

(No Model.)

3 Sheets—Sheet 1.

A. G. BURTON.
CLAY SEAL MAKING MACHINE.

No. 444,232.

Patented Jan. 6, 1891.

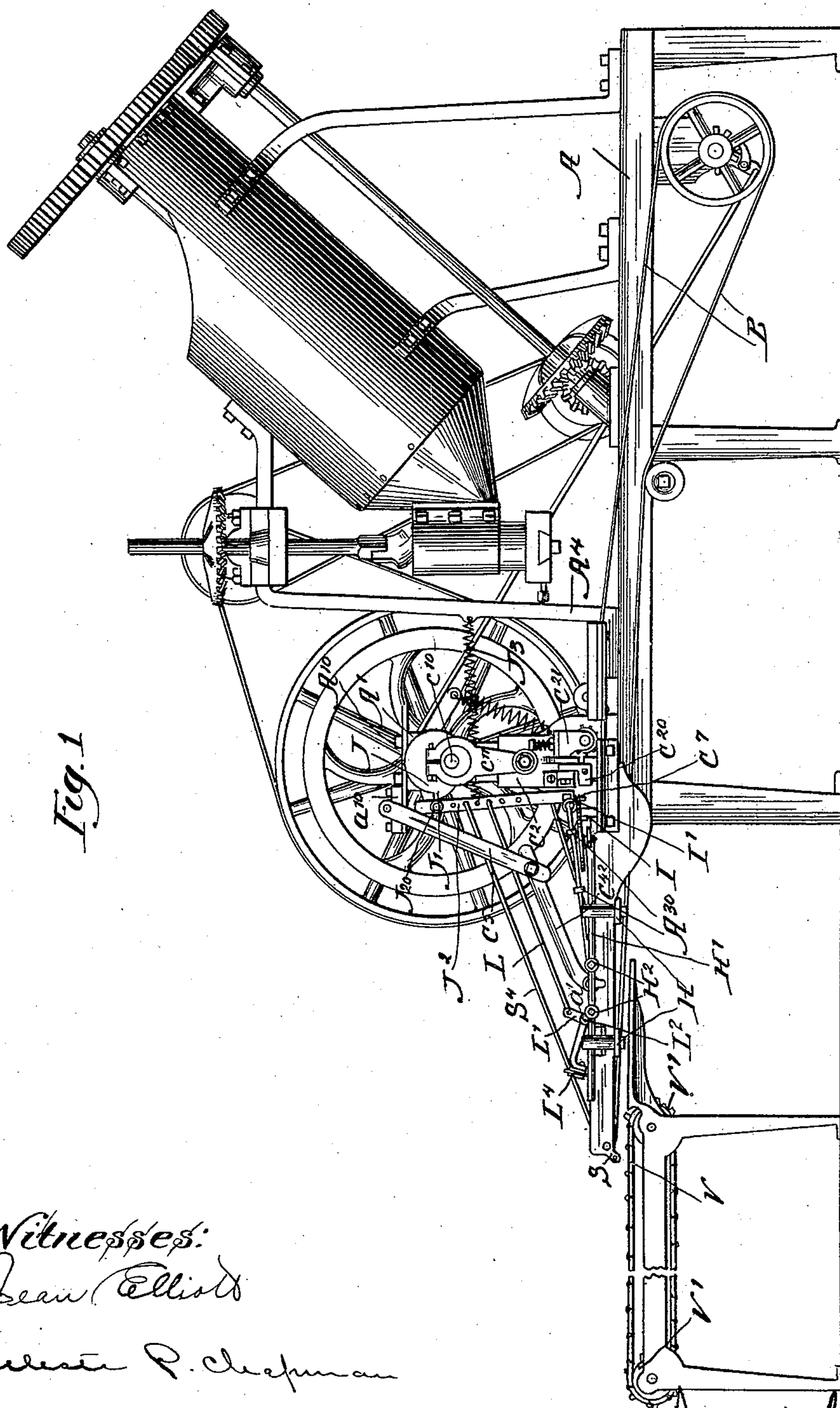


Fig. 1

Witnesses:

Jean Ellis

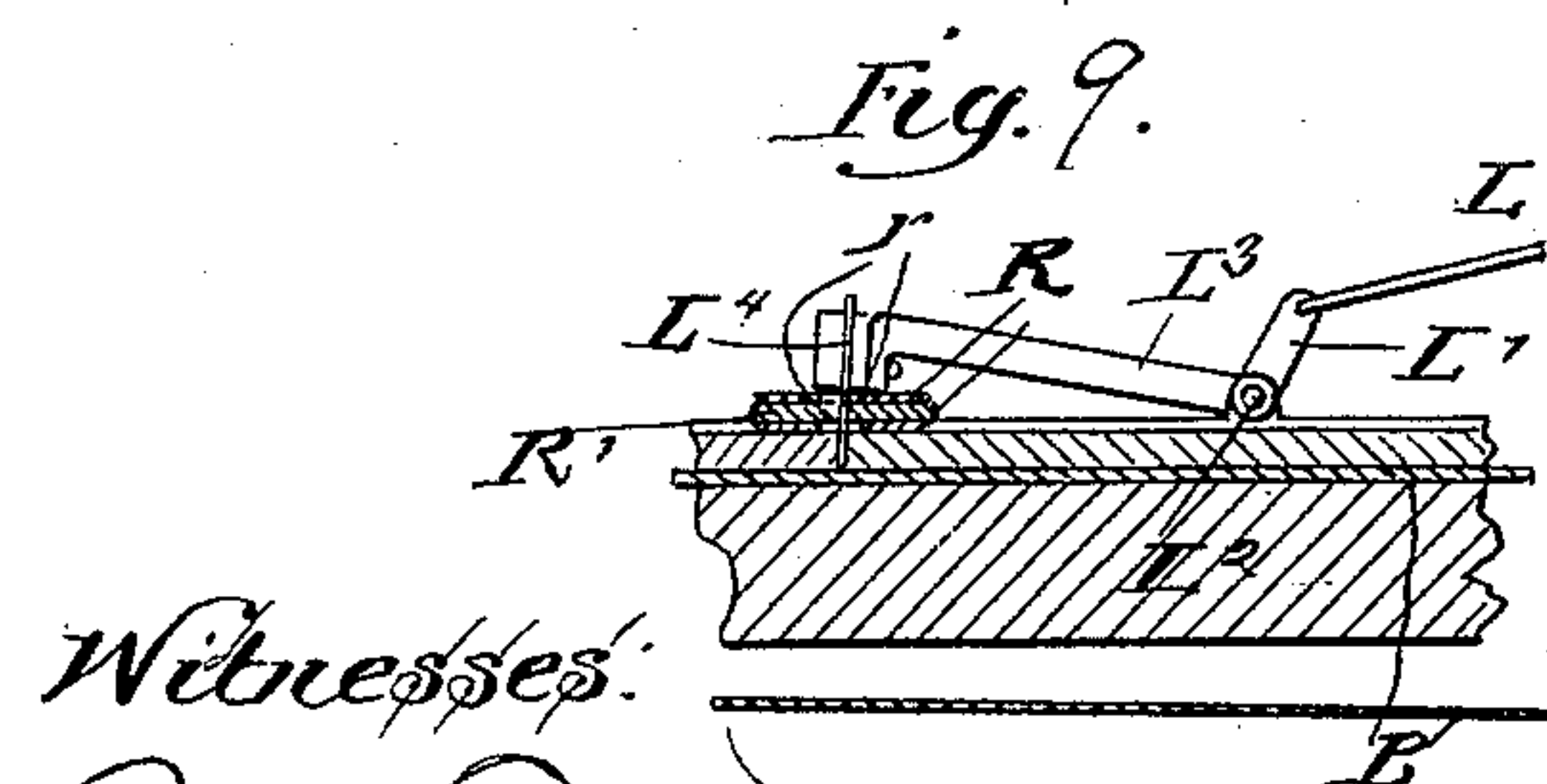
Charles P. Chapman

Inventor:
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By Burton and Burton
Attorneys

3 Sheets—Sheet 2.


No. 444,232.

Patented Jan. 6, 1891.



Witnesses:

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Celeste P. Chapman.

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(No Model.)

3 Sheets—Sheet 3.

A. G. BURTON.
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Fig. 8.

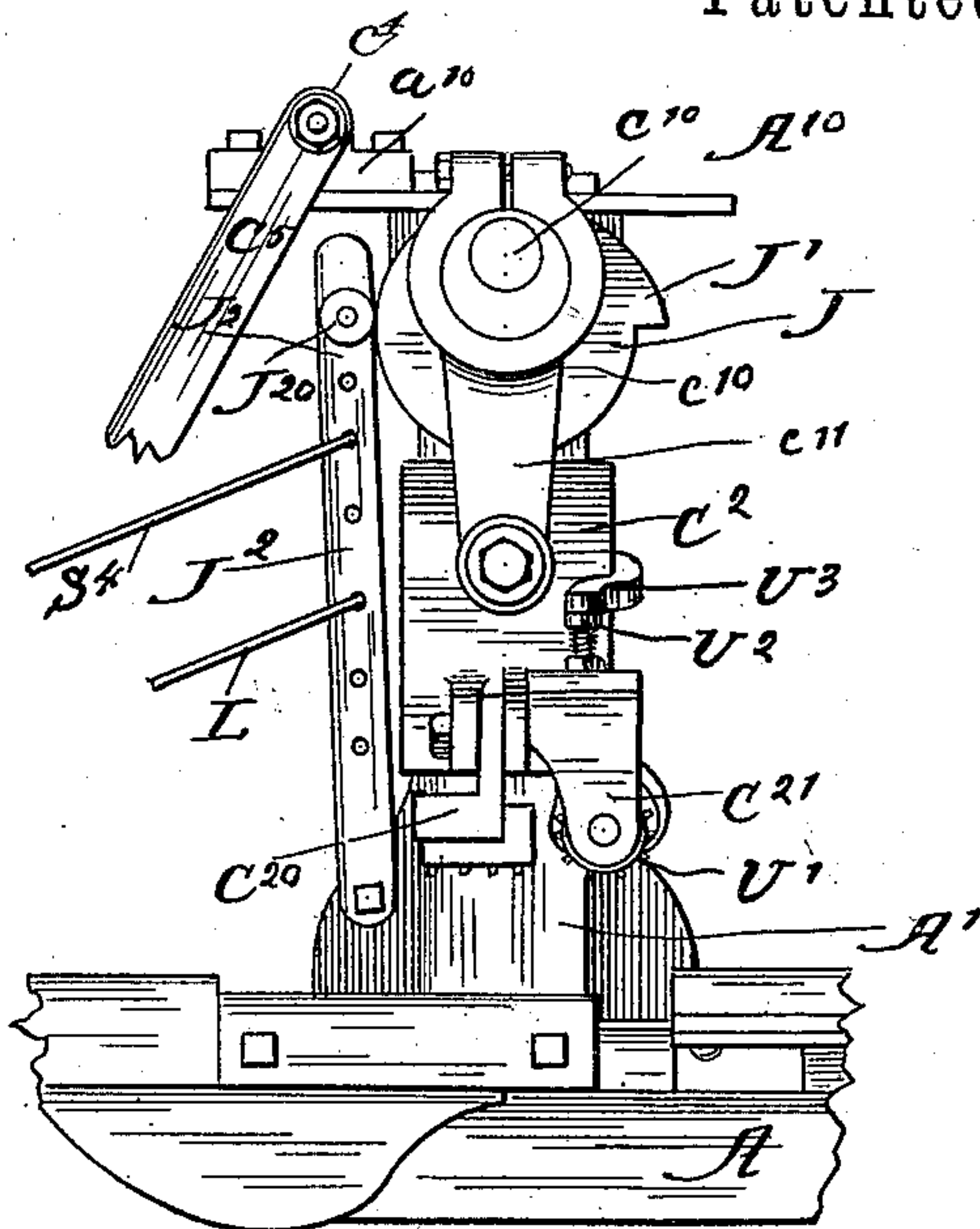


Fig. 5.

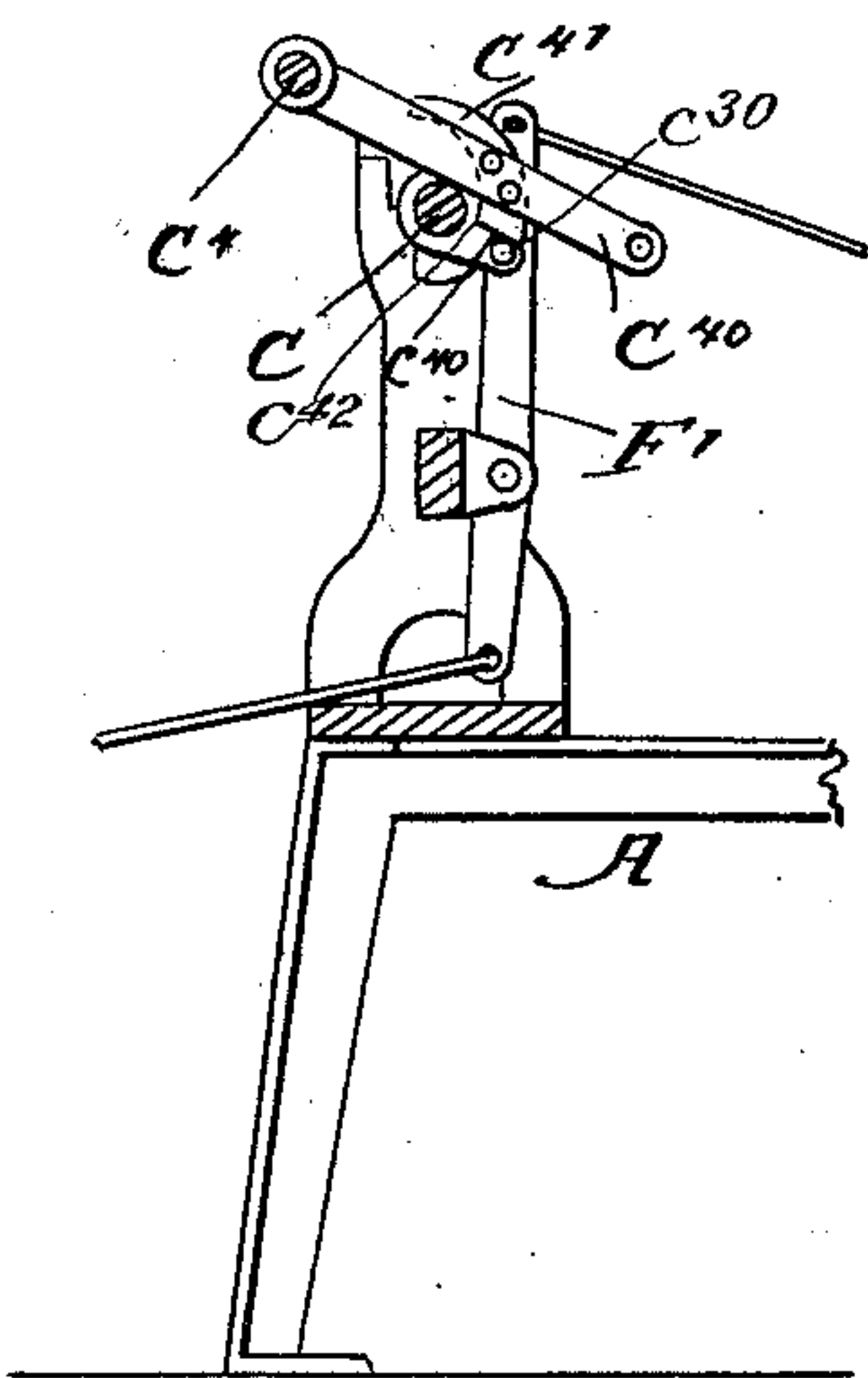


Fig. 7.

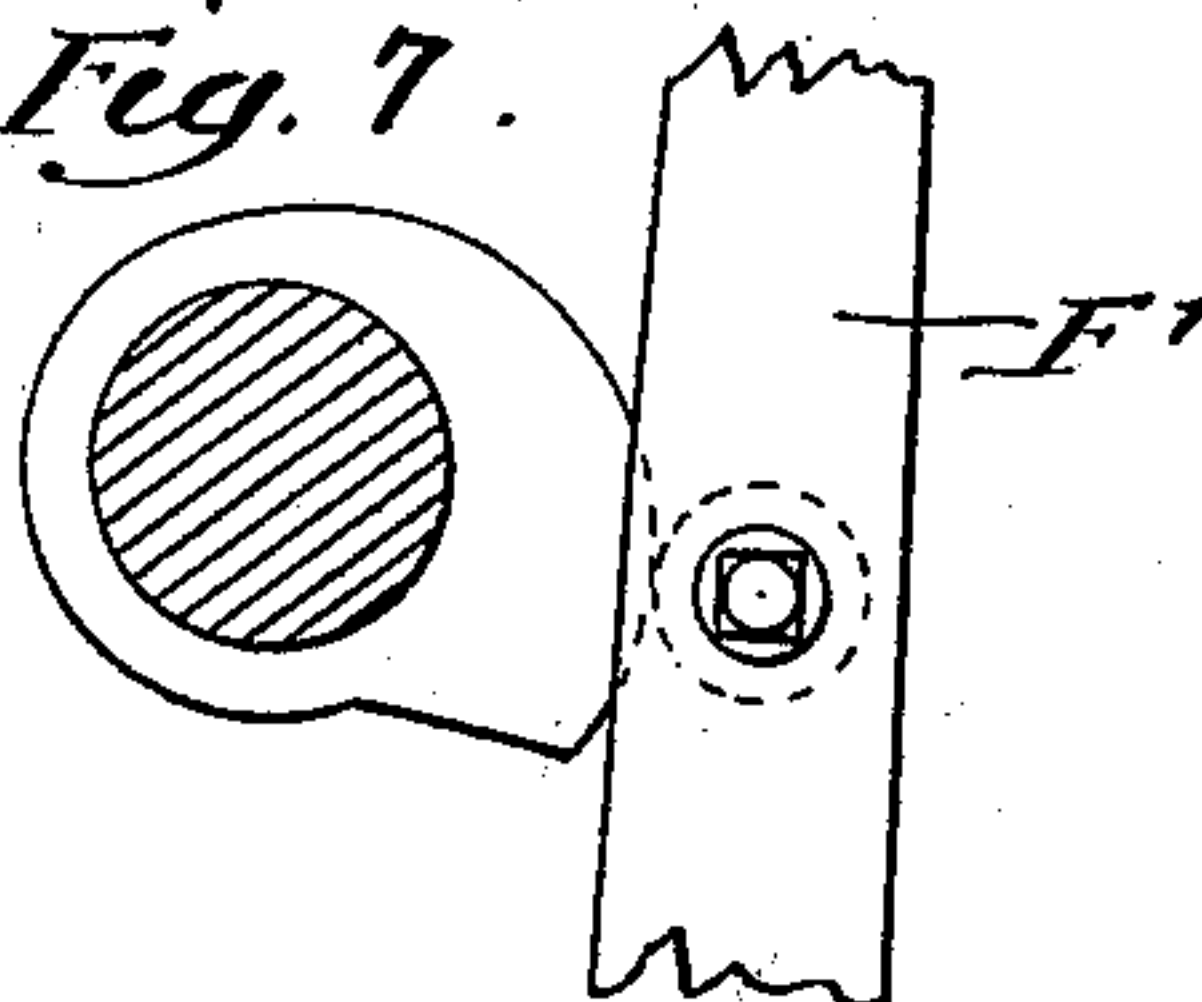
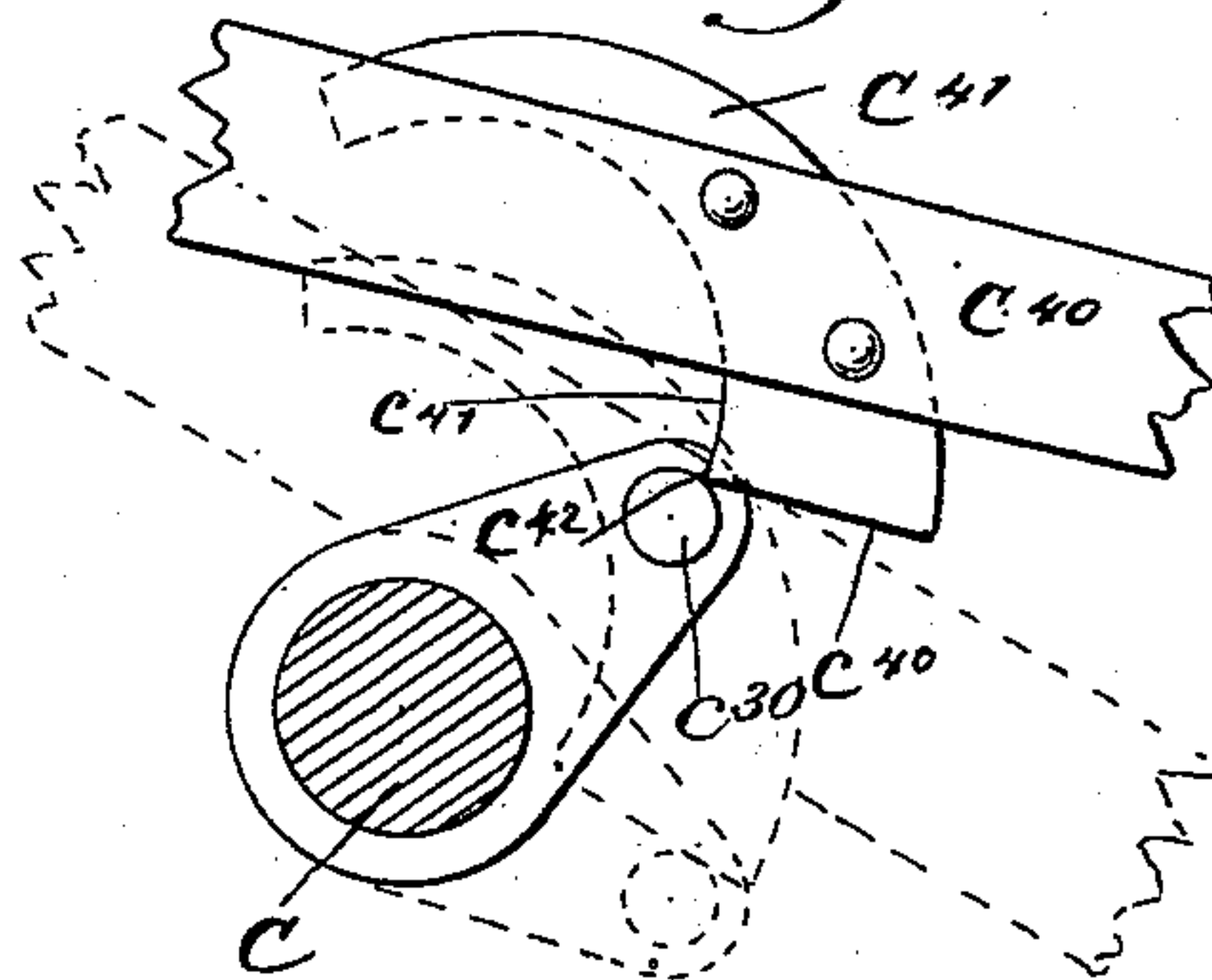


Fig. 6.



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UNITED STATES PATENT OFFICE.

AUGUSTUS G. BURTON, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHAS. E. DAVIS
AND JOHN W. NORRIS, OF SAME PLACE.

CLAY-SEAL-MAKING MACHINE

SPECIFICATION forming part of Letters Patent No. 444,232, dated January 6, 1891.

Application filed October 14, 1889. Serial No. 327,034. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS G. BURTON, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Seal-Making Machines, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

10 This invention consists of improvements upon a seal-making machine designed by Christian C. Hill, and described in his application, numbered 328,446, filed in the Patent Office October 28, 1889.

15 The improvements relate to means for numbering the seals consecutively and for inking the imprinting mechanism and for delivering the seals when completely formed and imprinted upon a suitable tablet or tray for transportation to the drying-oven.

20 In the drawings, Figure 1 is a front elevation of the seal-making machine, the details which do not pertain to my improvement being omitted, except in so far as it is necessary to show them to make clear the relation of my improvement to the remainder of the machine. Fig. 2 is an enlarged detail section of a portion of the tray and the delivering mechanism. Fig. 3 is an enlarged detail rear elevation of the same parts, showing also a portion of the bearing of the actuating-shaft and cam thereon and lever and connecting-rod whereby the necessary motion is imparted to the delivering mechanism. Fig. 4 is a detail plan of the imprinting and part of the adjacent mechanism. Fig. 5 is a section at 5 5 on Fig. 4. Fig. 6 is a detail sectional elevation of the crank and cam mechanism which operates the inking-roll. Fig. 7 is a detail sectional elevation of the feed-operating eccentric and lever, the position being that which corresponds to the full-line position of the ink-roll-operating mechanism in Fig. 6. Fig. 8 is a detail front elevation of the stamp-head operating crank and link, and a cam on the same shaft which operates the cutting and delivering mechanism, the position corresponding to that of the full lines in Fig. 7. Fig. 9 is a detail section at the line 9 9 on Fig. 4. Fig. 10 is a bottom plan of the inking-plate-rotating devices.

A is the frame of the machine; B, the conveyer-belt which receives the clay tape from which the seals are formed and transports it under the imprinting and dividing mechanism.

C' is the actuating-shaft of the imprinting mechanism journaled in the bracket A', which is supported on the main frame A and affords the vertical guide-bearings for the vertically-reciprocating head C², to which are secured the seal-imprinting stamp C²⁰ and the numbering mechanism C²¹. This head is actuated in the familiar manner of power by a crank c¹⁰ on the shaft C' and a link c¹¹, connecting said crank to the head C².

I will now describe the mechanism for inking the stamping devices. Upon the shaft C' there is made fast the collar C³, Fig. 4, having a laterally-projecting stud C³⁰, and upon the upper end of the bracket A', above the bearing of the shaft C', there is secured the supplemental bracket A¹⁰, having journal-boxes a¹⁰ a¹⁰ for the rock-shaft C⁴. To the rear end of this rock-shaft there is secured the lever-arm C⁴⁰, which overhangs the shaft C', and beyond the latter has secured to it the cam C⁴¹, Figs. 4 and 6. This comprises, as a cam-track exposed to the action of the stud C³⁰, the straight lower edge c⁴⁰ and the downwardly-concave curvilinear edge c⁴¹, which makes nearly a right angle with the straight edge c⁴⁰. As the shaft C' revolves, the stud C³⁰, coming up under the cam C⁴¹, encounters the straight edge c⁴⁰, and as the stud continues to revolve on upward it lifts the cam C⁴¹ and the lever-arm C⁴⁰, rocking the shaft C⁴. The stud encounters the straight edge c⁴⁰ near the farther corner, and as it rises travels across that edge to the corner formed by that edge and the concave edge c⁴¹, continuing to lift the cam during so much of its revolution. The stud reaches the corner c⁴² after it has passed the horizontal plane of the shaft C', and at this position the lifting action ceases, (see Fig. 6,) because the stud running off the edge c⁴⁰ and coming into contact with the concave edge c⁴¹, revolving upward and coming back toward the vertical plane of the shaft, withdraws from under the cam which settles down upon it and descends on account of the shape of the edge c⁴¹, be-

ing in that position eccentric to the shaft, notwithstanding that the stud is still rising in its rotary movement. By the time the stud is vertically over its shaft C' the lever-arm C^{40} has dropped down and is stopped upon the shaft itself C' , the stud continues revolving out from under the cam C^{41} , and continues its revolution until it again encounters the under edge c^{40} of the cam. To the forward end of the rock-shaft C^4 there is secured the lever-arm C^5 , which actuates the inking mechanism, which will now be described.

To the frame A at the forward edge there are secured two brackets II , which project upward and afford bearing for the slide-bar II' , which reciprocates in them parallel to the course of the carrying-belt. Upon the slide-bar II' are secured two adjustable stops II^2 , for a purpose which will hereinafter be explained. To the frame there is also secured, most conveniently at the rear, a bracket I , which extends up and overhangs the carrying-belt B , and has mounted upon it the revolving ink-spreading plate I' . This spreading-plate has projecting from its lower side the studs i' , constituting teeth by which it is actuated by means of a pawl II^4 , pivoted to the end of the slide-bar II' . The pawl engages the tooth i' on the pushing stroke and rotates the plate I' a short distance and slips over the tooth on its return-stroke. The arm C^{42} of the shaft C^4 normally extends downward from said shaft, and near the lower end it is connected to the link C^5 , which extends to the left and downward from said connection and has the cross-bar C^{50} , to which there is pivoted the inking-roll arm or frame C^6 . As illustrated, this device is a frame comprised of two side bars C^{60} , between which the cross-bar C^{50} extends, said side bars extending from the said cross-bar back to the right, and at their extreme end in that direction having journaled in them the inking-roller C^7 , which at its extreme position to the left rests upon the plate I' . To the frame A there is secured a bracket, which has arms A^{30} extending up and overhanging the conveyer-belt and one of them overhanging the plate I' , and in said overhanging arms the bars C^{60} obtain slide-bearings, the position of said arms and bearings therein being such as to permit the bars to slide therein while the roll contacts the inking-plate. The cross-bar C^{50} extends far enough forward to protrude between the stops II^2 on the slide-bar II' and engage them as it is reciprocated. The action of this mechanism, it will be seen, is as follows: When the rock-shaft C^4 is rocked by the engagement with the cam C^{41} of the stud C^{30} , as above described, the lever-arm C^{42} will swing to the right, and by means of the link C^5 will reciprocate in that direction the inking-roller frame C^6 and the ink-roller C^7 , and assuming those parts to have been at their extreme position to the left when the arm C^{42} commenced to swing the inking-roller will be

pushed to the right off from the inking-plate I' , and the seal-imprinting and numbering devices being at this time at their highest position said roller will be passed on under them and will ink their downwardly-exposed faces. When the stud C^{30} passes off the straight edge c^{40} onto the curved edge c^{41} and the lever-arm C^{40} begins to descend and the lever-arm C^{42} to swing to the left, the inking-roller will be withdrawn, passing again over the downwardly-exposed printing-faces onto the inking-plate I' . In the first motion to the right the cross-bar C^{50} will encounter one of the studs II^2 , and thereby as it moves will reciprocate the bar II' and cause the pawl II^4 to be pushed against the tooth i' of the plate I' and rotate the plate, and as the reverse motion is nearing its completion just as the inking-roll reaches the edge of the plate said cross-bar will encounter the other stop II^2 and retract the bar II' , the pawl II^4 slipping over the tooth i' , which stands behind it, and being by the controlling-spring caused to engage behind said tooth, ready for the next actuating movement.

I will now describe the mechanism for subdividing the tape into individual seals and for delivering such seals off from the conveyer-belt and piling them on a receiving-tray. To the shaft C' , in front of its bearing in the bracket A' , there is secured the cam J , which is circular throughout the greater portion of its periphery, having, however, one eccentric prominence J' . To the bracket A' , at the lower part, there is pivoted the lever J^2 , extending nearly upright from its pivot and having toward the upper end an abutment J^{20} , preferably being an anti-friction stud and roll projecting horizontally across the plane of the cam J , said abutment J^{20} contacting the periphery of said cam and being held in contact with said periphery by the spring J^3 , connected to the upright frame-post A^4 and to said lever J^2 . To the lever, between the abutment J^2 and the pivot, there is connected the rod or link L , the other end of which is connected to an arm L' of a rock-shaft L^2 , which is journaled in lugs $a' a'$, which project upward from the frame A , one on each side of the conveyer-belt. Said rock-shaft has another lever-arm L^3 extending to the left, nearly horizontal to the end of which there is secured the knife L^4 . To the frame A there is secured in position to overhang the conveyer-belt two plates R , between which there is secured a quantity of felt R' , said plates having the slots r , through which the knife L^4 can descend, the felt being also cut through in the path of the knife, but not having any material removed. The purpose of this felt is to hold a suitable lubricating substance to prevent the knife sticking to the tape when it cuts it, and also to wipe the knife clean as it passes through the felt. The position of the prominence J' on the cam J is such with respect to the position of the crank by which the stamp-head is reciprocated.

cated that it actuates the lever J^2 while the stamp is down and causes the knife L^4 to descend through the lubricating-felt and to cut the tape which lies on the conveyer-belt transversely, making this motion, as it will be observed, once for each revolution of the shaft C' , and so making a subdivision of the plate as often as an imprint is made upon it by the stamp-head. The tape being the width of two seals, the knife being the width of the tape, severs two seals therefrom at every stroke, and imprinting-dies are in like manner made double, printing two seals at each descending movement of the stamp-head.

From the bearings of the idle-roller q , around which the belt E passes at the delivery end, two lugs S extend obliquely downward and toward the left, and in them is journaled a rock-shaft S' , Figs. 2 and 3, having secured to it between its bearings the lip S^2 , of sheet metal, and having made fast also to it rearward of the rear bearing the pinion S^3 . To the lever J^2 there is connected the link S^4 above the point of connection of the link L , and to the other end of said link a short rack S^{40} is secured, which is adapted to mesh with the pinion S^3 . The link S^4 may be provided with a fixed guide-bearing S^{41} , by which the rack S^{40} is kept in mesh with the pinion S^3 .

It will be seen that as the lever J^2 is oscillated by the cam J and the spring J^3 the rack S^{40} will actuate the pinion S^3 and rock the shaft S' back and forth as the lever J^2 moves back and forth. The normal position of the lip S^2 —that is, the position occupied when the prominence J' of the cam J is not in engagement with the abutment J^{20} of the lever J^2 —is projecting upward, its upper edge being just below the plane of the upper surface of the upper ply of the conveyer-belt. To the frame A there is secured a thin strip of metal S^5 , which at its inner edge is in contact with the upper surface of the belt and overhangs the idle-roller q , its delivery edge overhanging the upper edge of the lip S^2 when the latter is normally upstanding. Its right-hand edge contacting the belt just where the belt begins to curve as it passes around the roller, the seals carried by the belt will be lodged on the lip and pushed on over, those behind pushing those in front as the belt moves, and as each seal becomes overbalanced as it passes off the delivery edge of the strip S^5 it falls down in front—that is, at the left—of the upwardly-projecting lip S^2 , lodging edgewise on the tray T , leaning to the right against said lip. Now when the lever J^2 is oscillated, and through the connections described rocks the shaft S' , the lip S^2 is tipped to the left and tips over in that direction the seal which has been leaning up against it. A block or any temporary obstruction or rest being provided on the tray T , against which the first seal thus tipped over may be caused to lean to the left, all subsequently-delivered seals will be caused to lean up against the preceding one, and as the tray is carried to the left by

the chain V a distance corresponding to the thickness of the seals they will be piled thereon, standing on edge in convenient shape to be subsequently handled. The tray or tablet is carried by endless chains driven around sprocket-wheels $V' V'$, actuated by pawl-and-ratchet mechanism connected with the lever F' . This mechanism is the same as that shown in said application of Christian C. Hill, filed October 28, 1889, Serial No. 328,446.

The numbering-machine C^{21} may be of any familiar construction and is not herein illustrated in detail. It is sufficient to say that the numbering mechanism consists of the number-wheels, of which one is shown, (indicated by the letter U'), and that this mechanism is actuated at each reciprocation of the head to change the number, the actuation being effected by the collision of the plunger-head U^2 of the numbering-machine with the abutment or stop U^3 as the head rises, said abutment being made fast to the bracket A' behind the head and extending out past it, so as to overhang the plunger U^2 . The numbering-machine is located to the right of the seal-imprinting stamp a distance such that its numeral-type faces stand one or more seal-lengths from the space left for the number in the seal-imprint stamp, so that as the tape advances it first receives the number and afterward the seal-imprint, a following seal being numbered while the first is receiving the seal-imprint.

The inking mechanism is necessarily constructed in view of the fact that the roll must travel horizontally over both the seal-imprint stamp and the numbering-stamp, this necessity compelling the provision for a long horizontal stroke, such as the described mechanism affords.

I claim—

1. In combination with the conveyer-belt, the receiving-tray located below the level of it at the delivery end, mechanism which actuates the tray longitudinally intermittently a distance corresponding to the thickness of the seals at each impulse, the lip S^2 , pivoted to the frame and normally upstanding from its pivot at the delivery end of the belt, and mechanism which rocks it from its position of rest outward slightly past the vertical position after each impulse of the tray-actuating mechanism, substantially as and for the purpose set forth.

2. In combination with the conveyer-belt, the receiving-tray located below the level of it at the delivery end, the lip S^2 , pivoted to the frame and normally upstanding from its pivot at the delivery end of the belt and adapted to be rocked on its pivot outward from the belt, substantially as and for the purpose set forth.

3. In combination with the conveyer-belt, the receiving-tray located below the level of its carrying-surface at the delivery end, the fixed lip S^5 , secured to the frame overhanging the delivery end of the conveyer-belt and hav-

ing its inner edge close thereto, and the lip S²,
pivoted to the frame and normally upstanding
from its pivot and overhung at its upper end
by the outer edge of the fixed lip S⁵ and adapted
5 to be rocked over its pivot outward from the
delivery end of the conveyer, substantially as
and for the purpose set forth.

In testimony whereof I have hereunto set

my hand, in the presence of two witnesses, at
Chicago, Illinois, this 5th day of September, 10
1889.

AUGUSTUS G. BURTON.

Witnesses:

CHAS. S. BURTON,
JEAN ELLIOTT.