

No. 717,462.

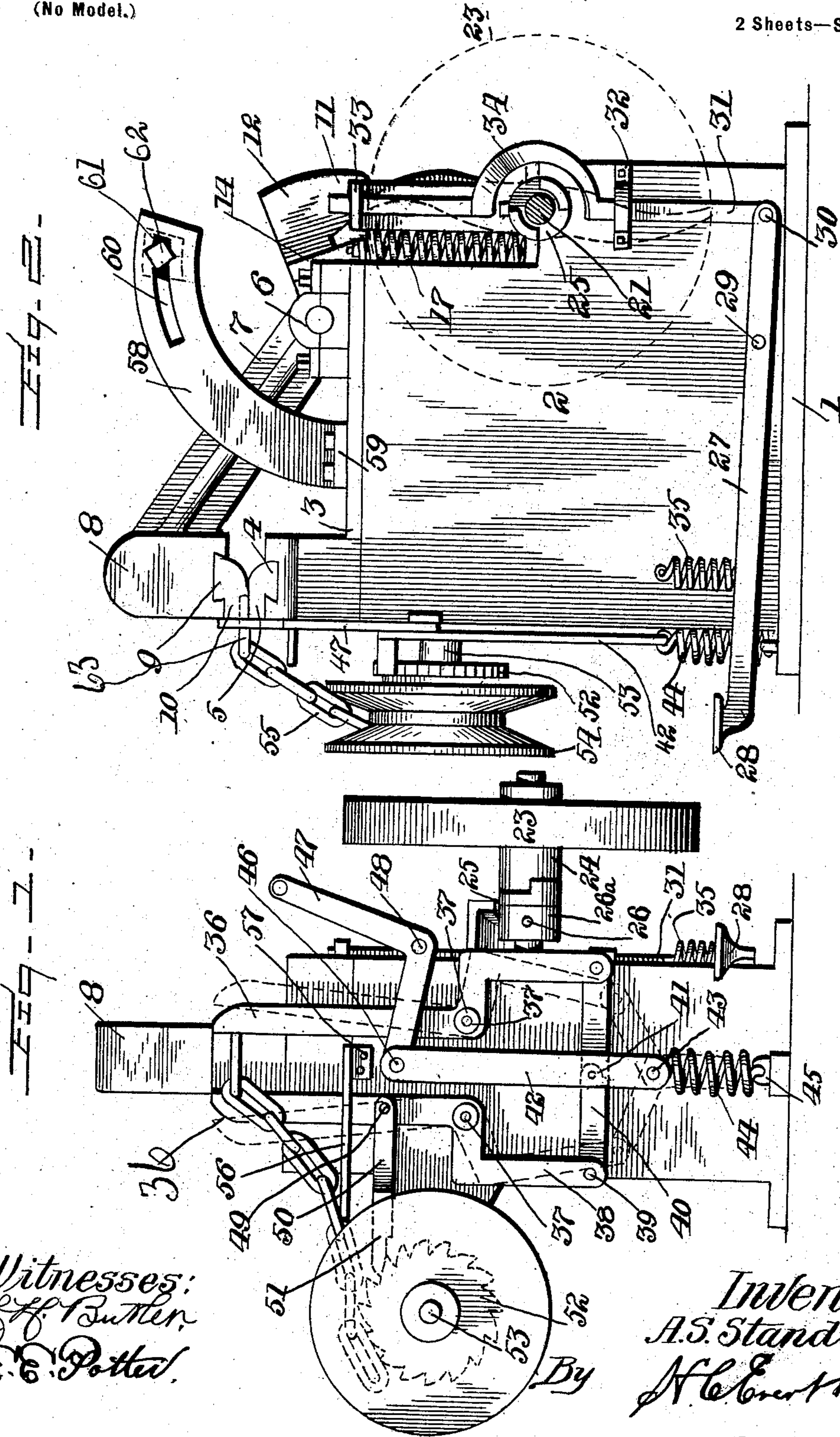
Patented Dec. 30, 1902.

A. S. STANDISH.
CHAIN MAKING MACHINE.

(Application filed Dec. 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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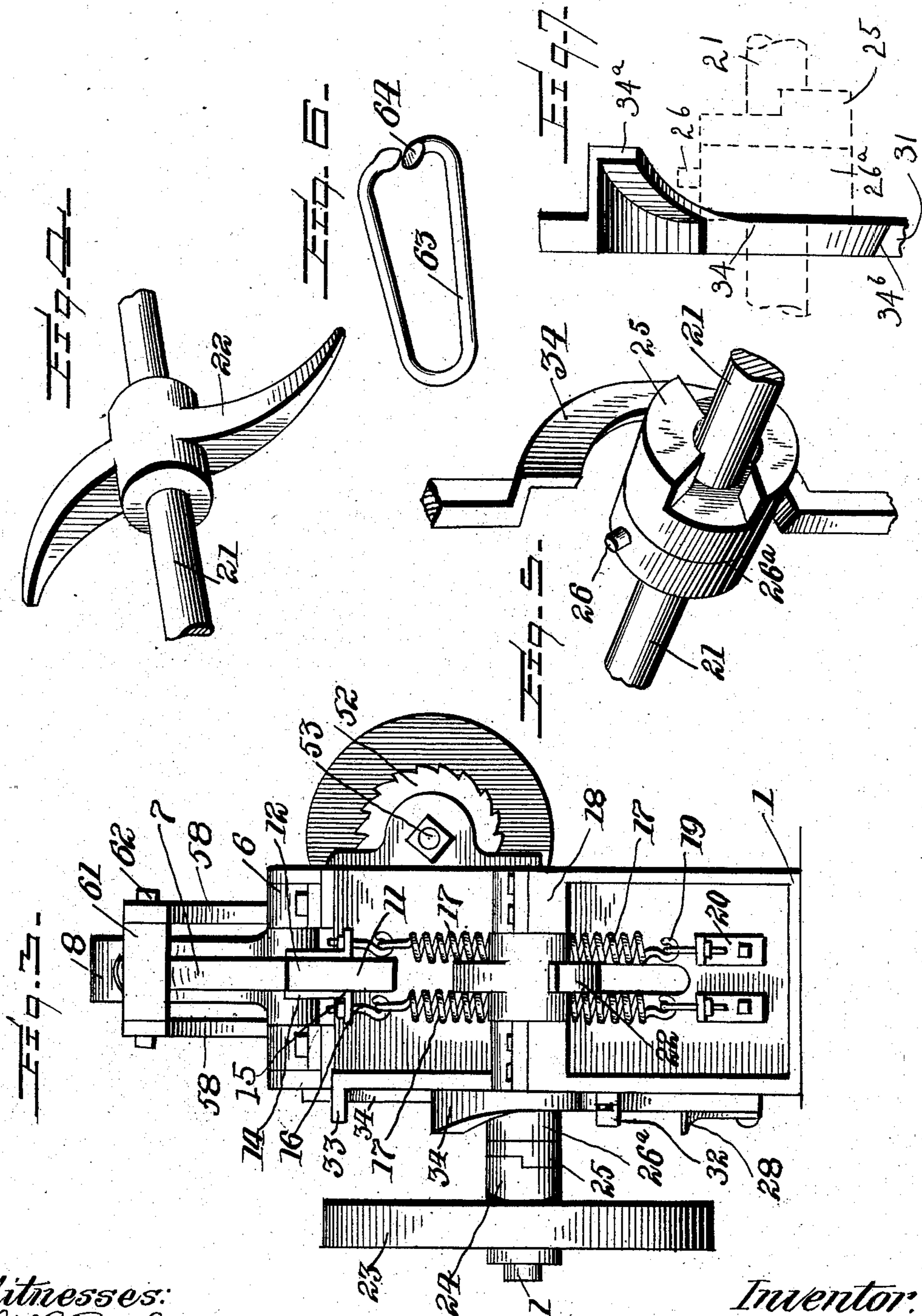
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UNITED STATES PATENT OFFICE.

ALBERT S. STANDISH, OF PITTSBURG, PENNSYLVANIA.

CHAIN-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 717,462, dated December 30, 1902.

Application filed December 11, 1901. Serial No. 85,449. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. STANDISH, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Chain-Making Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in chain-making machines, and has for its object the provision of novel means whereby metal links or bars may be joined together by welding or swaging.

15 The invention has for a further object to provide a machine that may be constantly driven and an intermittent movement obtained of the hammer for joining the links together; furthermore, to provide an attachment that will effectually limit the stroke of the hammer.

20 The invention still further contemplates to provide a set of clamping-jaws wherein the link that is to be closed is securely held until the hammer has performed its function and then released in order to allow each consecutive link to be operated upon in a like manner.

25 The present invention further aims to provide in a machine of the above-described character an attachment that will instantly place the machine in an inoperative position.

30 The invention still further aims to provide a machine that will be extremely simple in construction, strong, durable, comparatively inexpensive to manufacture, and highly efficient in its use.

35 With the above and other objects in view the invention consists in the novel combination and arrangement of parts to be herein after more fully described, and specifically pointed out in the claims.

40 In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

45 Figure 1 is a front elevation of my improved machine. Fig. 2 is a side elevation thereof. Fig. 3 is a rear elevation. Fig. 4 is a perspective view of the wiping-cams. Fig. 5 is a view in perspective of one of the clutch

members arranged on the driven shaft and a portion of the clutch-operating slide. Fig. 6 is a perspective view of one of the links before the same is closed by the hammer. Fig. 7 is a view in front elevation of a portion of the clutch-operating slide and showing the relative position thereto of the inner clutch member, the latter to be shown in dotted lines.

60 In the drawings the reference-numeral 1 indicates a suitable base or support, upon which is mounted the body portion 2. Upon said body portion is suitably secured a head 3. In said head 3 is a dovetail groove 4 for the reception of the anvil 5.

65 The reference-numeral 6 represents bearing-blocks secured upon the head 3. In said bearing-blocks is arranged a hammer 7, this hammer carrying a head 8, the under face of which has formed therein a dovetail guide-way 9 for the reception of the die or anvil 10, which is movable with the hammer. At the other end of this hammer 7 is a downwardly-extending cam-face 11. (Shown in Fig. 2 of the drawings.) This portion 11 is formed integral with and extends downwardly from the trip-arm 12 of the hammer, upon which is secured the yoke 14, the lower ends of said yoke being bent outwardly, as shown at 15, to receive the hooks 16, to which are attached springs 17, extending through the bearing 18, and at their lower ends these springs 17 are secured at 19 to lugs 20 in the body portion of the machine. Through the bearing 18 extends a driven shaft 21, upon which are mounted wiping cams or wings 22. These wings are curved, and 23 represents a driven pulley, which is loosely mounted upon the shaft and carries a clutch member 24, which engages the clutch 25 of the driven shaft. A pin 26 is carried by the collar 26^a, the latter being mounted upon the driven shaft.

75 The reference-numeral 27 represents a foot-lever carrying a tread 28, said foot-lever being fulcrumed at 29 to the body portion 2, and the end of said foot-lever is pivotally secured at 30 to a clutch-operating slide 31, which comprises an upwardly-extending rod operating through guides 32 and 33, said upwardly-extending rod having formed therein a segment 34, which segment partly encircles the collar 26^a, as shown in Figs. 2 and 5 of the drawings. The upper end of the segment

34 is provided with an outwardly-curved portion 34^a, constituting a cam adapted to be engaged by the pin 26 for throwing the clutch member 25 out of engagement with the member 24. In order to throw the said movable clutch member 25 into engagement with its companion member, the rod 31 is forced upward, and thereby bringing the lower beveled or cam edge 34^b of the segment 34 into engagement with the inner end of the movable collar 26^a.

The reference-numeral 35 represents a spiral spring, which normally retains the foot-lever 27 in an elevated position, whereby the segment 34 is held out of engagement with the collar 26^a.

To the front of the body portion 2 of the machine are arranged a pair of clamping-jaws 36, operating in opposite directions, said clamping-jaws being fulcrumed at 37 and carry downwardly-extending angular arms 38, formed integral therewith, which are pivotally secured at 39 to toggle-joints 40, the latter being pivoted together centrally at 41 and are also secured to the operating-rod 42, the lower end of said operating-rod being connected at 43 to the spiral spring 44, the lower end of said spring being secured in apertured lug 45 of the base 1. The upper end of said operating-rod is pivotally secured at 46 to the operating-lever 47, the latter being fulcrumed at 48 to a suitable support or bracket.

To one of the clamping-jaws 36 is secured at 49 an arm 50, carrying on its outer end a pawl 51, operating the ratchet-wheel 52, which is mounted upon the common shaft 53, the latter carrying the grooved guide-wheel 54, over which the chain 55 passes.

The reference-numeral 56 represents a table, which is bolted at 57 to the front of the body portion 2 of the machine, upon which the chain rests as it passes over the wheel 54.

The reference-numeral 58 represents a pair of segmental guides, which are bolted at 59 to the upper face of the head 3, said segmental guides having slots 60 formed therein. Between the inner faces of said guides is secured a rubber block 61, held in position by means of bolts 62, which pass through the slots 60, said rubber block 61 serving to limit the upward movement of the hammer and cushion the stroke of the same.

The reference-numeral 63 represents one of the links of the chain 55 before the link is closed and showing the beveled contact-faces 64.

The operation of my improved machine is as follows: The loose driven pulley 23 when engaged by the clutch mechanism will impart a rotary movement to the shaft 21, carrying the wings 22, engaging the inner face of the lower extension of the hammer, thereby operating the hammer downwardly to position as shown in Fig. 2 of the drawings. When one end of the wings 22 passes this point of engagement, the springs 17 will serve to automatically raise the hammer. Simulta-

neously with this operation the rear face of the hammer will come in contact with the rubber block 61, which will limit the upward movement of the hammer and will cushion the stroke of the same. In order to clamp the links in position, the operating-lever 47 is moved by hand toward the machine, thereby lowering the operating-rod, which will be aided by the spring 44, causing the jaws to be opened, and the parts will then assume the position as shown in dotted lines in Fig. 1 of the drawings. When it is desired to clamp the links, the reverse movement takes place, bringing the operating-lever and central rod to position as shown in full lines in Fig. 1 of the drawings. When it is desired to place the machine in an inoperative position, the clutch mechanism is thrown out of engagement by means of the foot-lever 27, the rod 31 being drawn downwardly, whereby the pin 26 is brought in contact with the inner face of the cam-surface 34^a, and the movable clutch member is drawn inwardly, and, as heretofore described, in order to throw the clutch mechanism into operation the rod 31 is moved upwardly, and the lower cam-surface of the segment is brought into engagement with movable member 25 of the clutch. Simultaneously with the operation of the jaws 36 the pawl 51 is operated, thereby turning the ratchet one notch and imparting movement to the wheel 54, over which the chain 55 passes.

The many advantages obtained by the use of my improved device will be readily apparent from the foregoing description taken in connection with the accompanying drawings.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a chain-making machine, the combination with a base, a head formed integral with the base, a hammer journaled on the top of said base, and provided at its rear end with a trip-arm, springs secured to the said trip-arm and base for raising the hammer, a driven shaft, wings carried by said shaft to engage the said trip-arm, segmental guides secured to the said base at opposite sides of the said hammer, said guides having their upper ends slotted, and a buffer for said hammer mounted in the slots of the said guides, substantially as described.

2. In a chain-making machine, the combination with a base provided at one end with a head, a hammer, means to intermittently operate said hammer, clamping-jaws fulcrumed to one end of said base and having their upper ends arranged adjacent the said head, and means for opening and closing said jaws, substantially as described.

3. In a chain-making machine, the combination of a body portion, a head mounted on said body portion and an anvil secured upon

said head, segmental guides attached to said head, a buffer-stop interposed between said guides, a hammer, means to intermittently operate said hammer, clamping-jaws arranged in close proximity to said anvil, means to open and close said jaws, a chain-guide wheel journaled at one side of the said jaws, and means attached to one of said jaws to rotate said wheel, substantially as described.

10 4. In a chain-making machine, the combination of a suitable body portion, a head mounted thereon, an anvil secured upon said head, a hammer, means to intermittently operate said hammer, means carried by said head to limit the movement of said hammer, an operating-lever, clamping-jaws operated by said lever, a chain-guide wheel journaled at one side of the said jaws, means carried by one of said jaws to operate said wheel, a clutch-operating slide, and means to operate said slide, all parts being arranged and op-

erating substantially as described and for the purpose set forth.

5. In a chain-making machine, the combination of a base provided at one end with a head, a hammer, means for intermittently operating said hammer, clamping-jaws fulcrumed to the base adjacent the said head, toggle-joints pivotally connected to the lower ends of the said jaws, means for opening and closing said jaws, a ratchet-wheel arranged at one side of the said jaws, a chain-guide wheel actuated by the said ratchet-wheel, and a pawl pivoted to one of said jaws for operating the said ratchet-wheel, substantially as described.

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

ALBERT S. STANDISH.

Witnesses:

JOHN NOLAND,
E. E. POTTER.