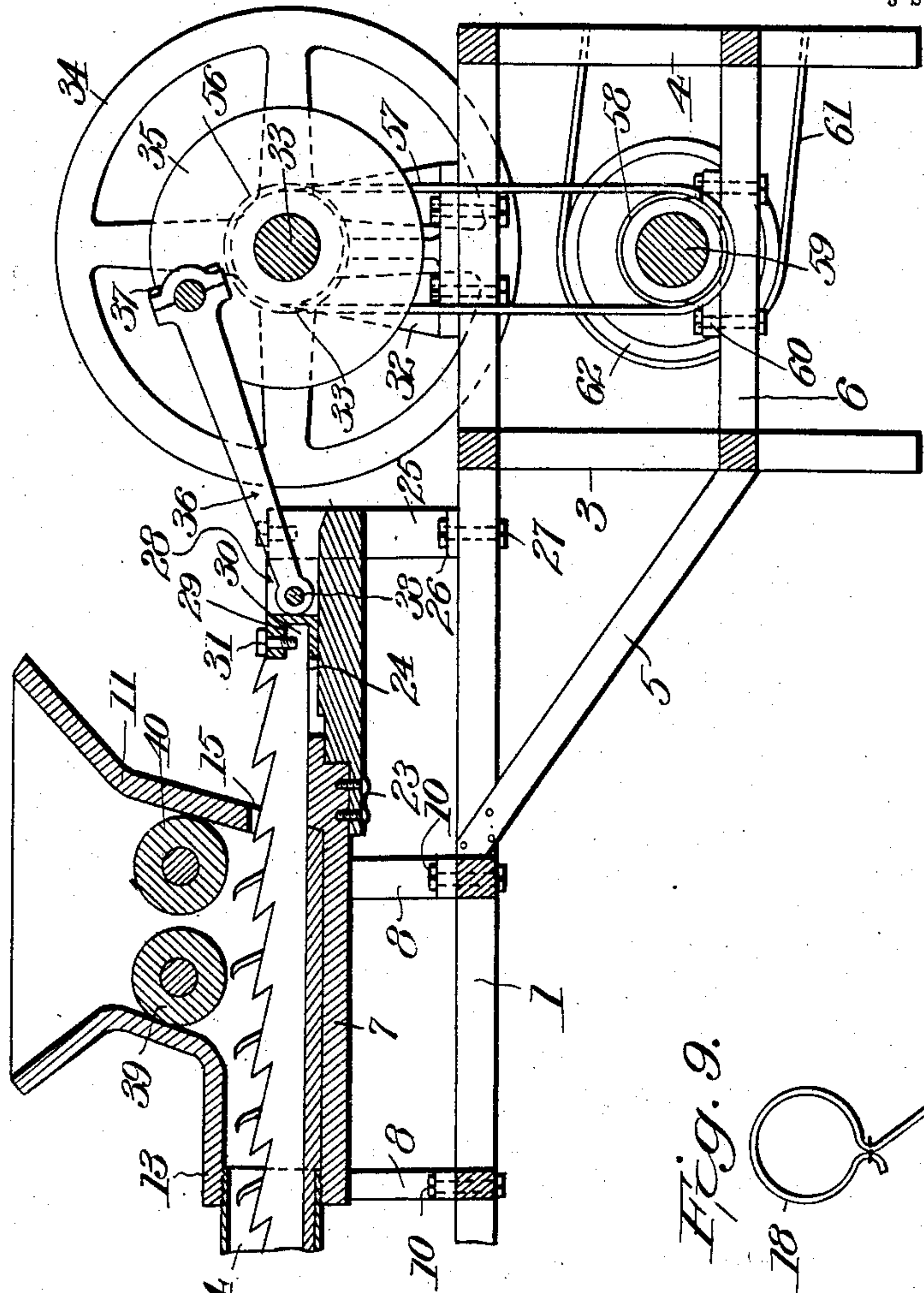
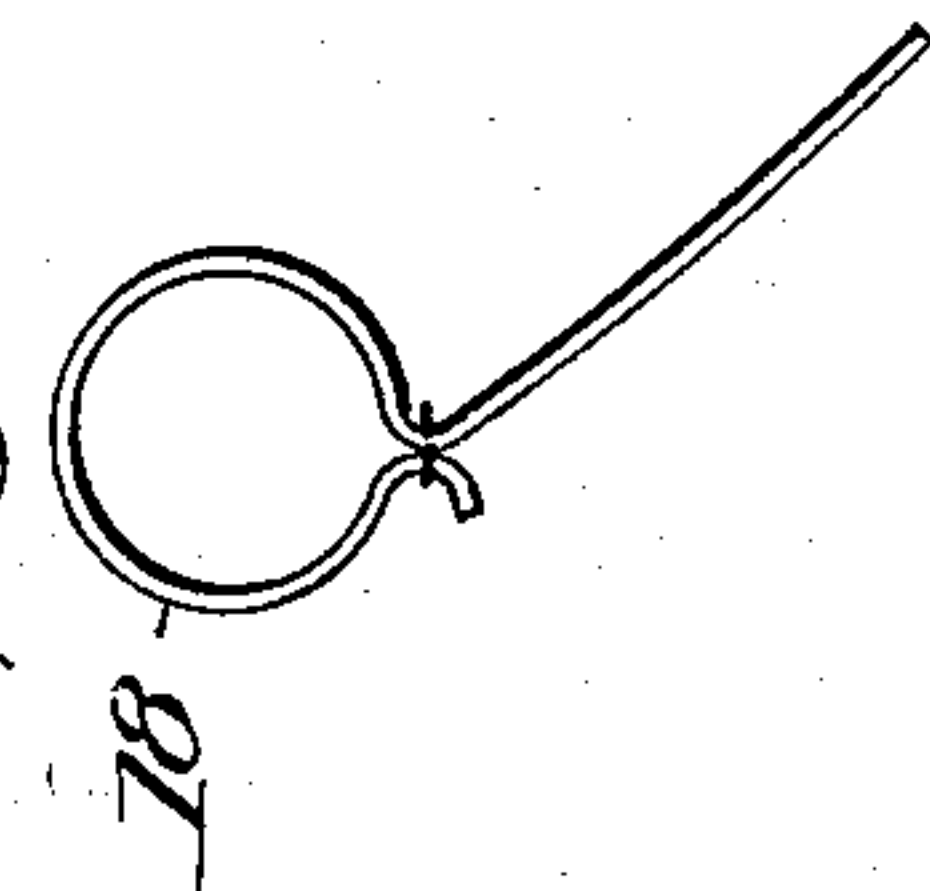


Fig. 2.

Fig. 9.



Witnesses

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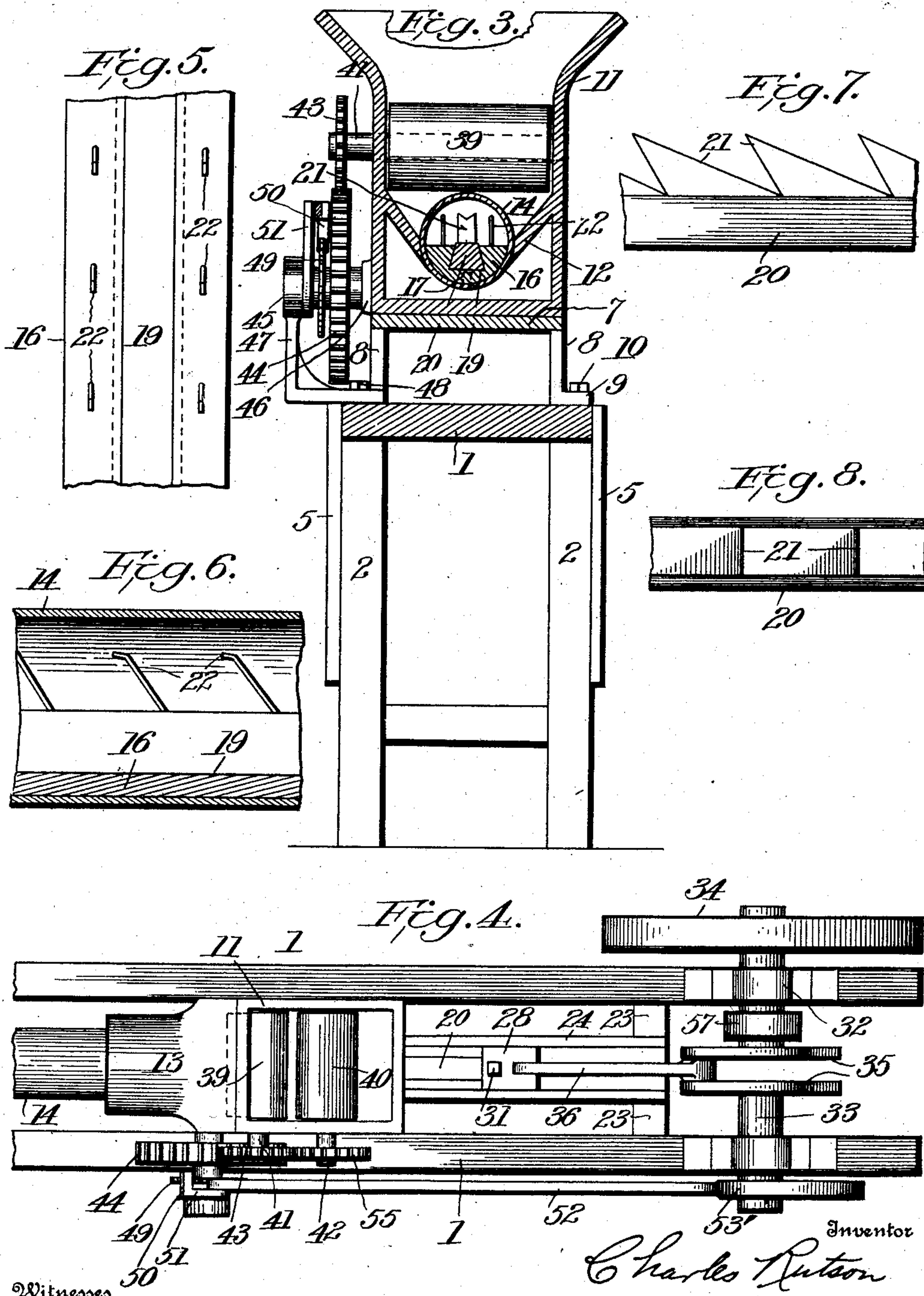
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES RUTSON, OF JACKSON, MICHIGAN, ASSIGNOR TO JACKSON CUSHION EDGE COMPANY, OF JACKSON, MICHIGAN.

MACHINE FOR STUFFING EDGE-ROLLS.

992,808.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES RUTSON, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Machines for Stuffing Edge-Rolls, of which the following is a specification.

This invention relates to upholstering devices.

In upholstering couches, lounges and similar articles the edges of the upholstering material are usually rolled along their edges for the purpose of strengthening the same and particularly to provide for a proper shaping of the edges of the cushion. To provide this roll edge pad or "edge-roll", as it is sometimes called, there are different methods employed, the operation being usually accomplished by hand. In any event, the methods practiced are not altogether satisfactory and they consume considerable time.

It is therefore one object of my invention to provide for an automatic filling or stuffing of a canvas or other tubing or "edge-roll" of upholstering material, and as the filling material is fed into and packed in the tubing or "edge-roll", the latter is gradually forced off of its support so that the filling or stuffing and packing may continue evenly and continuously from the bottom until the tubing or "edge-roll" is full.

Another object of the invention resides in the provision of a device of the nature stated embodying such characteristics that a canvas or other tubing may be simultaneously stuffed, packed and removed from the device in a single operation.

A still further object is to provide a device having in its aggroupment of parts mechanism to effectually perform the functions of supporting the tubing of suitable material and supplying the same with a filler of hair, cotton, sawdust, felt or other suitable stuffing material without a resultant bunching or lumping of the tubing incident to the filling and packing operation and a simultaneous removal of the tubing during and at the end of the filling process.

It is still further designed to provide a device capable of feeding the stuffing material continuously and evenly to the tubing and pack it therein from the bottom until the tubing is full, with means coöperating with

the feeding and packing mechanism to prevent clogging of the filling material in the supporting tube and also to obviate the possibility of the filling material working backwardly in the tubing incident to reciprocation of the feeding element in the supporting tube, which element also performs the function of packing.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it being understood that changes may be made in the form, proportion, size and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a side elevation of a machine constructed to perform the functions herein set forth. Fig. 2 is a longitudinal sectional view. Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1. Fig. 4 is a top plan view of a portion of the device. Fig. 5 is a horizontal fragmentary section of the "edge-roll" supporting tube. Fig. 6 is a longitudinal sectional fragmentary view of the "edge-roll" supporting tube. Fig. 7 is a detail side elevation illustrating a portion of the feeding plunger. Fig. 8 is a fragmentary plan view of the feeding element. Fig. 9 is a sectional view of the material formed into an "edge-roll" for disposition upon the holding tube. Fig. 10 is an end view of the supporting tube illustrating the means to prevent a lumpy packing of the edge roll.

In the use of the present invention, it will be understood that I provide for the formation of cushion edges or edge rolls on upholstered goods, such as car seats, automobiles, chairs, couches, box springs and the like. It will also be understood at the outset that the material with which the roll is stuffed is preferably fed automatically instead of by hand, and reference to the accompanying drawings will disclose that my improved device is mounted upon a suitable bench or table 1 supported upon suitable supporting legs 2, 3 and 4, arranged upon opposite sides of the table, the legs 2 and 3 upon each side of the table being preferably braced by the braces 5 and the legs 3 and 4 upon each side of the table being preferably con-

5 nected by a strip 6. However, the means for mounting the device is immaterial, and it will be understood that any other suitable supporting means for the support of the device may be employed.

10 Disposed upon the table 1 intermediate the ends of the latter is a supplemental table 7, which is arranged in spaced relation to the main table and supported upon the latter by means of suitable standards 8 whose feet 9 are pierced by the bolts 10 which pass through the table 1 to provide for a firm and rigid mounting of the supplemental table 7.

15 The supplemental table 7 is comparatively short and is designed to support the hopper 11, which preferably has an inclined bottom 12 terminating at its lower portion short of the supplemental table 7, as clearly shown in Fig. 3. This hopper 11 is provided with a hollow extension 13 into which is screw threaded or otherwise firmly fitted the inner end of the "edge-roll" supporting tube 14, the hollow extension 13 of the hopper 11 having unrestricted communication with the interior of the latter, and the hopper being also provided with an opening 15 in its rear in alinement with the hollow extension 13 for a purpose presently explained.

30 The "edge-roll" supporting tube 14 is preferably cylindrical in cross section and may be composed of any suitable material and obviously be of any desired length. Throughout the entire lower portion of the supporting tube 14 I dispose a strip of soft metal or other suitable material 16, whose body is preferably substantially semi-circular in cross section and which is held against displacement in the supporting tube 14 by means of one or more screws 17, with the heads of the screw or screws 17 counter sunk in the tube 14 to obviate the possibility of a rough part or projection liable to interfere with the sliding movement of the "edge-roll" 18 as the latter is being gradually filled, packed and removed automatically from the supporting tube 14 in a manner hereinafter understood.

50 The strip 16 disposed in the supporting tube 14 is preferably provided with a dovetailed longitudinal groove 19 for the slidable reception of the dovetailed bar, plunger, or feeding element 20, which latter is of a length greater than the supporting tube 14 and whose rear end extends through the hopper 11 and which is adapted to reciprocate in the supporting tube and through the hopper 11 and its opening 15. The feeding element 20 is provided with upwardly directed teeth 21 which extend above the upper edge of the strip 16 but which terminate short of the upper portion of the supporting tube 14. These teeth are designed to force the filling material, such for instance as hair, toward the outer end of the support-

ing tube, as will be explained, and in order to prevent the filling material from being drawn backwardly toward the hopper incident to the backward movement of the feeding element 20, in its reciprocation, there is provided a row of steel or other pins 22 upon each side of the feeding element 20, these pins 22 being secured in the strip 16 in any suitable manner and having their upper ends preferably curved slightly toward the outer end of the supporting tube 14, whereby material fed into the tube 14 and consequently toward the bottom or outer end of the "edge-roll" 18 is not drawn back into the hopper 11 incident to the backward movement of the plunger or feeding element 20 in the operation of the latter.

Secured to the rear end of the table 7 in any suitable manner, such for instance as by means of fastenings 23, is a pair of guides 24, whose outer ends are supported by means of the support 25, whose feet 26 are secured to the table 1 by means of suitable fastenings 27. These guides 24 are adapted to slidably support a block 28 provided at its inner end with a socket 29 adapted to receive the reduced inner end 30 of the feeding element 20, there being a fastening element 31 adapted to secure the inner end of the feeding element in said socket, as clearly shown in Figs. 1, 2 and 4.

Mounted in suitable journal supports 32 secured to the table 1 in any suitable manner is a shaft 33, upon one end of which is disposed a fly wheel 34 and upon which is also secured a disk 35 near the periphery of which latter is secured one end of a pitman 36 by means of a suitable pivot 37, the opposite end of the pitman 36 being pivotally secured at 38 to the slidable block 28, so that as the shaft 33 is rotated, in a manner hereinafter described, the feeding element 20 will be consequently reciprocated to feed the filling material of the hopper 1 into the supporting tube 14.

In order to provide for a proper feeding of the filling material of the hopper 11 to the bottom thereof, so that the filling material may be taken up by the feeding element 20, I dispose in the hopper transversely thereof a pair of feed rollers 39 and 40, which are mounted upon the shafts 41 and 42, respectively. These rollers 39 and 40 are driven positively and automatically during the reciprocation of the feeding element 20, and one form of means for driving these rollers 39 and 40 may be accomplished by providing the shaft 41 with a pinion 43 adapted to mesh with a gear wheel 44 mounted upon the stud shaft 45 journaled at 46 in one side of the hopper 11 and also in the journal support 47 secured by suitable fastenings 48 to the table 1. The pinion 43 and gear 44 are always in mesh, and upon said shaft 45 adjacent the gear 44 I

dispose a ratchet wheel 49 with the teeth of which latter engages a pawl 50 secured to the oscillating plate 51 mounted upon the shaft 45, there being a pitman 52 pivotally connected at 53 to said plate 51 and connected at its opposite end to the eccentric strap 53', which latter embraces the eccentric 54 loosely mounted upon the aforesaid shaft 33. The result is that upon rotation of the shaft 33 the eccentric 54 rotates with it and by virtue of its mounting within the eccentric strap 53' the pitman 52 is forced into a backward and forward reciprocation with a consequent intermittent engagement of the pawl 50 with the teeth of the ratchet wheel 49, which causes rotation of the gear 44, and incident to the mesh thereof with the pinion 43 and the latter meshing with a pinion 55 on the shaft 42 of the roller 40, the feed rollers 39 and 40 operate to feed the filling material down to the lower portion of the hopper so that it may be readily, evenly and uniformly taken up by the feeding element 20 for the purposes hereinbefore stated.

Disposed upon the shaft 33 is a pulley 56 over which works a belt or other suitable connection 57, which also works over a pulley 58 on the shaft 59 mounted in suitable journals 60 above the cross pieces 6. By virtue of this connection 57 between the shafts 33 and 59, the feeding element is operated simultaneously with operation of the feed rollers 39 and 40 when the shaft 59 is driven through the instrumentality of any suitable driving mechanism (not shown) with which the belt 61 passing over the pulley 62 on the shaft 59 is connected.

It may be desired to overcome the possibility of bunching of the "edge-roll" material and a consequent lumping of the "edge-roll" incident to the filling of the latter and the packing of the material therein and the removal of the "edge-roll" from its supporting tube 14. One means for performing this function may consist in a sleeve 63 which is preferably split longitudinally throughout its length and having such a slit for the purpose of permitting transverse contraction and expansion of the sleeve upon operation of the bolts 64, so that the tubing or "edge-roll" may be properly tensioned upon the supporting tube 14 to preclude the possibility of a lumpy packing of the edge-roll. The bolts 64 are preferably screw threaded through standards 65 mounted upon the table 1 with their inner ends fitted in the bosses 66 on opposite sides of the sleeves 63.

In practice, the tubing or "edge-roll" 18 is formed into substantially bag shape, that is, the edges and one end being closed and the opposite end open. The roll edge or tubing thus formed is then placed upon the holding tube 14, with the closed end at the

outer end of the latter. The device is then set into operation and the filling material of the hopper is fed downwardly between the feed rollers 39 and 40 and into the supporting tube 14, through which latter it is worked to the outer end thereof by means of the reciprocating feeding element 20. After the filling material is conveyed to the outer end of the supporting tube and consequently to the closed end of the edge-roll, the latter gradually becomes stuffed or filled, resulting in the tubing or edge-roll incident to the packing and filling or stuffing material therein, being forced gradually off of the tubular support 14 so that the filling or stuffing and packing may continue evenly and continuously from the closed end of the edge-roll until the latter is full. As shown, the cross sectional view in Fig. 10 discloses an edge-roll prior to being filled, and also indicates one method of securing the sides of the edge-roll together.

What is claimed is:—

1. In an upholstering device, a hopper, a tube for the support of the edge-roll and having communication with the hopper, a filling strip in the bottom of the tube, means mounted in the filling strip to prevent backward movement of the filling material during reciprocation of the feeding element, and means for operating the feeding element.

2. In an upholstering device, a hopper, a tube for the support of the edge-roll and having communication with the hopper, feed rollers in the hopper, gears disposed on the axes of said rollers for mesh with each other, a feeding element operable in said tube, a drive gear mounted adjacent the hopper for mesh with one of the aforesaid gears, a ratchet mounted adjacent the drive gear, a shaft, a disk on the shaft, a connection between said feeding element and said disk for operating the feeding element upon operation of said shaft, an eccentric mounted upon said shaft, a pitman having connection with said eccentric, a pawl carried by said pitman for engagement with said ratchet, and means for driving said shaft whereby said rollers and said feeding element may be operated simultaneously.

3. In an upholstering device, a hopper, a tube for the support of the edge-roll and having communication with the hopper, the hopper having an opening disposed in alignment with said tube, a toothed feeding element mounted for reciprocation in said tube and through said opening of the hopper, feed rollers in the hopper, gears upon the axes of said rollers for mesh with each other, a drive gear mounted adjacent the hopper for mesh with one of the aforesaid gears, a ratchet wheel adjacent the drive gear, a guide-way disposed in alignment with the opening of the hopper for the guidance of one end of the feeding element, a block

mounted in said guide-way and having detachable connection with said feeding element, a shaft, a disk fixedly mounted on the shaft, a connection between the disk and said
5 block whereby the feeding element may be reciprocated upon operation of said shaft, an eccentric strap mounted upon said shaft, a pitman having connection with said strap, a pawl on the pitman for engagement with
10 said ratchet, an eccentric mounted in said eccentric strap for operation upon rotation of said shaft to effect a reciprocating movement of said pitman to actuate said ratchet and thereby operate said drive gear to ef-
15 fect rotation of said rollers simultaneously with the reciprocation of said feeding element, and means for driving said shaft.

4. In an upholstering device, a tube for the support of the edge-roll, means to con-
20 tain the filling material for discharge into the tube, a toothed longitudinally reciprocating element in the tube to feed the material through the latter, means to prevent a lumpy packing of the edge-roll during the
25 filling of the same, and pins in the supporting tube for coöperation with the toothed

feeding element to prevent backward movement of the filling material incident to backward movement of the feeding element.

5. In an upholstering device, a tube for 30 the support of the edge roll, a filling strip in the bottom of the tube and provided with a groove to form a guide-way, a longitudinally reciprocating feeding element mounted in the guide-way of said strip, and means 35 for operating the feeding element.

6. In an upholstering device, a tube for the support of the edge roll, a filling strip in the bottom of the tube and provided with a groove to form a guide-way, a longitudi- 40 nally reciprocating feeding element mounted in the guide-way of said strip, means for operating the feeding element, and means within the tube to prevent backward move- 45 ment of the filling material during reciprocation of the feeding element.

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

CHARLES RUTSON.

Witnesses:

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WM. B. KNICKERBOCKER, Jr.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
