

(No Model.)

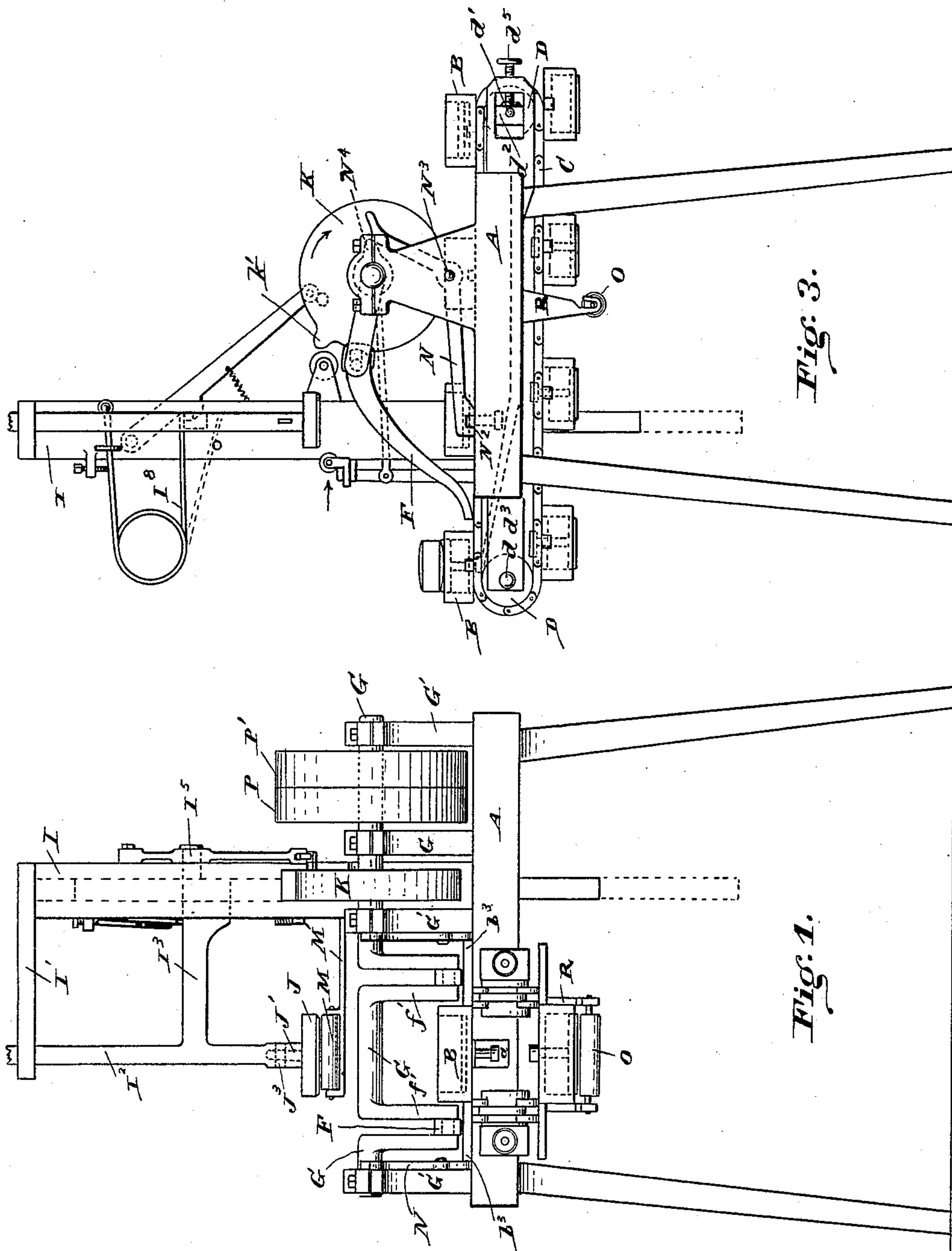
2 Sheets—Sheet 1.

C. MANNING.

MACHINE FOR STAMPING SOAP.

No. 390,875.

Patented Oct. 9, 1888.



Attest.
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Atty.

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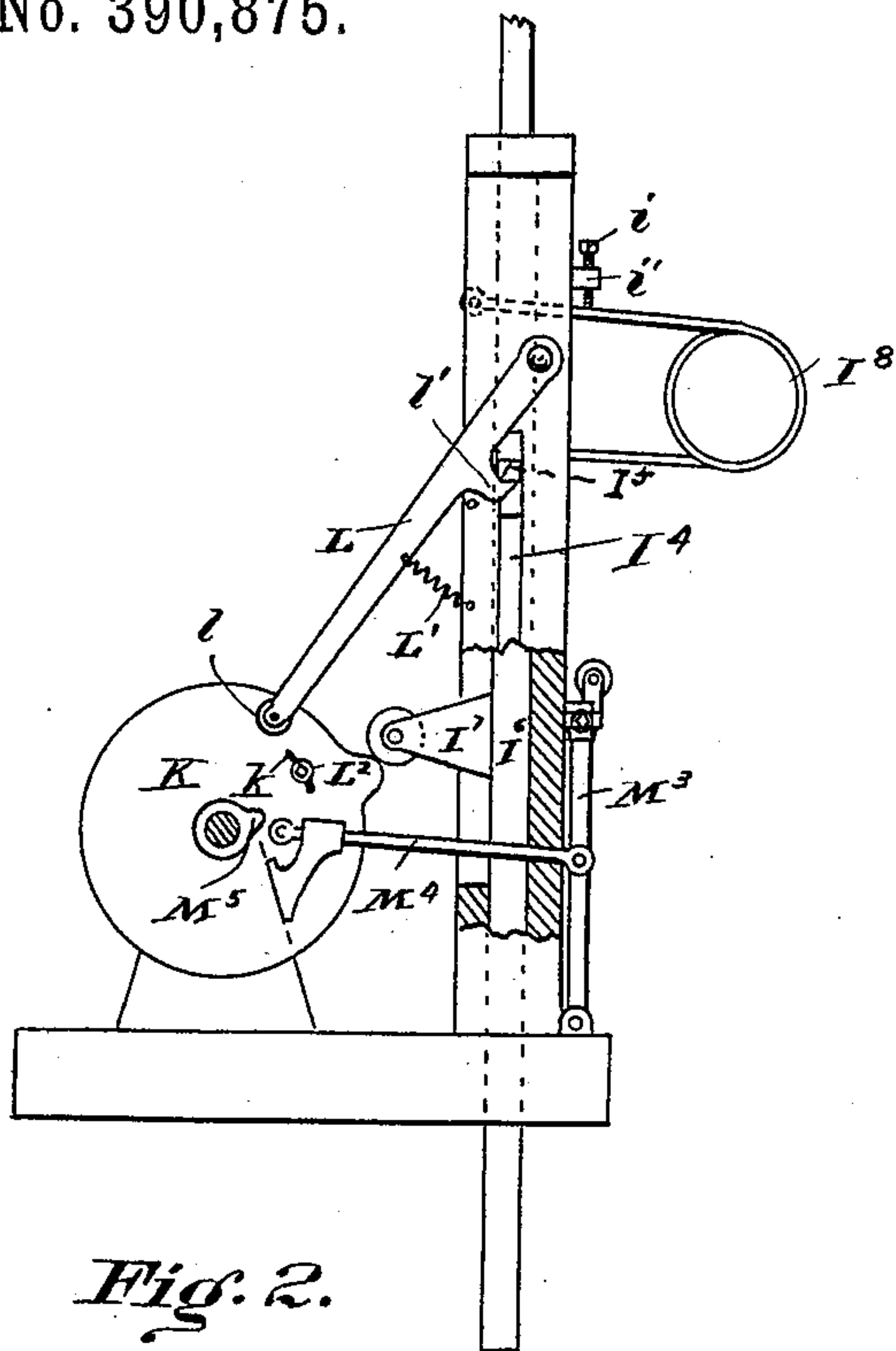


Fig. 2.

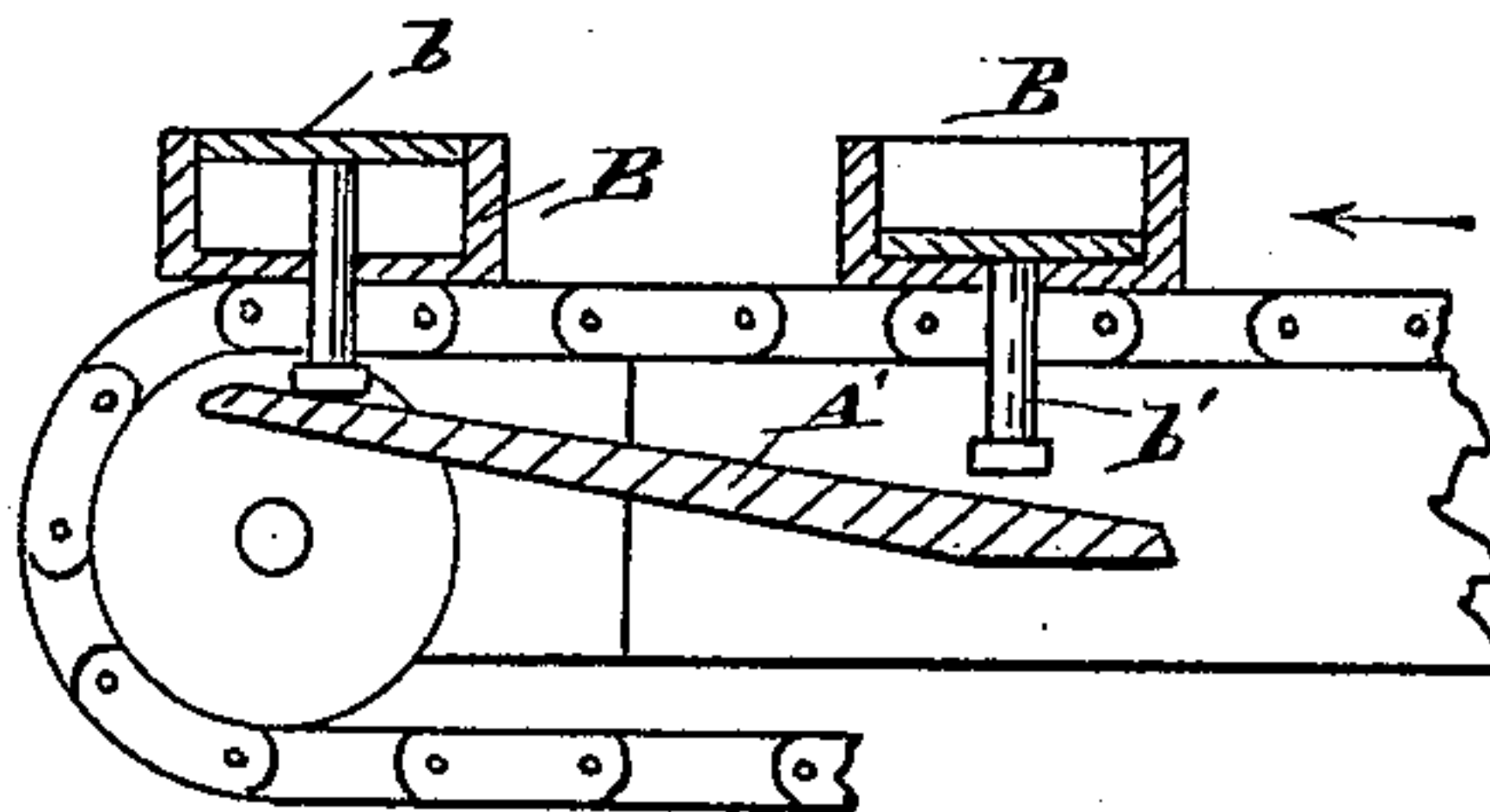


Fig. 4.

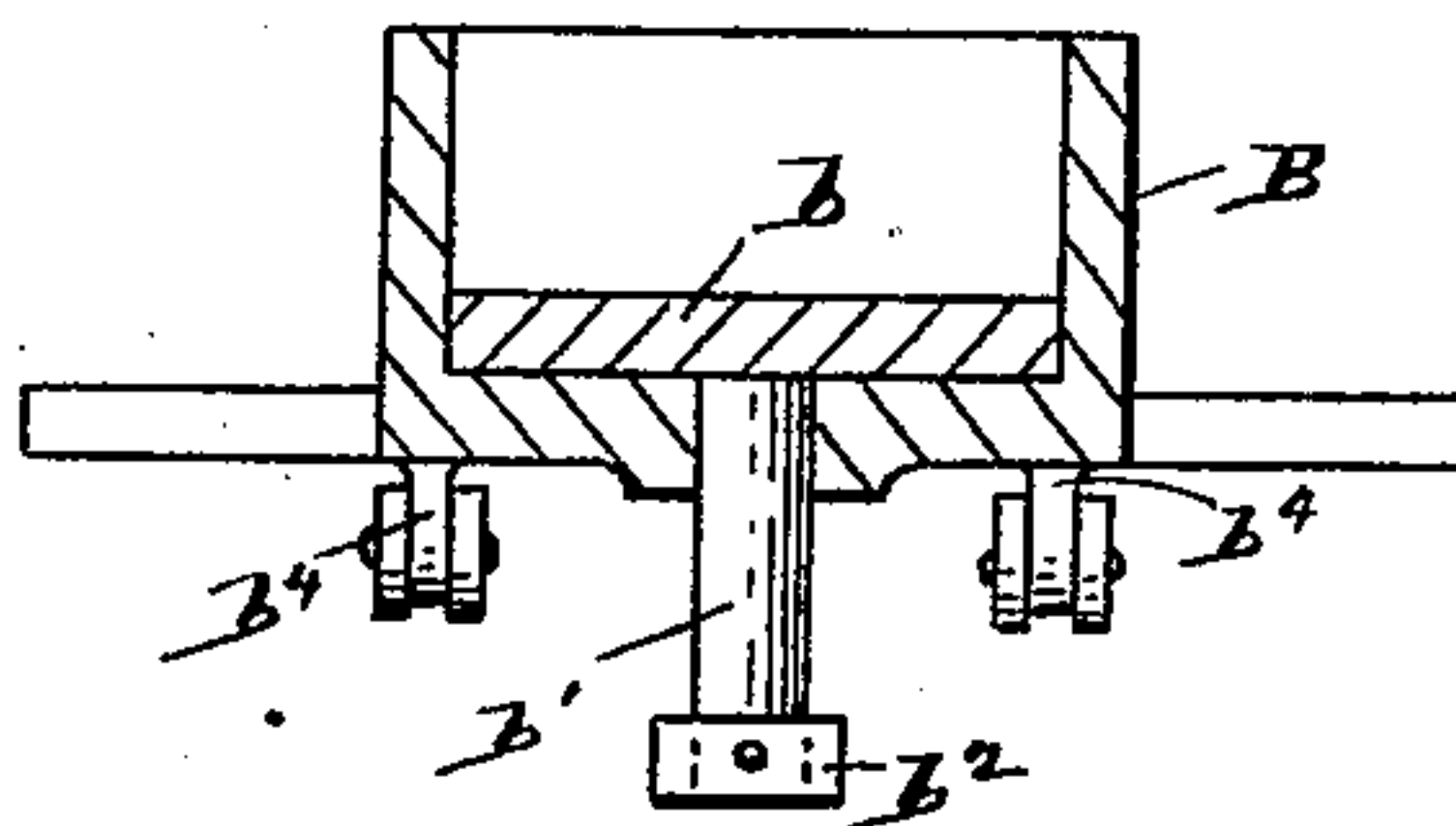


Fig. 6.

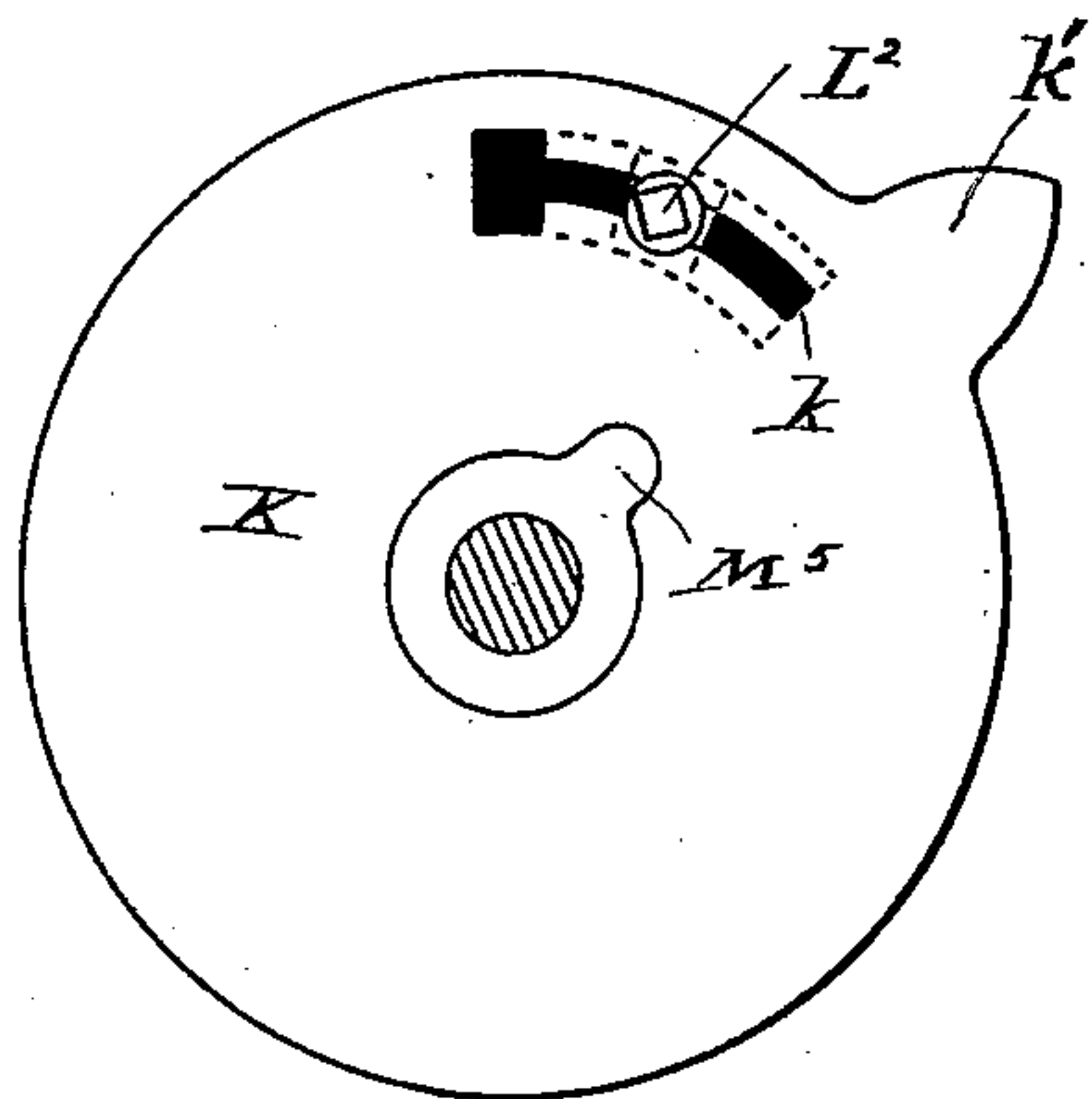


Fig. 5.

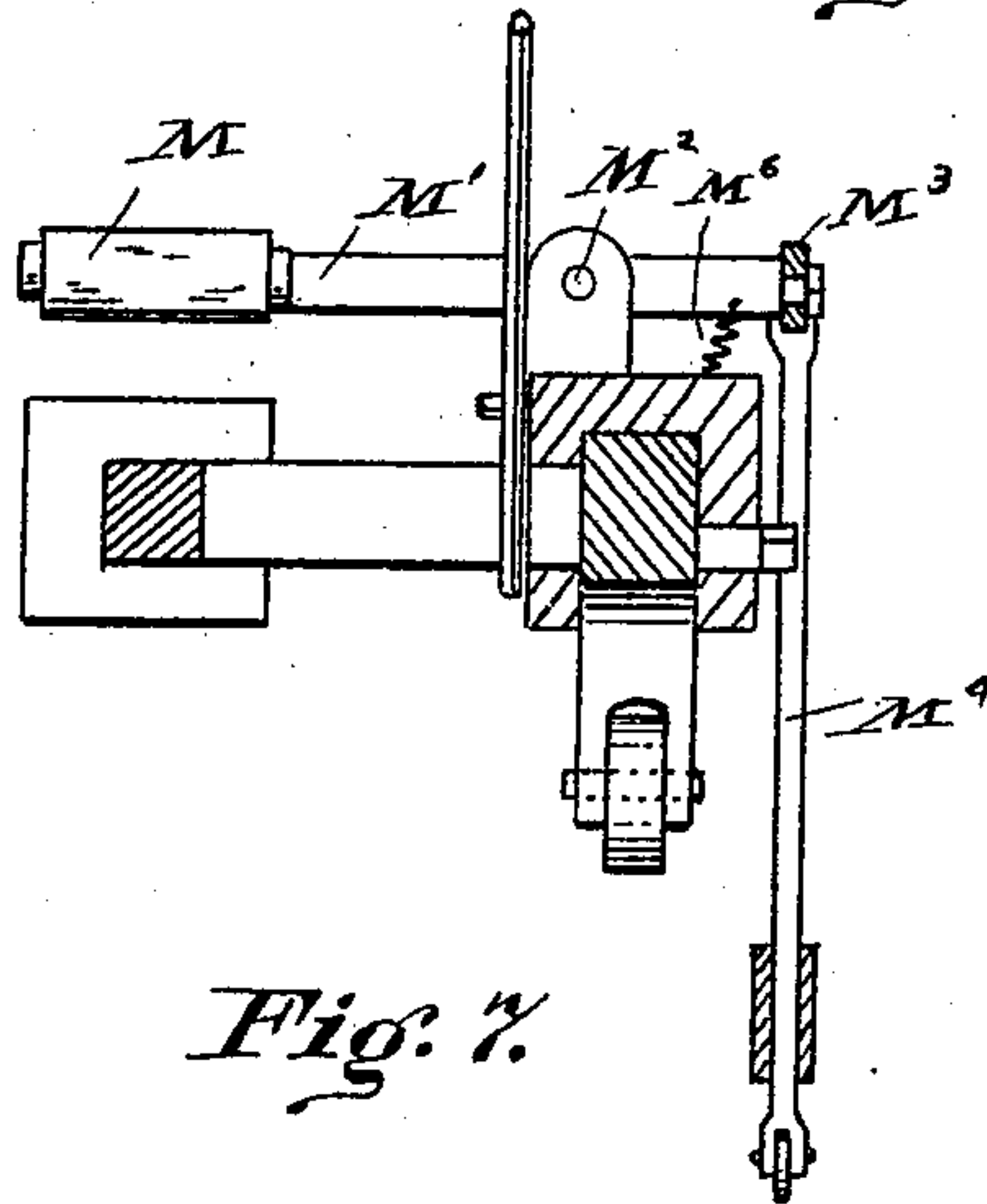


Fig. 7.

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UNITED STATES PATENT OFFICE.

CHESTERFIELD MANNING, OF SHARONVILLE, OHIO, ASSIGNOR OF ONE-THIRD
TO THEODORE COX, OF SAME PLACE.

MACHINE FOR STAMPING SOAP.

SPECIFICATION forming part of Letters Patent No. 390,875, dated October 9, 1888.

Application filed January 26, 1888. Serial No. 262,026. (No model.)

To all whom it may concern:

Be it known that I, CHESTERFIELD MANNING, a citizen of the United States, and a resident of Sharonville, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Machines for Stamping Soap, of which the following is a specification.

The several features of my invention and the advantages arising from their use, conjointly or otherwise, will be apparent from the following description.

In the accompanying drawings, forming part of this specification, Figure 1 represents a front elevation of my machine forming a part of my invention. Fig. 2 represents a side elevation of the same with pulleys removed and part of side support broken away. Fig. 3 represents an elevation on that side of the machine which is on the left-hand side in Fig. 1. Fig. 4 represents an elevation of part of the belt, and showing two of the dies and inclined plane in section. Fig. 5 is a side elevation of the operating-cam. Fig. 6 is a detailed view of the preferred form of soap-dies. Fig. 7 is a horizontal section taken above the upper swab and showing it and the mechanism for moving it.

A indicates the table or horizontal frame of the machine.

B indicates the lower soap-die. A series of these soap-dies B are employed and are attached to endless belts or chains C. These belts or chains C move around loose pulleys D. Shaft d carries the pulleys at one end of the belt. Shaft d' carries the pulleys at the other end of the belt. Each die is connected to the belt or chain in a suitable manner. In the present instance, as shown in Fig. 4, each die is provided on each side with a downwardly-projecting lug or tooth, b^4 , which lugs are forced into the links and hold the dies in place. Each die has a false bottom, b , which is capable of being raised from the bottom of the die to the top thereof in any suitable manner—preferably by means, as shown, of the raising piece or stem b' ; passing through the bottom of the die, and provided with a shoulder to prevent the stem and false bottom from slipping out of the lower die. The shafts d d' are respectively carried on suitable bearings or

supports, d^2 d^3 . One of these bearings is adjustable, so as to take up any slack in the chain or belt. A means of accomplishing this adjustment is shown, and is as follows: The bearing d^2 slides forward and rearward in the frame A, and a set-screw, d^5 , journaled in the bearing d^2 , engages a screw-thread in the end of the frame, and by rotating the screw d^5 adjustment of the bearing d^2 forward or backward is made and the chain or belt kept suitably taut. The preferred means of moving the dies forward consists of the drivers or driving-arms F, operated by cams or cranks f' on driving-shaft G. These arms are shown each attached to its respective crank f' on shaft G. The free ends of these arms reciprocate, and in their forward movement shove the die forward out from under the stamp. After pushing a die B forward the driving-arms are by rotation of shaft G retracted and rise over the projections b^3 of the die next behind, in readiness to press forward the last-named die after the soap therein has been stamped.

An upright support, as I, carries a guide, I' , through which the stem I^2 , which carries the upper die, slides vertically. The lower end of this stem carries the upper die, J, preferably connected to the stem by a central pin, J' , entering a recess in the stem and held therein by a cross-pin, J^3 , passed through a hole in the stem I^2 and pin J' .

The stem I^2 is raised by an arm, I^3 , rigidly attached to the said stem and kept in position by guide I^4 . This arm I^3 carries the tripping-arm I^5 . The arm I^3 is attached to the vertical slide I^6 , which latter is provided with the projection I^7 , against which the lock of cam K impinges and lifts it, and with it the die J.

The lever L is fulcrumed to the side of the frame I. It is provided at its lower end preferably with a bearing-wheel, l , and near its upper end with a catch or pawl, l' . A spring, L' , stretched between the frame I and the lever L, tends to draw the lever down. A pin or stud, L^2 , projects from the face of the cam K in such position as to strike the end of the lever L. The pin L^2 is set in the curved slot k , in which it may be clamped in any desired position to adjust the time of the drop of the upper die.

To assist the stamp in giving a quick powerful downward blow, I provide a spring, as I^8 . This spring is attached to the frame I and presses down on the cross-arm I^3 . The screw i , set in the bracket i' , projecting from the frame I, bears against the spring I^8 and regulates its tension.

For the purpose of cleaning the upper die, J, of any soap which may adhere to it after it has struck the soap and risen therefrom, I provide a cleansing-swab, M, which is applied to the face of the die and wipes it clean, in readiness for its next descent. The preferred means of operating the swab M consists of lever M' , which at one end carries the swab and is fulcrumed at M^2 to a fixed support, and at the other end is pivoted to lever M^3 , reciprocated longitudinally by rod M^4 , which in turn is operated by shaft G, preferably by a cam projection, M^5 , on said shaft. The preferred means for retracting the swab M is a spring, as M^6 , strained between the support I and the rear portion of arm M' . After the swab has moved over the face of the upper die, J, and the toe of cam M^5 has passed the end of lever M^4 , the tension of the spring M^6 retracts the swab and levers M' M^3 and arm M^4 , in readiness for again swabbing the upper die after the latter has delivered its next blow and risen again.

In order to hold the dies absolutely stationary while the upper die is descending and giving its blow, stamping the soap in the lower die, and until the upper die has risen out of said lower die, I provide suitable mechanism, a preferred form of which is as follows: A lever, N, provided at one end with a notch or recess, N^2 , is fulcrumed at N^3 and operated at the other end by a cam, N^4 , on shaft G. The spring N^6 continually exercises a downward pressure on that end of this lever N which has the notch N^2 . There are two of these levers N, and the notch N^2 in each fits over one of the lateral arms b^3 , projecting from the die B, which is under the stamp.

In operation, when a lower die has been advanced directly under the upper die, the notch under the lever N descends and its notch embraces the adjoining projection b^3 of the lower die, here shown as the one next rearward of the die under the stamp, and holds the dies stationary until the upper die has descended and given its blow and risen. While one of these levers engages the projection on one side of the die the lower lever engages the projection b^3 on the other side of the die, and thus the dies are held not only stationary, but are kept at right angles with the line of the movements of the belt. As the solidity of the soap to be stamped varies, it is desirable that the amount of force with which the descending upper die is moved should be regulated so that the impact of the upper die should be exactly suited to the solidity of the soap to be stamped. The preferred means for regulating this force of impact is the screw i , already described. The groove a , cut in the table A, accommodates the stems b' from the dies B as the

dies travel across the table. In this groove, in advance of the place where the cake is stamped, an inclined plane, A' , is placed. A cleansing-roller, O, is placed beneath the table, supported in brackets R, projecting downward from the table A.

The mode of operation of the machine is as follows: A cake of soap ready to be stamped is placed in each of the dies B as it rises onto the table A. Motion being imparted to the shaft G, the arms F are actuated, and at each rotation of the shaft impinge against the lateral projections b^3 from the die under the stamp, and the arms N having been raised just before this, the belt is moved forward a distance equal to the space between two dies. By the same movement of the shaft G the stamp J has been raised, and the arms N have dropped into place and securely hold the new die in its place under the stamp. With a little further movement of the shaft G the lever L is drawn far enough out by the pin L^2 to let the catch l' clear the projection I^5 of the arm I^3 , when the stamp immediately drops, being assisted in its descent by the force of the spring I^8 . Just before the stamp drops the mechanism operating the swab M comes into action, and the swab is rapidly swept over the face of the die J, removing from it all adhering pieces of soap and leaving it perfectly clean. The blow produced by the stamp J is sharp, quick, and strong. It has nothing of the nature of pressing about it. Consequently the outlines stamped upon the soap are more clear and distinct.

As each die B is pushed forward by the arms F, the head b^2 of the stem b' sweeps over the inclined plane A, which raises the stem and the false bottom b and pushes the cake of soap out of the die, as shown at the left in Fig. 2. At the next movement of the belt this cake of soap drops off the table into a suitable place or receptacle. While moving along under the table the false bottoms b remain out, as shown, and in this position sweep over the roller O, which cleanses them.

My machine may be operated by hand or other power in any suitable manner. In the drawings the usual tight belt-pulley, P, and loose belt-pulley, P', are shown mounted on the shaft G.

While the various features of my invention are preferably employed together, one or more of them may be employed without the remainder, and in so far as applicable one or more of said features may be used in machines for stamping soap other than the one herein particularly specified.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a stamping-machine, the combination of a supporting-table, an endless belt surrounding said table, dies attached to the said belt and provided with lateral projections, propelling-arms moving on the top of said table and adapted to strike against the lateral projections from the dies, mechanism for imparting a reciprocating movement to the propelling-

arms, stamp-die, and mechanism for operating the same, substantially as and for the purposes specified.

2. The combination of the stamp J, stationary upright I, carrying guide I', slide I⁶, sliding in upright I, arm I³, fixed to slide I⁶ and carrying the stem I², stamp J, vertical stem I², sliding in the guide I', and carrying the stamp J, substantially as and for the purposes specified.

3. The combination of the stationary upright I, carrying guide I', slide I⁶, sliding in upright I, arm I³, fixed to slide I⁶ and carrying the stem I', stamp J, vertical stem I², sliding in the guide I and carrying the stamp J and arm I', and cam K, having toe k', substantially as and for the purposes specified.

4. The combination of the stamp J, upright I, slide I⁶, sliding therein, arm I³, fixed to slide I⁶ and carrying the stamp J, arm I', and cam K, having toe k', impinging against arm I', and tripping-arm I⁵, connected to arm I³, lever L, pawl or catch l', and side pin or stud, L², on said cam K, and adapted to strike the end of the lever L, substantially as and for the purposes specified.

5. The combination of the stamp J, upright I, slide I⁶, sliding therein, arm I³, fixed to slide I⁶ and carrying the stamp J, tripping-arm I⁵, lever L, pawl or catch l', and cam K, and adjustable side pin or stud, L², for causing the drop of the stamp and regulating the time of said drop, substantially as and for the purposes specified.

6. The combination of the stamp J, upright I, slide I⁶, sliding therein, arm I³, fixed to slide I and stamp J, arm I', affixed to slide I, and tripping arm I⁵, affixed to said slide, lever L, pawl or catch l', and cam K, having the peripheral projection k', for operating arm I', and adjustable pin or stud L², for operating the lever L, substantially as and for the purposes specified.

7. The combination of the stamp J, stationary upright I, carrying guide I', slide I⁶, sliding in upright I, arm I³, fixed to slide I⁶, and spring I⁸, whose upper limb is connected to the stationary frame and whose lower limb presses down upon the cross-arm I³, substantially as and for the purposes specified.

8. The combination of the stamp J, stationary upright I, carrying guide I', slide I⁶, sliding in upright I, arm I³, fixed to slide I⁶, spring I⁸, whose upper limb is connected to

the stationary frame and whose lower limb presses down upon the cross-arm I³, and means for adjusting the degree of downward elastic pressure of the spring upon the stamp, substantially as and for the purposes specified.

9. The combination of the stamp J, stationary upright I, carrying guide I', slide I⁶, sliding in upright I, arm I³, fixed to slide I⁶, spring I⁸, whose upper limb is connected to the stationary frame and whose lower limb presses down upon the cross-arm I³, and stationary stud i' and screw i, pressing on the adjacent limb of the spring, substantially as and for the purposes specified.

10. The combination of the sliding upper die-carrier, catch I⁵, lever L, and cam K, cranks f', and shaft G, carrying said cam K and eccentrics f', substantially as and for the purposes specified.

11. The combination of the sliding upper die-carrier, catch I⁵, lever L, and cam K, cranks or eccentrics f', shaft G, carrying said crank K and eccentrics f', and retaining-catches, and mechanism for freeing the die from the catches, substantially as and for the purposes specified.

12. In a stamping-machine, the combination of a supporting-table, an endless belt surrounding said table, dies attached to the said belt and provided with lateral projections, propelling-arms moving on the top of said table and adapted to strike against the lateral projections from the dies, mechanism for imparting a reciprocating movement to the propelling-arms, stamp-die, and mechanism for operating the same, and lateral retaining-arms provided with notches for grasping the lateral projections from the dies when the latter are under the stamp-die; and mechanism for raising the lateral retaining-arms clear of the projections from the dies, substantially as and for the purposes specified.

13. The combination of a driving-shaft, cam K, mounted thereon and provided with toe k', frame I⁶ I³ I², supporting-frame I, projecting arm I', stamp-die J, cam M⁵, mounted on driving-shaft, rod M⁴, lever M³, lever M', and swab M, substantially as and for the purposes specified.

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Attest:

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