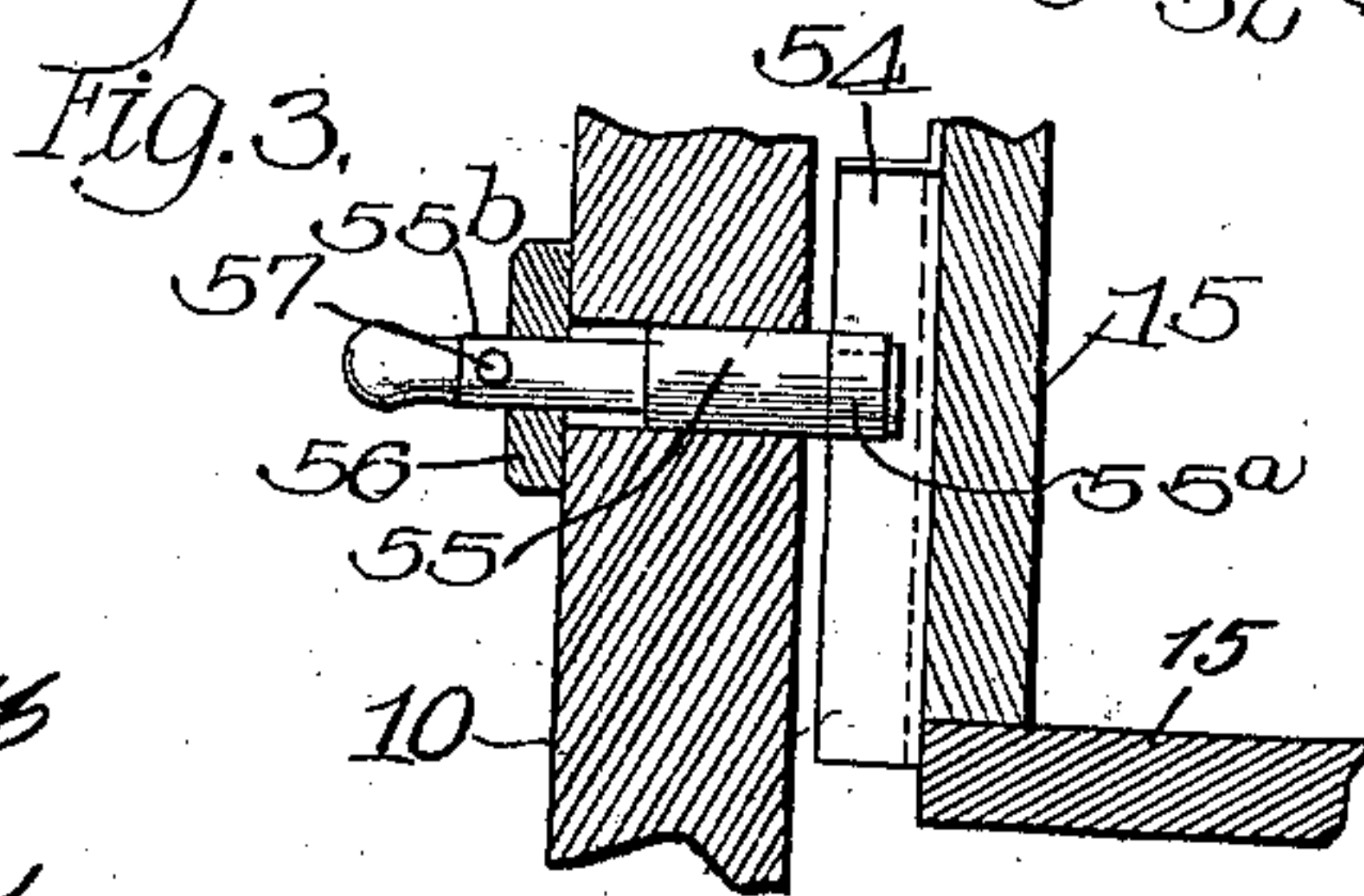
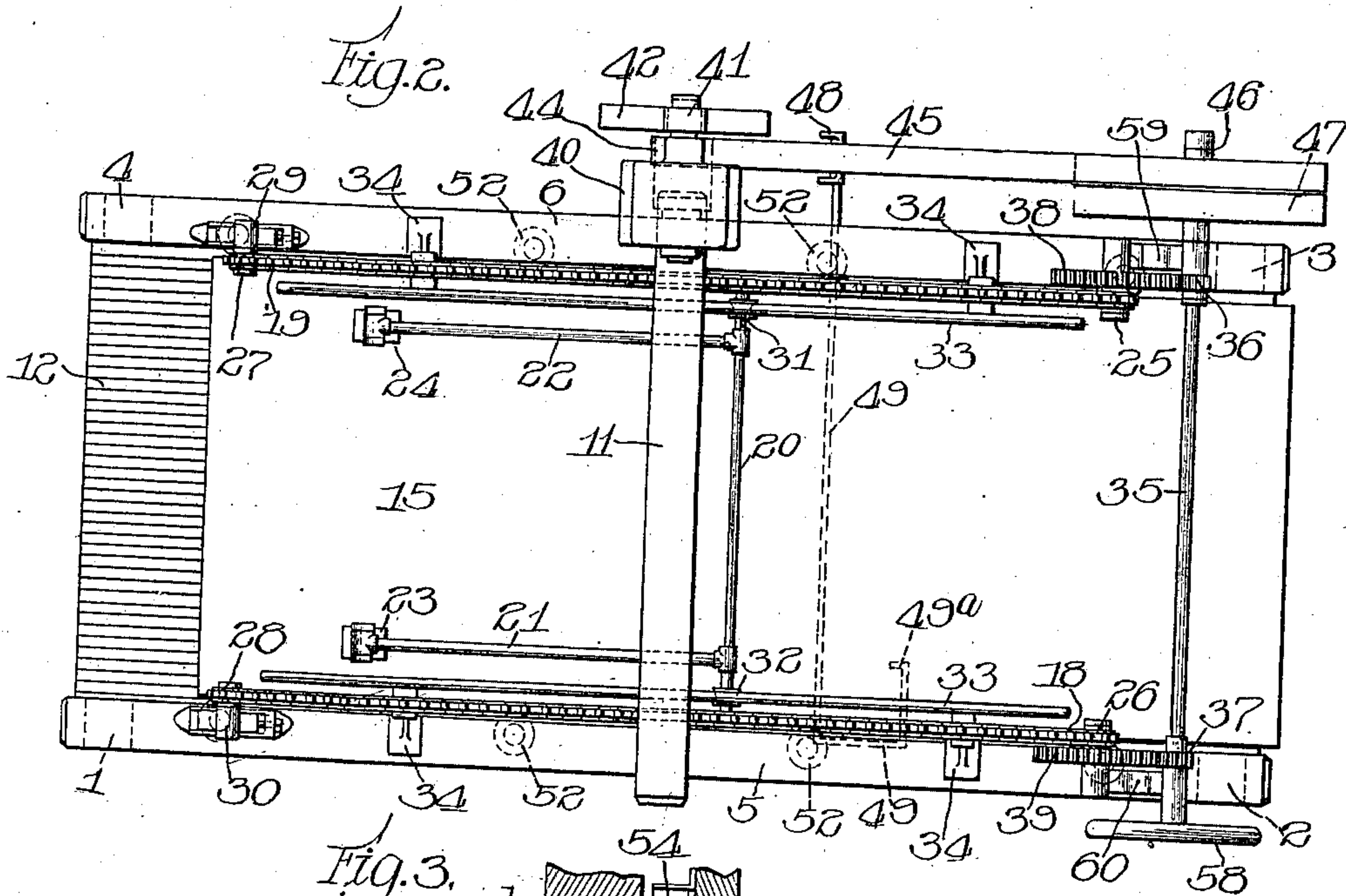
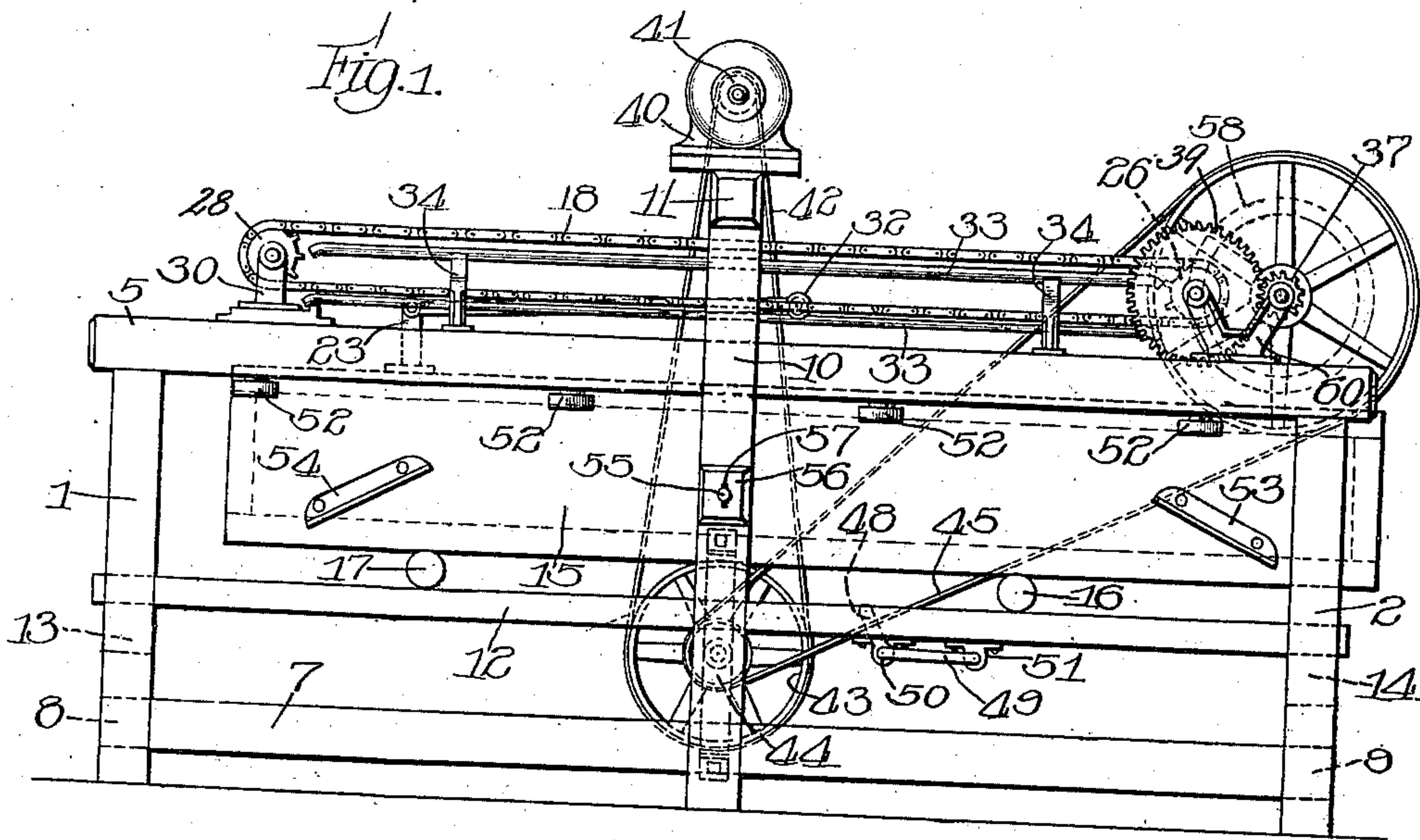


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MANGLE.

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989,669.

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HENRY WALTER TUTTLE, OF CHICAGO, ILLINOIS.

MANGLE.

989,669.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY WALTER TUTTLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mangles, of which the following is a full, clear, and exact specification.

The invention relates to mangles or machines for ironing cloth, and has for its primary object to provide an improved mechanism of the class described that is simple, cheap and efficient.

The invention relates more particularly to that class of mangles in which the cloth or articles of clothing to be ironed are wrapped around suitable cylindrical rollers, after which these rollers containing the cloth or articles of clothing rolled around them are engaged between two flat surfaces, one of which surfaces is movable relatively to the other, and a further object of the invention is to provide improved means for imparting reciprocating movement to the movable member, which is provided with one of the flat surfaces for engaging the cylindrical rollers around which are wrapped the cloth or articles of clothing to be ironed.

A further object of the invention is to provide improved means in a device of the class described for automatically separating the two coöperating surfaces which engage the rolls containing the articles to be ironed.

To the attainment of these ends and the accomplishment of certain other new and useful objects which will appear, the invention consists in certain other features of novelty hereinafter described, shown in the accompanying drawings forming a part of this specification, and pointed out more specifically in the appended claims.

In the said drawings—Figure 1 is a side elevation of the improved device. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged detail sectional view showing the construction of the means employed in lifting the reciprocating compressing member at the ends of its stroke.

In the construction of the main supporting frame of the machine, any suitable material may be employed and any desired and suitable arrangement of the members composing the main frame may be employed. A convenient manner of constructing such a frame is shown in the drawings, consisting of four corner posts, as indicated by the

reference numerals 1 to 4 respectively. The pair of posts on each side of the machine are connected at the top by suitable longitudinal members 5 and 6. Near the bottom the posts are also preferably connected by suitable longitudinal members as indicated by the reference character 7. Suitable members as indicated at 8 and 9 may extend laterally between the adjacent end posts, preferably near the bottom thereof. On each side thereof suitable uprights as indicated by the reference character 10 are constructed. The middle uprights 10 preferably extend some distance above the longitudinal top members 5, 6 as indicated in Fig. 1, and are joined at their upper extremities by the cross member 11. A flat table-like surface for the ironing operation is provided, as indicated by the reference character 12, and the same is preferably supported upon the frame as described by the cross members 13, 14, indicated in dotted lines in Fig. 1, as extending between the adjacent end corner posts. The member 12, presenting the stationary ironing surface or table, may be of any desired construction, but it is preferable that it be formed of a plurality of relatively thin strips of wood set on edge and extending longitudinally of the machine being glued or otherwise securely fastened together. This manner of constructing the table member 12 insures a flat surface that is not liable to warp or get out of order, and it is preferable that the member 12 be constructed so that it will be detachable, so that if both sides thereof be finished, it may be reversed, thus giving double length to the life of it.

For coöperating with the table-like surface of the member 12, a reciprocating member 15 is provided. This member preferably consists of a rectangular box having the bottom thereof constructed preferably of a plurality of thin wood strips set on edge and extending longitudinally thereof, following the construction of the stationary member 12 just described. The reciprocating member 15 is preferably constructed to have considerable weight in order to secure the necessary pressure on the cloth articles to be ironed. To secure this weight, it is preferable that it be constructed of a box-like frame as described, and provision made for filling the interior thereof with some suitable and cheap material, as stone or iron ore to give it the desired weight. In Fig.

1 the reference characters 16, 17 indicate cylindrical wood rollers adapted to be placed between the stationary member 12 and the reciprocating member 15, and around which
5 the articles to be ironed are rolled or wrapped.

Reciprocation is imparted to the member 15 by means of suitable endless belts 18, 19, cross-connecting member 20 and pitmen 21,
10 22 pivotally secured to the cross connecting member 20 and to suitable uprights 23, 24 secured to the top of the member 15. The endless belts 18, 19 may be of any desired construction but it is preferable that they
15 be of a metallic chain link of the ordinary open link construction, as illustrated, and carried on suitable driven sprockets at one end as indicated at 25, 26, and at the other ends of their run by the idler sprockets 27,
20 28. The sprockets 27, 28 are mounted to rotate on suitable standards 29, 30, which are adjustable on the main frame longitudinally of the run of the chains, for the purpose of adjusting them in tightening the
25 chains.

In order to support the cross-bar 20 connecting the chains against undue vibration, it may be provided at its ends near the point of attachment to the chains with suitable
30 grooved rollers or sheaves 31, 32, adapted to cooperate with the longitudinal rails 33, of which there are two adjacent each of the chains 18, 19, there being a rail adapted to support both the upper and lower runs of
35 the chains. These supporting rails 33 are carried on suitable brackets 34 secured to the top members of the main frame. Rotation is imparted to the driving sprockets 25, 26 from the main driving shaft 35 through
40 the gears 36, 37 secured to the shaft which mesh with gears 38, 39 revoluble with the sprockets 25, 26. Rotation may be imparted to the driving shaft 35 in any desired manner. In the embodiment of the invention
45 herein shown, a suitable electrically or otherwise driven motor as indicated at 40 is mounted on the top of the upper cross member 11 of the main frame from the driving pulley 41 of which a suitable belt 42 is
50 passed over the larger one of the reducing pulleys 43, 44 which are rigidly secured together. The pulley 44 is preferably of sufficient width to permit of the shifting of the belt 45 thereon, which belt passes from this
55 pulley over the pulleys 46 and 47 on the end of the driving shaft 35. In order to throw the shaft 35 in and out of gear, one of the pulleys 46, 47 is adapted to run loose on the shaft in the usual manner, while the other
60 is fixed, and the belt may be shifted to either the loose or the fixed pulley by means of the shifter fork 48 carried on shifter arm 49 mounted in any suitable manner to have longitudinal movement on the main frame.
65 In the drawings this belt shifter rod 49 is

carried by suitable stirrups or brackets as indicated at 50, 51, and extends from the side of the machine on which the motor and driving belt appears, to the opposite side on which the operator is ordinarily positioned, 70 in order that it may be within convenient reach for the operator. A convenient form to be given to this shifter rod 49 is that illustrated in Fig. 2, in which the end opposite the shifter fork 48 is given a U-shaped 75 bend, the free end of which is slidably mounted in the supporting member 51 on the main frame, and the extremity of its free end is given a sharp bend as indicated at 49^a to limit its movement in the support- 80 ing member 51.

In the operation of the device it will be seen that the rotation of the motor 40 will impart movement to the main driving shaft 85 through the driving belts 42 and 45, and their associated pulleys, which rotation will be imparted through gears 36, 37, 38 and 39, to the driving sprockets 25, 26, which will move the chains and the movement thus
90 imparted to the chains 18, 19 carried on driving sprockets 25, 26 will be imparted to the cross-member 20 and the pitmen 21, 22 carried thereby. The cross-member 20 traveling with the chains throughout the lengths
95 of the runs thereof will impart a corresponding movement to the reciprocating member 15 supported by rollers 16 and 17 on the table surface 12. The reciprocating member 15 is guided in its movement in relation to the main frame by a plurality of 100 rollers, as indicated at 52, the same being located at suitable intervals on some portion of the main frame adjacent the movable member 15, preferably being journaled as
105 illustrated to the under side of the longitudinal top members 5 and 6 of the main frame. When mounted in this manner the rollers 52 will contact with the sides of the reciprocating member 15 when approached
110 by it, and will serve as a convenient and efficient guide for the same.

The operation of the machine is as follows: The cloth or clothes to be ironed are laid flat on a strip of some suitable material, as cotton canvas, which is the preferred 115 material for this purpose. The canvas and the cloth or articles to be ironed are then rolled around the rollers 16, 17, after which the rolls containing the articles to be ironed are placed in position on the table 12 with the 120 reciprocating member 15 on top of the rolls, and having its weight supported thereby. The mechanism is then thrown into gear by the movement of the shifter rod 49, which causes the main driving shaft 35 to be ro- 125 tated, and its movement is imparted through the associated gearing and the driving chains 18, 19, which carry the cross-member 20 throughout the length of the runs of these chains, thus imparting reciprocating move- 130

ment to the member 15 through pitmen connections 21, 22. In practice three or more of the rollers 16, 17 are provided, in order that there may be one or more extra rollers around which the cloth or clothing to be ironed may be wound, while two of them are in the machine being operated.

The reciprocating member 15 when constructed as described may be made as heavy as desired, in order that any desired amount of compression may be secured for the purpose of smoothing or ironing the cloth or articles of wearing apparel on the rollers. In order to provide convenient means for lifting the reciprocating compression member 15, when it is desired to remove or insert rollers containing the material to be ironed, one side of the member 15 is provided near each of its ends with suitable cleats 53, 54, presenting protruding angular surfaces which are adapted to engage a suitable movable projection on the main frame, as, for example, the pin 55, which is slidably mounted in the upright 10 of the main frame, and is provided at its inner end with an anti-friction roller 55^a adapted to engage with the protruding flanges or tracks on the cleats 53, 54. The pin 55 preferably has the main body portion and the anti-friction roller 55^a of approximately the same diameter. The other end is preferably of reduced diameter, as indicated at 55^b. When inserted in the aperture in the upright 10, it may be secured against withdrawal by means of the member 56, which is suitably secured to the upright 10 around the aperture, and which itself is provided with an aperture of sufficient size to accommodate the reduced outer end 55^b. The cross-pin 57 in the reduced portion 55^b serves to limit movement in one direction while the shoulder formed by the body portion 55 contacting with the member 56 limits movement in the other direction. When the machine is being normally operated, the engaging member 55 will be withdrawn, but when it is desired to raise or tilt one end of the reciprocating member 15, the member 55 will be pushed inwardly as the angular track on the end to be raised approaches the middle upright support 10. The anti-friction roller 55^a on the inner end of the member 55 will then engage the surface of one of the angular cleats 53 or 54, which will cause that end of the member 15 to be raised bodily off the adjacent roller on the other roller as a fulcrum. This tilting of the reciprocating member 15 will release the roller at the end adjacent the cleat engaging with the lifting pin 55, which will permit the withdrawal of the released roller and the insertion of another roller around which cloth or clothing has been wrapped or rolled for the purpose of being ironed.

In order that the invention might be fully

understood the details of the preferred embodiment thereof have been thus specifically described, but

What I claim and desire to secure by Letters Patent is:

1. In a machine of the described character the combination of a main frame, a stationary member secured to the main frame and provided with a plane surface, a movable member provided with a plane surface adapted to cooperate with the plane surface of the stationary member, rollers loosely mounted between the cooperating surfaces of the said stationary and movable members and adapted to be wrapped with articles for ironing, means for imparting a reciprocating movement to said movable member, said last mentioned means comprising a pair of endless belts mounted to travel in substantially parallel directions on the main frame, a cross-bar connected at its ends to the said belts and adapted to travel therewith, and pitmen connections secured to the said cross-bar and to the said movable member.

2. In a machine of the described character the combination of a main frame, a stationary member secured to the main frame and provided with a plane surface, a movable member provided with a plane surface adapted to cooperate with the plane surface of the stationary member, a plurality of rollers loosely mounted between the cooperating surfaces of the said stationary and movable members and adapted to be wrapped with articles for ironing, a pair of endless belts mounted to move in substantially parallel paths on the main frame, a cross-bar connected at its extremities to each of said belts and adapted to move therewith and connections between the said cross-bar and the movable member whereby a reciprocating movement is imparted to the said movable member, anti-friction wheels on the cross-bar adjacent each end thereof, and tracks for the said anti-friction rollers adjacent the runs of the chains and supported on the main frame.

3. In a machine of the described character the combination of a main frame, a stationary member secured to the main frame and provided with a plane surface, a movable member provided with a plane surface adapted to cooperate with the plane surface of the stationary member, a plurality of rollers loosely mounted between the cooperating surfaces of the said stationary and movable members and being adapted to be wrapped with articles for ironing, means for imparting a reciprocating movement to said movable member comprising a pair of endless belts, a cross-bar carried by said belts, a plurality of pitmen pivotally secured to said cross-bar and to said movable member, tracks secured to the main frame adja-

cent the runs of the endless belts, and anti-friction means mounted on the said cross-bar and coöperating with said tracks.

4. In a machine of the described character,
 5 the combination of a main frame and stationary member secured to the main frame and provided with a plain surface, a movable member provided with a plain surface adapted to coöperate with the plain surface of the
 10 stationary member, rollers loosely mounted between the coöperating surfaces of the stationary and movable members and adapted to be wrapped with articles for ironing, means for imparting a reciprocating move-
 15 ment to said movable member comprising a pair of endless belts mounted to travel in substantially parallel directions on the main frame, a cross-bar connected at its ends to the said belts and adapted to travel there-

with, connections between said cross-bar and 20 said movable member, and means for tilting said movable member adjacent the extremities of its movement comprising angular cleats secured to the sides thereof, and an adjustable pin carried by the main frame 25 and provided with an anti-friction roller on the inner extremity thereof adapted to engage with the said angular cleats on the movable member.

In testimony whereof I have signed my 30 name to this specification, in the presence of two subscribing witnesses, on this 13th day of March, A. D. 1909.

HENRY WALTER TUTTLE.

Witnesses:

A. L. SPRINKLE,
 C. H. SEEM.

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