

No. 620,534.

Patented Feb. 28, 1899.

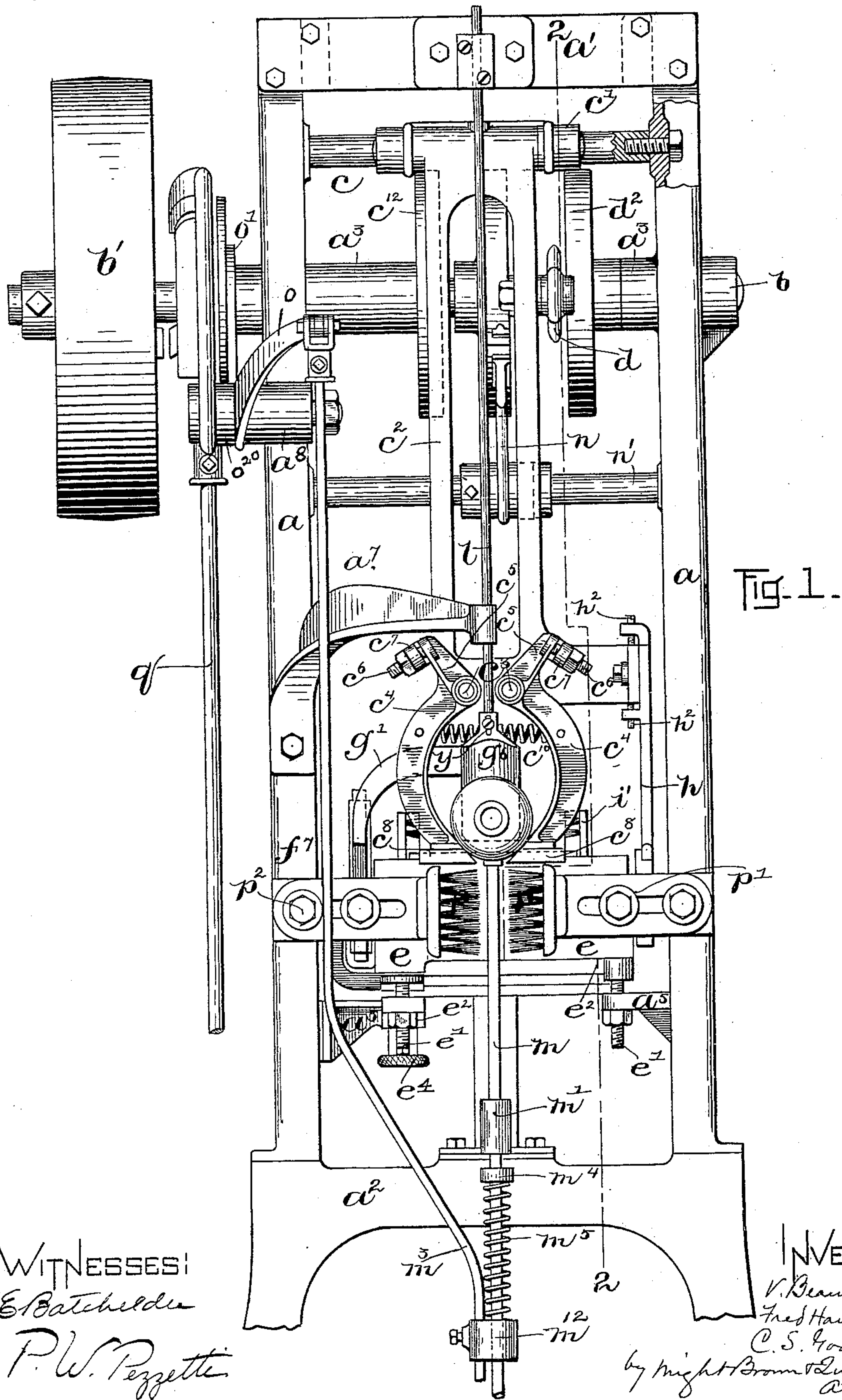
V. BEAUREGARD, F. HAUSMANN & C. S. GOODING.

BOTTLE LABELING MACHINE.

(Application filed Aug. 24, 1897.)

8 Sheets—Sheet 1.

(No Model.)



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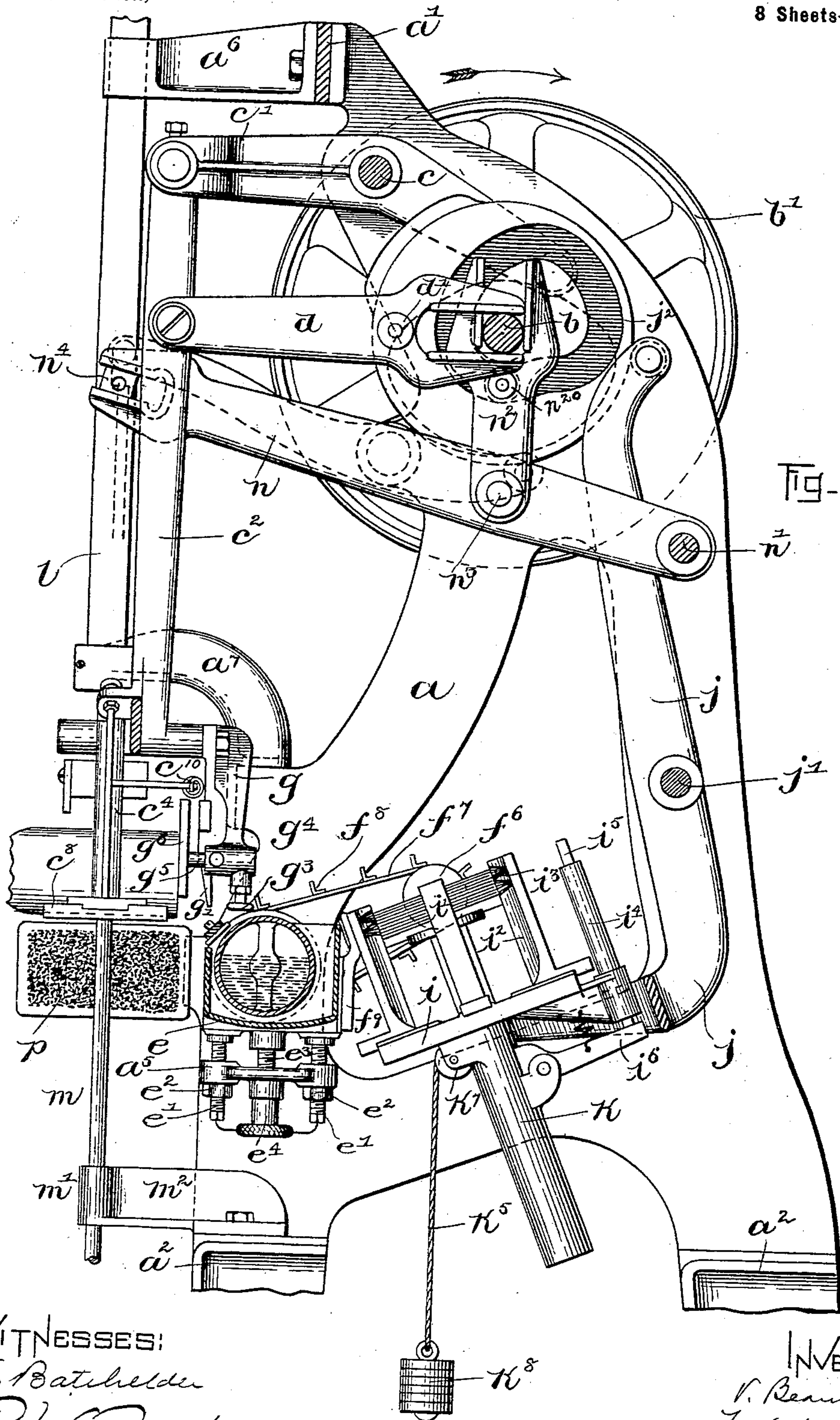


Fig. 2.

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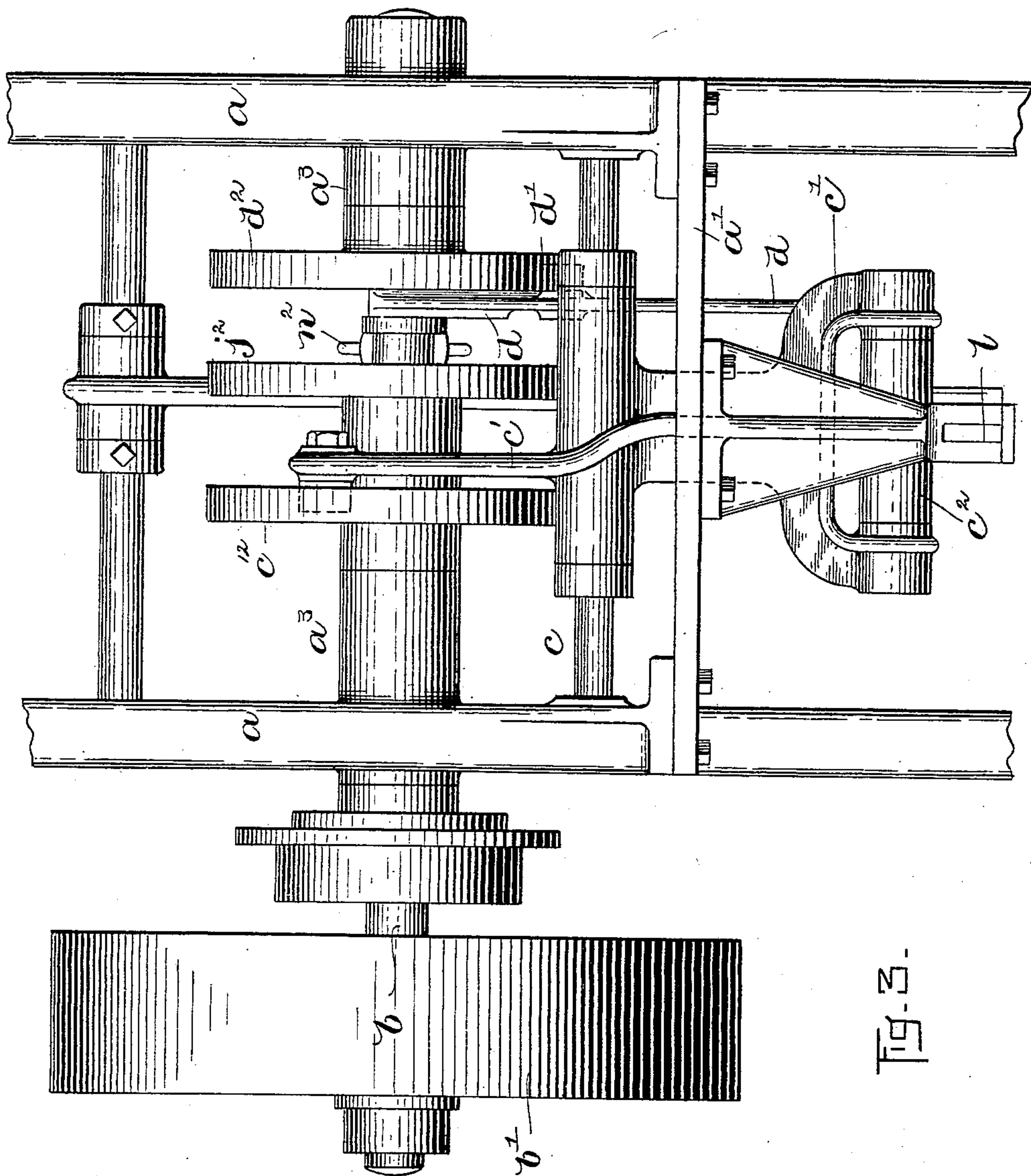


Fig. 3.

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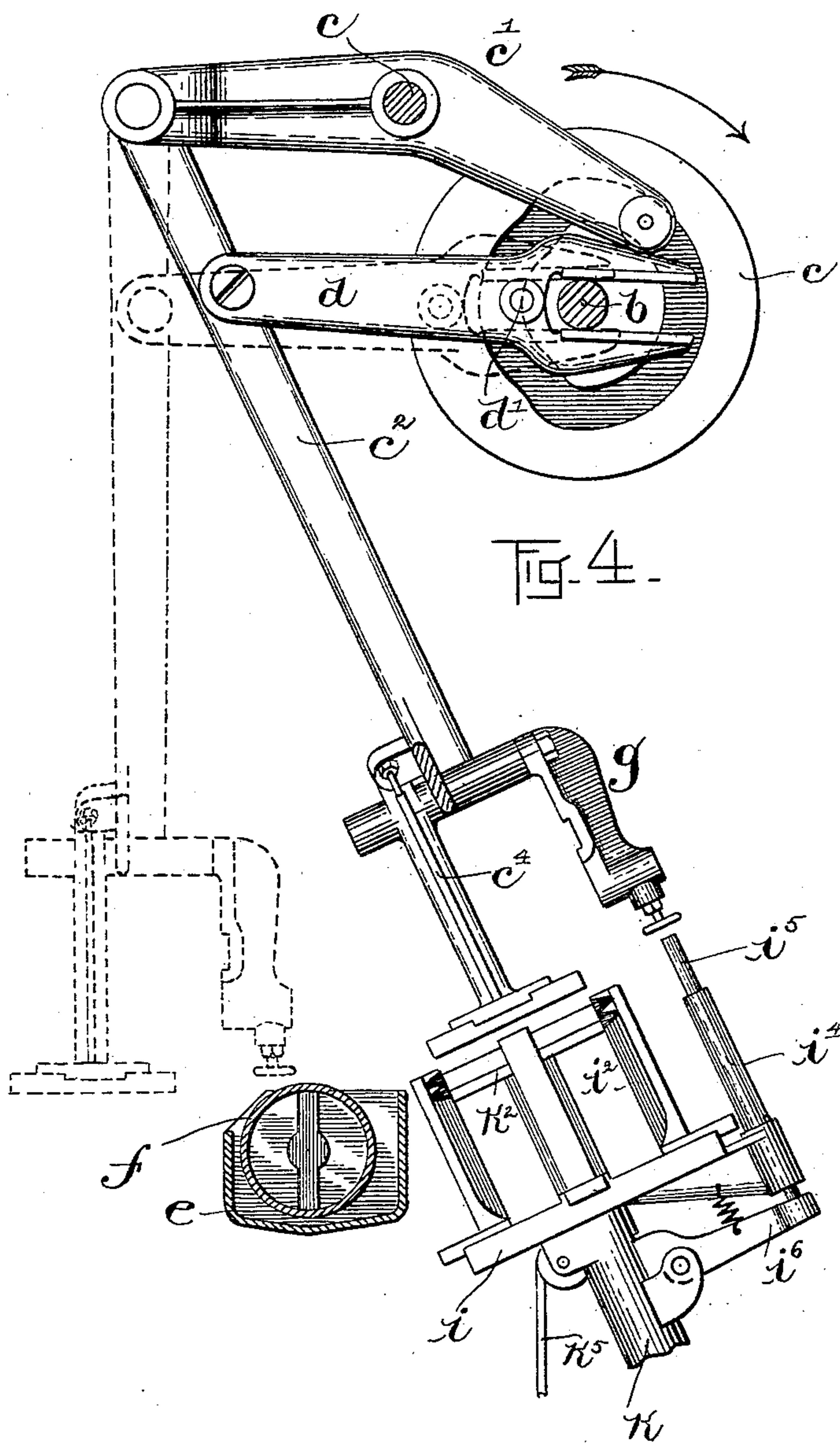
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8 Sheets—Sheet 4.



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Fig. 5.

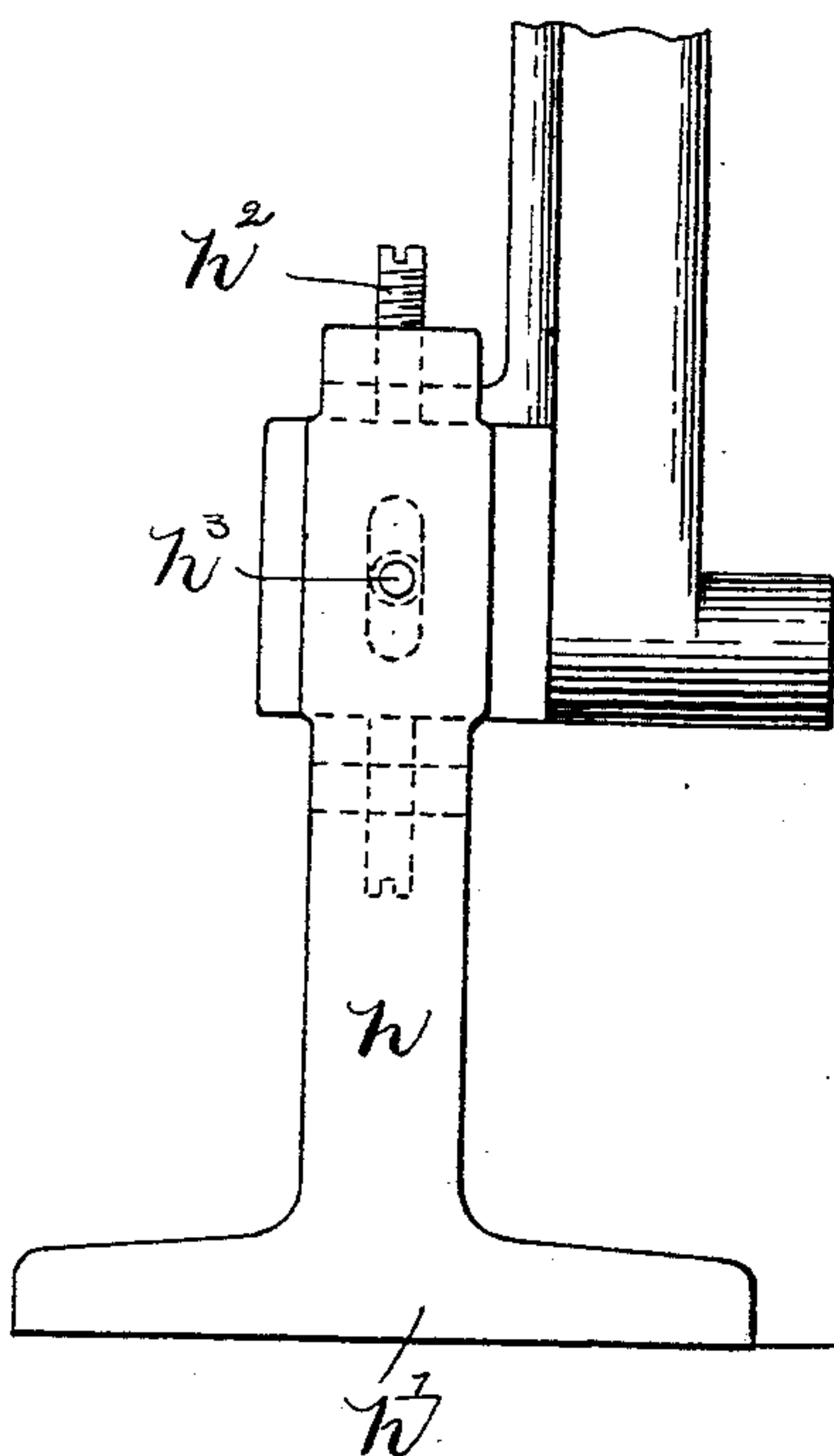
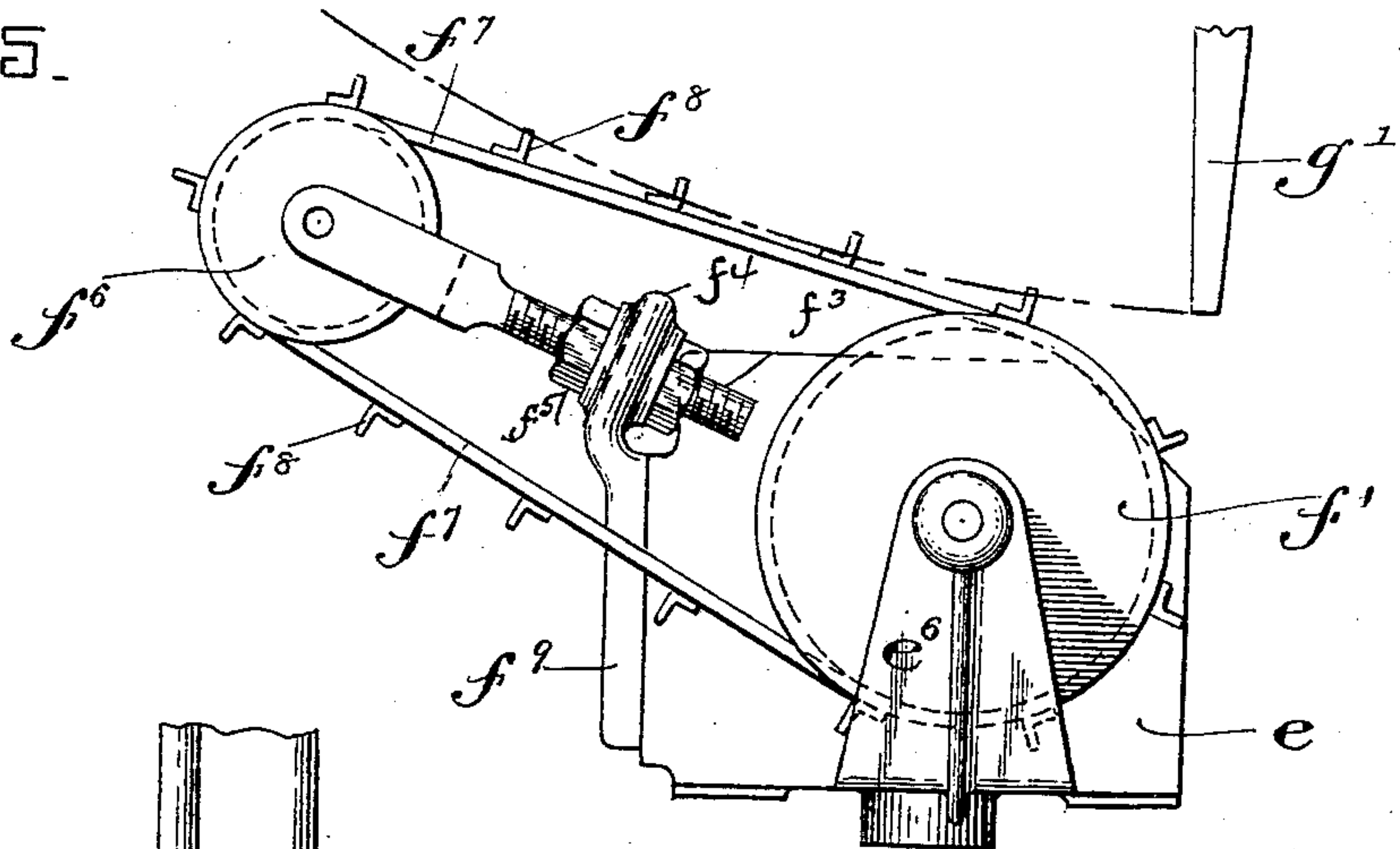
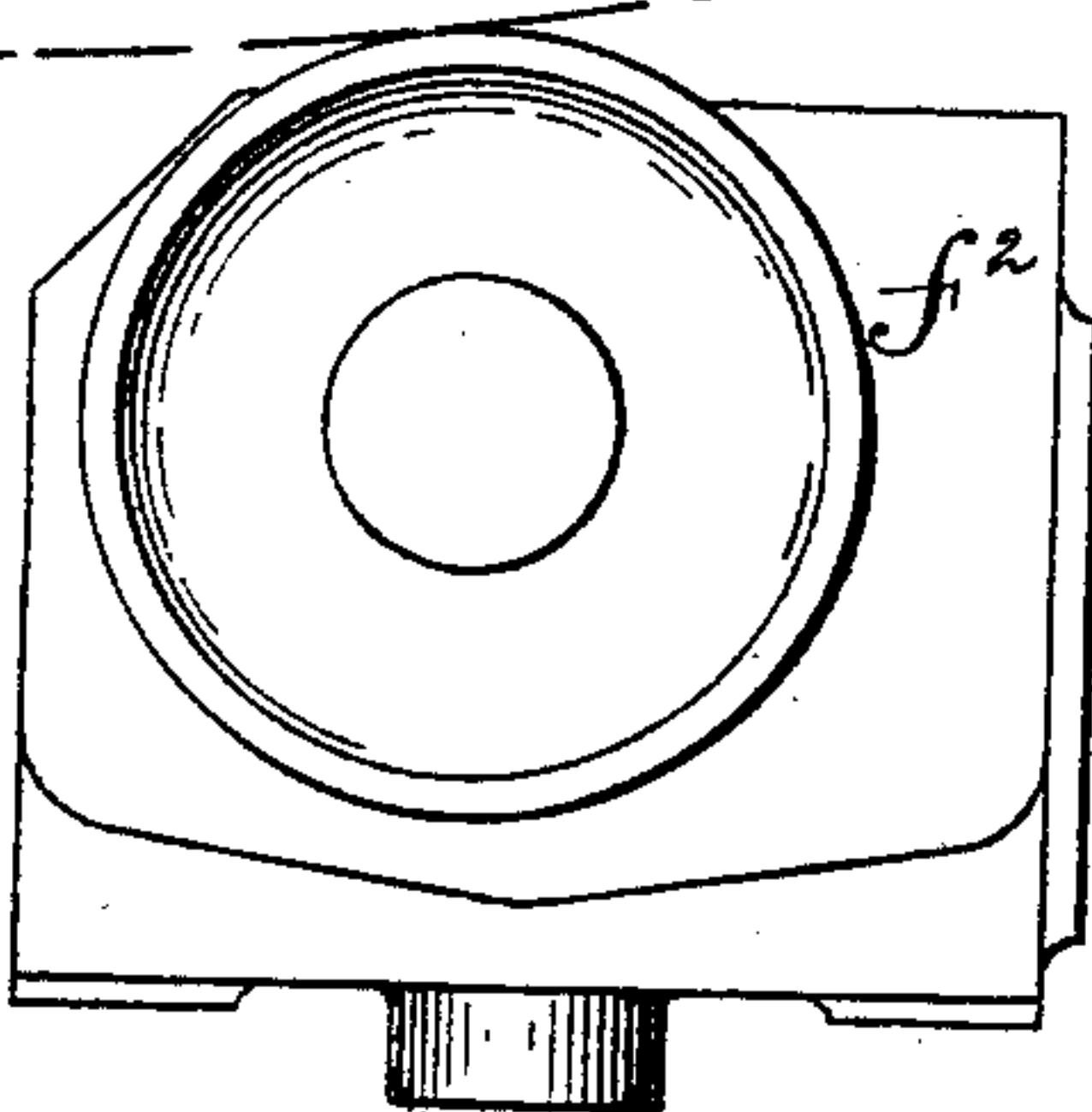


Fig. 6.



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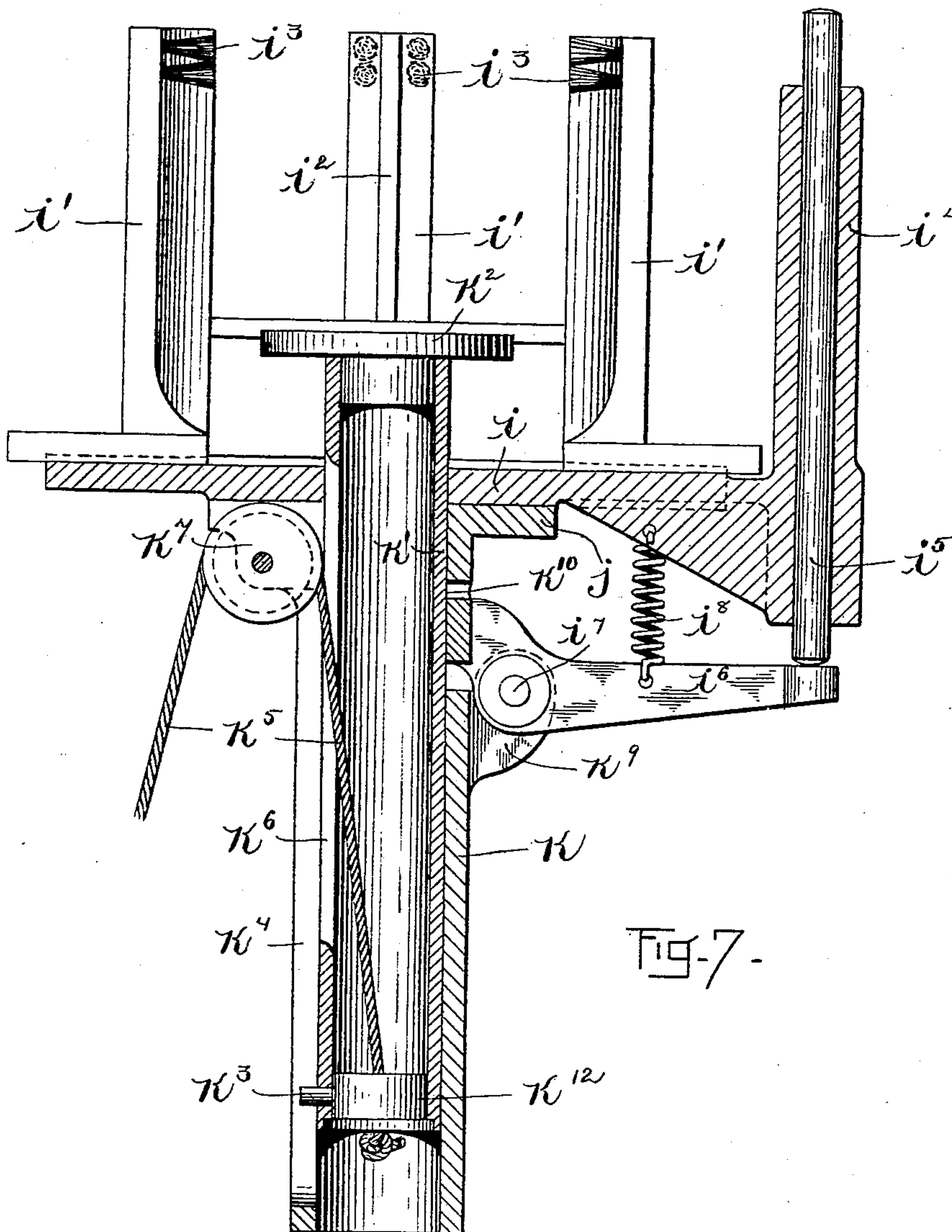
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8 Sheets—Sheet 6.



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BOTTLE LABELING MACHINE.

(No Model.)

(Application filed Aug. 24, 1897.)

8 Sheets—Sheet 7.

Fig. 6.

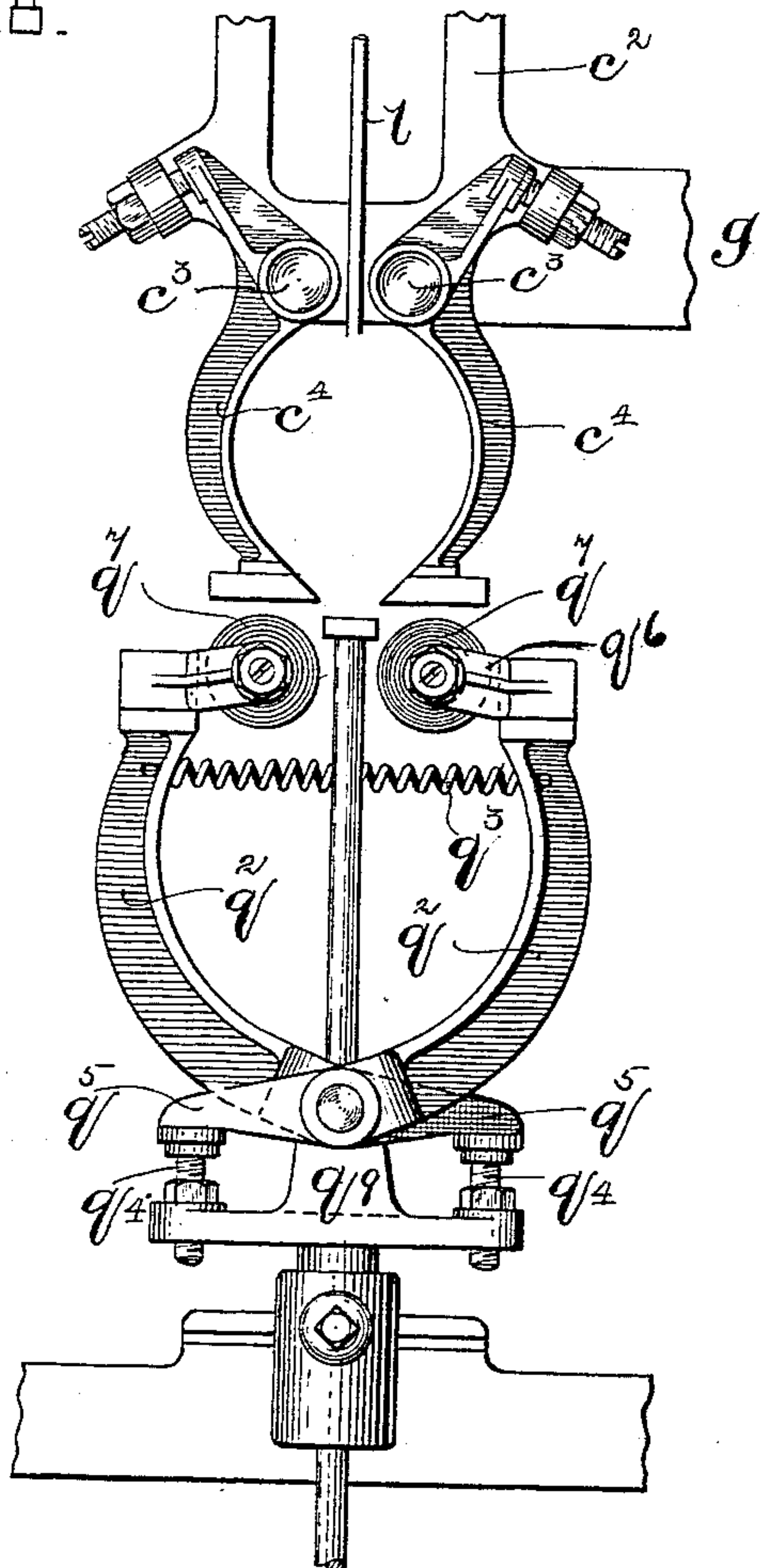


Fig. 7.

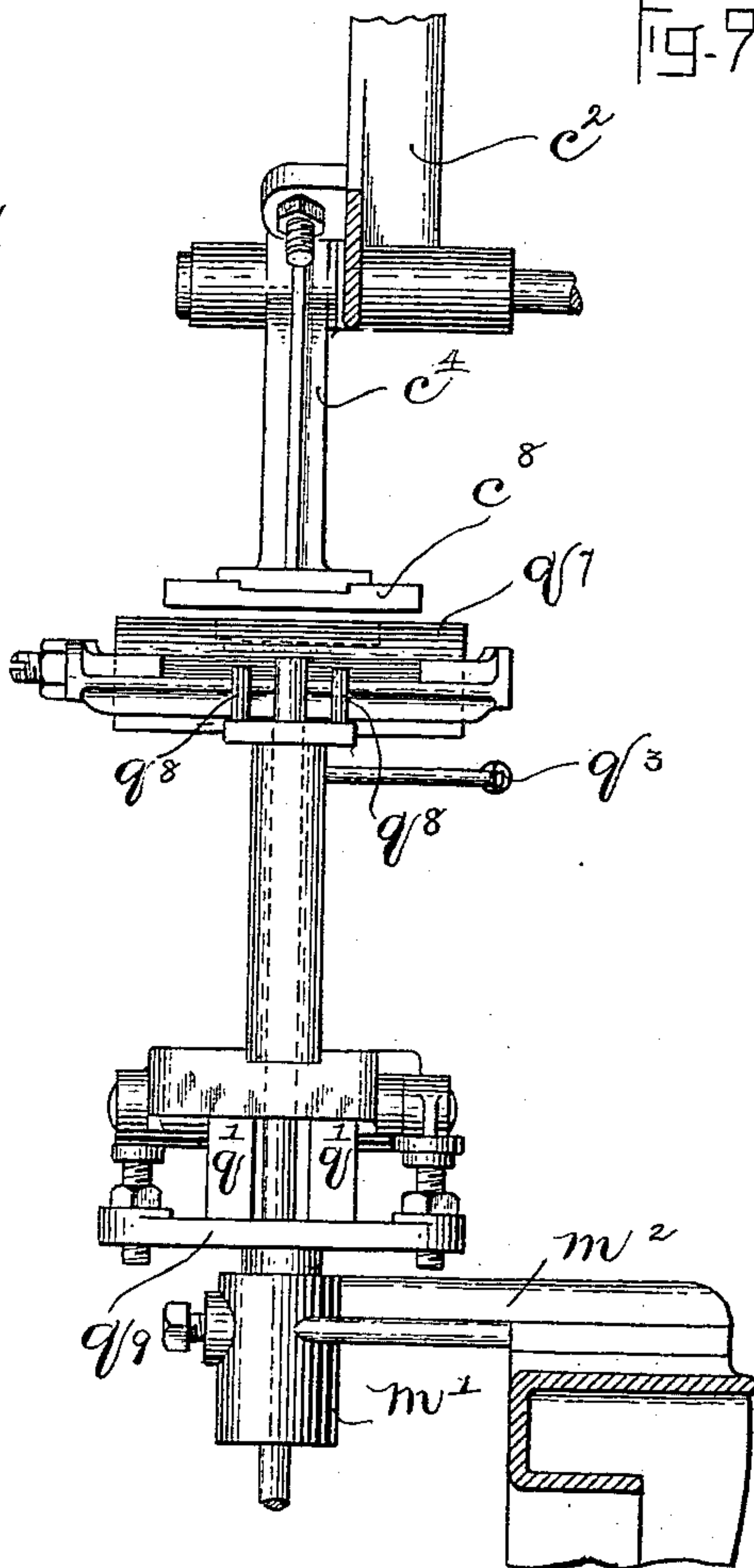
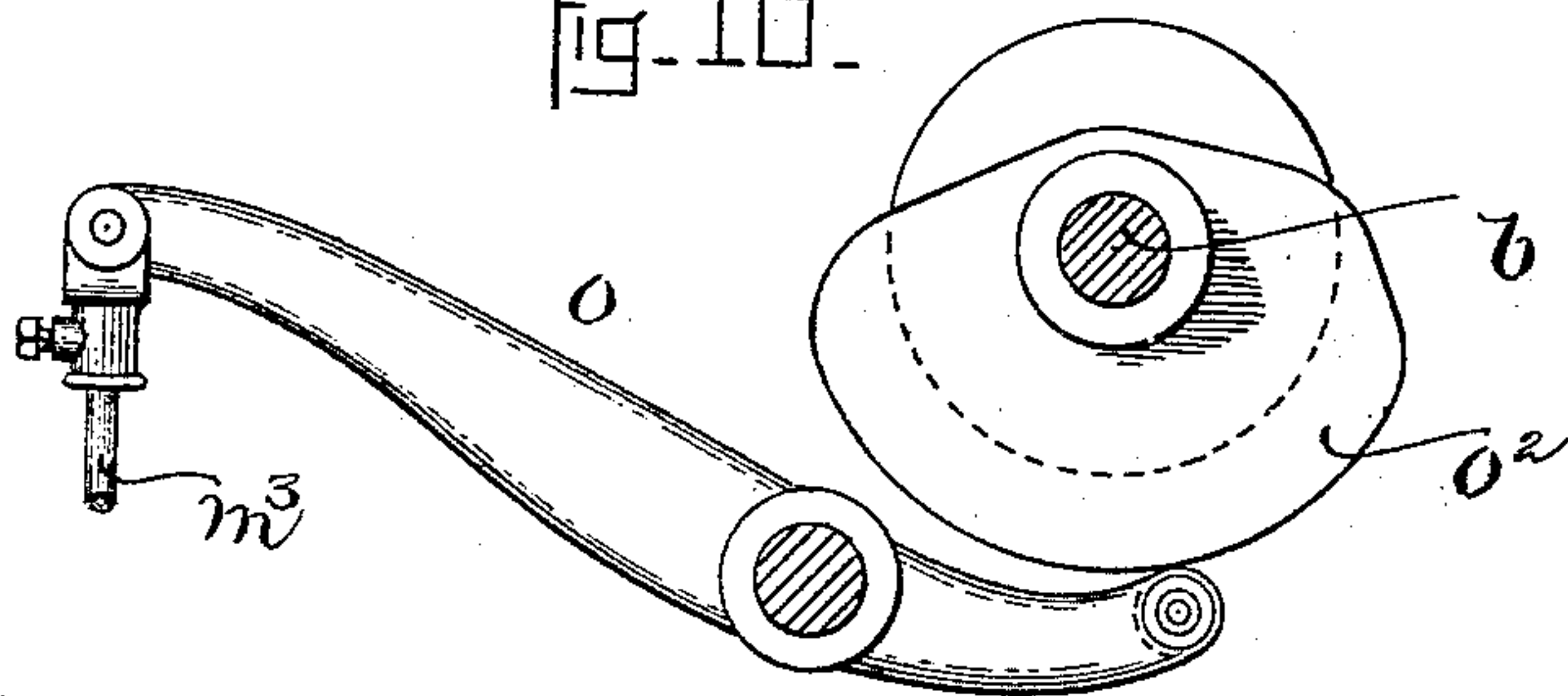


Fig. 10.



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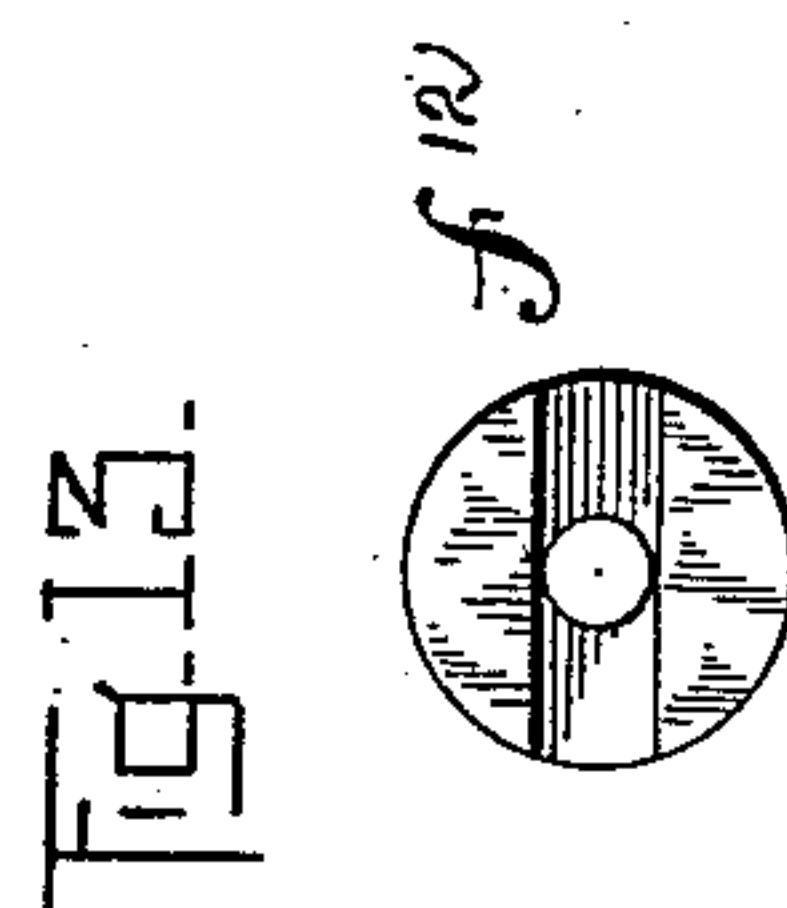
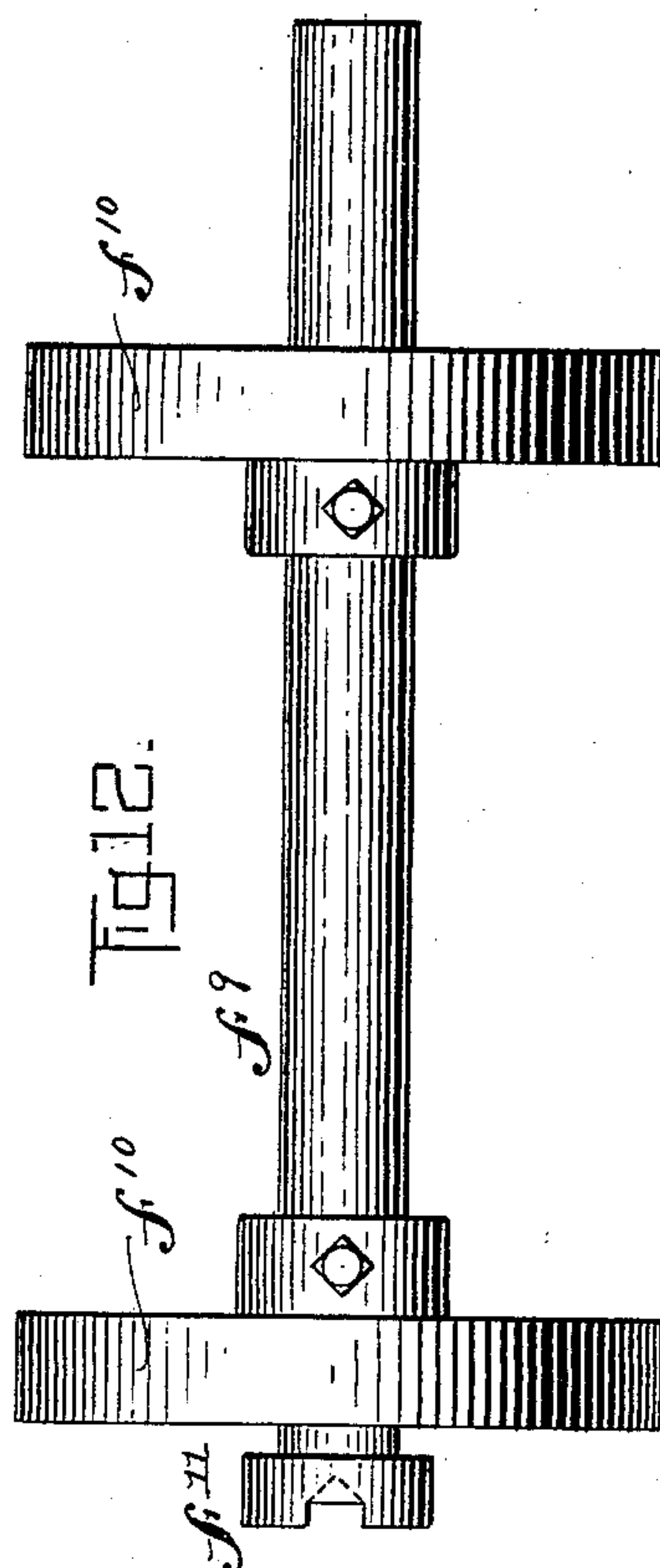
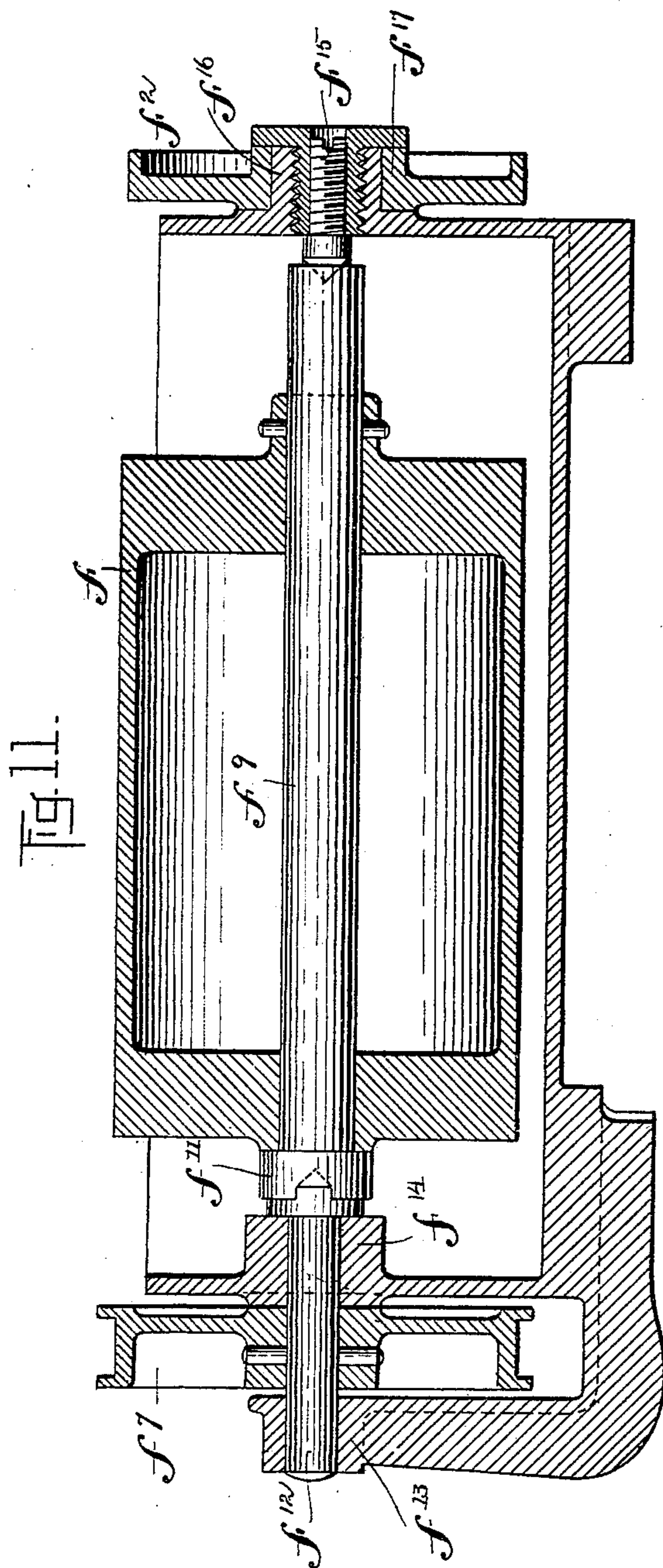
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(No Model.)

8 Sheets—Sheet 8.



WITNESSES:
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UNITED STATES PATENT OFFICE.

VICTOR BEAUREGARD AND FRED HAUSMANN, OF BOSTON, AND CHARLES S. GOODING, OF BROOKLINE, MASSACHUSETTS; SAID BEAUREGARD AND GOODING ASSIGNORS TO SAID HAUSMANN AND SAID HAUSMANN ASSIGNOR TO THE SIEGEL LABELING MACHINE COMPANY, OF BOSTON, MASSACHUSETTS.

BOTTLE-LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 620,534, dated February 28, 1899.

Application filed August 24, 1897. Serial No. 649,314. (No model.)

To all whom it may concern:

Be it known that we, VICTOR BEAUREGARD and FRED HAUSMANN, of Boston, in the county of Suffolk, and CHARLES S. GOODING, of Brookline, in the county of Norfolk, State of Massachusetts, have invented certain new and useful Improvements in Bottle-Labeling Machines, of which the following is a specification.

10 This invention has relation to machines for pasting labels upon bottles, and has for its object to provide certain improvements in the same whereby they are rendered more simple in construction and more highly efficient in
15 operation.

To this end the invention consists in a machine possessing certain features of construction and arrangement of parts, all as illustrated upon the drawings and now to be described in detail, and pointed out with particularity in the claims.

Reference is to be had to the accompanying drawings, and to the letters marked thereon, forming a part of this specification, the same
25 letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 represents in front elevation a machine embodying our improvements. Fig. 2 represents the machine
30 in vertical longitudinal section, the section being taken on the line 2 2 of Fig. 1. Fig. 3 represents a portion of the machine in plan view, so as to illustrate the power-shaft and the cams thereon by which power is transmitted to the various movable parts of the machine. Fig. 4 represents in detail the label-carrier, the label-box, and the paste reservoir or tank. Fig. 5 represents in detail
40 the paste-reservoir, a tank, and the means for revolving the paste-distributing roller or rollers. Fig. 6 illustrates the device for maintaining the equality of pressure of the shoes of the label-carrier against the paste-distributing rollers. Fig. 7 is a sectional view showing the label-box. Figs. 8 and 9 illustrate in detail the label-carrier, the label wiping or smoothing devices, and the plungers which force the bottle through the last-mentioned

devices. Fig. 10 illustrates in detail the lever and cam for operating the lower bottle-receiving plunger. Figs. 11, 12, and 13 illustrate an improved paste-distributing device.

Referring to the drawings, we have illustrated a machine which we have selected for the purpose of showing one embodiment of
55 our invention, and although we shall now proceed to describe the same more or less minutely it will be understood that we do not wish to be construed as limiting ourselves thereto or to the details of construction thereof, as many and various changes may be made in the same without departing from the spirit and scope of the invention.

The machine is adapted for affixing labels to cans and other receptacles, as well as to
65 glass bottles, and it may be so changed as to adapt it for many other uses and purposes when desired. It is provided with a frame having side standards a , connected by cross bars or braces $a' a'$, which frame is supported
70 by a base a^2 , as shown in Fig. 1.

The frame may be formed in any shape consistent with lightness and strength and adapted to receive and support the various movable parts which are required for gumming
75 the label and affixing it smoothly to a bottle or other receptacle. In the upper part of the frame a power-shaft b is journaled in suitable bearings $a^3 a^3$, formed on the side standard a , power being applied to the shaft by means of
80 a pulley b' or by any other desired means. From this shaft power is transmitted to the movable parts of the machine.

Pivoted upon the stud-shaft c , mounted in the upper portion of the machine and secured
85 to the standards a , is a cam-actuated lever c' , having on its inner end a roller extending into a cam-path in a disk cam c^{12} , rigidly secured to the power-shaft b . Pivoted to and depending from the outer end of the lever c'
90 is a label-carrier which, as shown, consists of the slotted bar c^2 , formed at its lower end with studs c^3 to receive the bearings of two oppositely-movable arms c^4 . The said arms c^4 hang loosely from the bar c^2 , being connected
95 by a spring c^{10} , and are provided with exten-

sions or stops c^5 to abut against adjustable screws c^6 , which limit the inward movement of their lower ends, the said screws being threaded through lugs c^7 , as shown in Fig. 1, on the lower end of the bar c^2 . Upon the lower ends of the arms c^4 are secured label-carrying shoes c^8 , which may be of any material suitable for the purpose. By means of the lever c' and its cam the label-carrier is raised and lowered, and through the medium of the device which we shall now describe it is swung bodily about its pivot to receive a label and deposit it upon a bottle.

To the bar c^2 is connected a slide d , having its slotted or forked end extending past the power-shaft b , as shown in Fig. 2, and having a roller d' projecting into a cam-slot in a cam-disk d^2 , secured to the power-shaft b .

In the path of the label-carrier is placed the tank or receptacle e for the gum or paste which is used for sticking the label to the bottle or other receptacle. The tank rests upon adjusting-screws e' , threaded through lugs a^5 , projecting inwardly from the standards a of the frame, there being lock-nuts e^2 on the screws e' to lock them after they have been once adjusted. There is also a screw e^3 , projecting into a boss on the tank through one of the lugs or brackets a^5 and equipped on its end with a milled head e^4 to securely lock the tank in place after it has been adjusted.

The tank is filled with any desirable paste or gumming material, and partially submerged therein is the paste-distributing roller or rollers. As shown in Fig. 11, we may employ a single roll f , equal in length to the label to be employed, or else we may use two separated rollers f^{10} for applying a thin strip of paste at each end of the label, as illustrated in Fig. 12. A shaft f^9 supports the roll or rollers and is formed at one end with an enlargement f^{11} , having a cross slot and socket to receive a rib and a pin projecting out from the end of a shaft f^{12} , journaled in bearings f^{13} , one on a bracket e^6 and the other on the wall of the tank. At its other end the shaft f^9 is formed with a socket to receive the conical end of a screw f^{15} , which holds it removably in place. Upon the shaft f^{12} is rigidly secured a pulley or wheel f' , placed between the end wall of the tank e and the standard e^6 , as shown in Fig. 5, and on a boss f^{16} at the other end of the tank is loosely mounted an idler f^2 . The idler f^2 is held in place by a tubular large-headed screw f^{17} , into which the said screw f^{15} is passed.

The paste-distributing roll and the wheels $f' f^2$ are all of the same diameter, for the purpose to be described.

Mounted in the forked end of a screw f^3 , passed through a lug f^4 on a bracket f^9 , secured to the side of the tank e , (said screw being held in place by nuts $f^5 f^5$), is a small idler-wheel f^6 , and passing around it and the wheel or pulley f' is an endless belt f^7 , provided with clips or attachments f^8 , placed at regular intervals. By adjusting the nuts $f^5 f^5$

the belt may be tightened or loosened, as desired.

The label-carrier is provided with a depending arm g , as shown in Fig. 2, to which is secured a finger g' , extending laterally and downward, so that when the label-carrier is swung to the rear the end of the finger will engage one of the clips or attachments f^8 and, causing the movement of the belt, will effect the rotation of the wheel f' , and consequently of the paste-distributing roll f .

The cams which actuate the label-carrier are so timed that when the label-carrier is moved backward the shoes c^8 thereof are moved over the paste-distributing roll, and when the carrier is moving forward again it is slightly elevated, so that the shoes escape the rollers.

By providing the finger g' , which engages the clips on the belt, the periphery of the paste-distributing roll is caused to move at the same rate of speed as the shoe which comes into contact therewith, so that the shoe does not slip over the roll, but has every portion of its surface covered with paste. In order that no portion of the shoes will press against the roll with a greater degree of force than any other part, the label-carrier is provided with an adjustable guide h , having its lower laterally-extended face h' in the plane of the operative faces of the shoes, and when the label-carrier is swung rearwardly the guide comes into contact with the periphery of the roll f^2 , so as to regulate the pressure of the shoe against the paste-distributing roll, as will be readily understood. The shoe may be adjusted by means of the screws $h^2 h^2$ and secured in place by a screw h^3 , as shown. It is greater in length than the shoes, so that the shoes can never slip in the paste-roller.

The cam-groove in which the roller on the end of the lever c' projects is wide enough to permit of a certain amount of lost motion of the roller and allow the label-carrier to yield slightly when the rear edge of the guide h' strikes against the periphery of the roll f^2 . This construction and arrangement insure that the paste will be distributed evenly on the surface of the label-carrying shoes.

If desired, we may dispense with the belt and employ the shoe for revolving the paste-distributing roll, and in this case we secure the roll f^2 directly to the shaft f^9 .

In the rear of the tank is placed the label-box. This consists of a flat plate i , provided with vertical standards i' to guide the labels which are placed between them. Each standard is formed with an inwardly-projecting web i^2 and with brushes or bristles i^3 at their upper ends, the ends of the bristles projecting very slightly over the edge of the web i^2 to prevent more than one label being removed at a time. The plate i is mounted upon the end of a lever j , fulcrumed at j' in the standards a of the frame and having at its upper end a roller bearing against a cam j^2 , rigidly secured to the power-shaft b . Projecting

downwardly from the end of the lever j is the cylindrical guide k , in which is placed a hollow piston k' , fitted at its upper end with a disk k^2 and a plate k^{20} , upon which the labels are placed. The lower end of the piston k' is closed by a plug k^{12} , from which a pin k^3 projects into a slot k^4 in the cylindrical guide k to prevent the piston from rotating. A cord or wire k^5 is secured to the plug k^{12} and extending through a slot k^6 in the piston and through the slot k^4 in the guide over a pulley k^7 and is provided on its end with a weight k^8 , which is heavy enough to elevate the piston and the labels which are placed thereon.

The plate i projects rearwardly and is formed with a cylindrical guide i^4 , from which a rod i^5 passes loosely and rests upon a locking-lever i^6 , pivoted at i^7 in ears k^9 , projecting out from the tubular guide k .

The shorter end of the lever i^6 projects through a slot k^{10} in the tubular guide k and rests against the piston k' , there being a spring i^8 secured to the plate i and to the lever i^6 , which is of sufficient strength to cause the locking-lever to lock the piston against the action of the weight k^8 .

The arm or bracket g of the label-carrier, before referred to, is provided with a projection in the shape of a screw g^3 , which after the label-carrier has reached its rearward limit engages the pin i^5 and depresses it sufficiently to unlock the piston k' and allow the weight k^8 to force it and the labels up against the gummed shoes of the label-carrier. When the pin i^5 is disengaged from the projection g^3 , the locking-lever immediately engages the piston to lock it against further movement. The label-boxes and the pin i^5 are normally out of the plane of the shoes on the label-carrier, so that when the label-carrier has reached its rearmost position in alignment with the label-box the cam j^2 operates the lever j to elevate the said label-box and bring the pin i^5 into engagement with the projection g^3 of the label-carrier, and before the label-carrier begins its forward movement the label-box is depressed. Now it will be seen that during one oscillation of the label-carrier the shoes therein will be covered with gum or paste, the label-box will be moved vertically to bring a label into contact with the paste or gum on the shoes, so as to cause it to stick thereto, and the label will be carried forward ready to be placed upon the bottle.

Two plungers are arranged in the front of the machine, the upper being indicated at l and the lower at m . The plunger l slides in a guide a^6 , projecting downward from the top cross-bar a^1 , and in the end of an arm a^7 , projecting outward from one of the standards a , it being reciprocated by a lever n , fulcrumed at n' , and operated by a cam-slide n^2 , connected at n^3 thereto, and having its forked end embracing the power-shaft b , as illustrated in Fig. 2. The cam-slide has a roller n^{20} projecting into a cam-slot in the cam j^2 .

The forward end of the lever n is forked to form a slideway to receive a block n^4 , pivoted to the plunger l , so that when the lever is oscillated the plunger will be raised and lowered. The lower plunger m slides in a guide m' , formed on a bracket m^2 , projecting forward from one of the lower cross-bars a^2 , and passes loosely through a clip m^{12} , rigidly secured to a connecting-rod m^3 , pivoted at its upper end to a lever o . The plunger m is also equipped with a collar m^4 , between which and the clip m^{12} is placed a spring m^5 . The lever o is fulcrumed on a stud mounted in a bar a^8 on one of the standards a and has on its rear end a roller o^{20} , bearing against a cam o' , rigidly secured to the shaft b .

The bracket g has formed upon it a boss g^4 to receive a rod g^5 , equipped on its end with a gage-plate g^6 , against which the end of the bottle is placed, the rod g^5 being adjustable to vary the position of the plate as desired and regulate the position of the label relatively to the bottom of the bottle. The upper end of the plunger m is formed to receive a bottle and projects slightly above the lower face of the shoes on the label-carrier, as shown in Fig. 1, and the plunger l is provided at its lower end with a shoe y , having its lower face curved to fit the bottle with which it is to engage, the object being to engage the bottle and prevent its moving sidewise and throwing the label out of line.

Below the plane of the shoes of the label-carrier are placed two brushes p , having their bristles extending toward each other and sufficiently separated to allow the bottle to be drawn between them. Each brush is mounted on an adjustable bracket p' , rigidly secured to the standards a .

The operation of the machine is as follows: The pulley b' being clutched to the shaft b through the medium of any desirable clutch mechanism operated by the rod q , (shown in Fig. 1,) a rotation of the shaft causes the following results: The parts being in the position shown in Fig. 2, with the label-carrier in its lower position, the label-carrier is moved to the rear, and the shoes thereof are covered with paste from the paste-roller. When the label-carrier reaches its rearmost position, the label-box is elevated, the piston or follower therein is released, and a label attaches itself to the shoe. Then the label-box is depressed again, the label-carrier is bodily raised, and a label is carried forward in position to be attached to a bottle, the plungers m and l being now raised and in position. A bottle is now inserted between the two plungers until its bottom presses against the gage-plate g^6 , whereupon the upper plunger l is lowered and the bottle is grasped between it and the plunger m with a yielding pressure. The plungers force the bottle downward, and the arms c^4 of the label-carrier are forced apart as the bottle descends, freeing the edges of the label, which as the bottle is forced down through the brushes p are wiped smoothly over the

bottle and caused to adhere tightly thereto. After the plunger l has reached its lowermost position it rises before the lower plunger to allow the bottle to be withdrawn. While the bottle is being forced downward, the label-carrier is moving to the rear to bring forward another label, so that when the plungers resume their first positions the carrier is ready to place another label on a fresh bottle.

We do not necessarily limit ourselves to the employment of brushes for wiping the edges of the brushes over the bottle, as we may employ rolls in place thereof. For instance, in Figs. 8 and 9 we have illustrated how the rolls may be used. Upon the bracket m' , through which the plunger m passes, is mounted a plate q^0 , having standards q^1 arising therefrom, on which cross-arms q^2 q^2 are pivoted. Near their upper ends the cross-arms are united by a tension-spring q^3 , their movement toward each other being stopped by adjustable screws q^4 , abutting against the lower extended ends q^5 thereof.

Pivoted to the upper ends of the arms q^2 are bearing-brackets q^6 q^6 , in which felt or rubber covered rolls q^7 q^7 are journaled. Stop-pins q^8 hold the brackets against swinging too far one way or the other, although they allow the rolls to be swung to automatically shape themselves to a bottle of almost any shape. In this construction the bottle is carried between the rolls, the arms q^2 separating to permit this, and the spring q^3 forces the rolls against the bottle with sufficient force to wipe the label over the bottle and attach it firmly thereto, so as to prevent the label from wrinkling or presenting an unsightly appearance.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, we declare that what we claim is—

1. A labeling-machine, comprising an oscillatory label-carrier, a label-box, a paste-roll, means for moving the label-carrier past the paste-roll into alinement with the label-box, and means for regularly and automatically moving the label-box bodily toward the label-carrier to supply a label thereto, and then away therefrom.

2. A labeling-machine comprising an oscillatory label-carrier swinging on a pivot which is stationary longitudinally of the machine, a label-box out of the path of the label-carrier, means for swinging the label-carrier into alinement with the label-box, and means for intermittently reciprocating the label-box toward and from the label-carrier for the purpose of supplying a label thereto.

3. A labeling-machine, comprising a label-carrier, a label-box, a paste-box having paste-distributing means, means for moving the label-carrier into contact with the paste-distributing means, and into alinement with the label-box, means for bodily reciprocating the

label-box at each movement of the said carrier to supply a label to the carrier, and means for swinging the label-carrier to its operative position out of contact with the paste-distributing means.

4. In a labeling-machine, in combination, a label-box, a label-carrier movable into alinement with the label-box, a follower in the label-box, a friction-lock for holding the follower against movement, means actuated by the label-carrier for operating the lock to release the follower when the label-carrier is in alinement therewith, and means for oscillating the label-box once for each reciprocation of the said label-carrier.

5. In a labeling-machine, in combination, a label-box, a label-carrier movable into alinement with the label-box, a follower in the label-box, a friction-lock for holding the follower against movement, and means for oscillating the label-box toward and from the label-carrier whereby the engagement of the lock with the carrier releases the follower.

6. In a labeling-machine, in combination, a movable label-carrier, a paste-tank, a paste-distributing roll in the path of the label-carrier, and means operating independently of the engagement of the carrier with the roll, for rotating the roll while the label-carrier is in contact therewith to distribute the paste evenly on the carrier.

7. In a labeling-machine, in combination, a movable label-carrier, having shoes, a paste-distributing roll in the path of the shoes, and means operated by a projection on the carrier independently of the engagement of the shoes with the roll for revolving the roll to distribute the paste evenly on the shoes.

8. In a labeling-machine, in combination, a paste-distributing roll, a pulley rigidly connected to the roll, a label-carrier having shoes, and means on the label-carrier for rotating said pulley independently of the engagement of the shoes with the roll to distribute the paste evenly on the said shoes.

9. In a labeling-machine, in combination, a paste-distributing roll, an endless band having clips and arranged to rotate said roll, and means carried by the label-carrier for engaging the clips on the band to rotate the roll.

10. In a labeling-machine, in combination, a label-carrier having one or more label-carrying shoes with flat faces, and a paste-distributing roll in the path of the shoes, in combination with means supported by the label-carrier and engaging the roll for causing the flat faces of the shoes to press against or engage the roll with an unvarying pressure.

11. In a labeling-machine, in combination, a label-carrier having one or more label-carrying shoes with flat faces, a paste-distributing roll in the path of the shoes, a wheel mounted on the axis of the roll, and a supplemental shoe having a flat face and mounted on the carrier and adapted to engage and pass over the said wheel so as to regulate the pressure of the label-carrying shoes upon the roll.

12. In a labeling-machine, in combination, an oscillatory label-carrier having label-carrying shoes and fulcrumed on a pivot stationary in lines longitudinal of the machine, a
5 paste-distributing device for gumming the label-carrying shoes, a label-box arranged radially of the pivot on which the label-carrier swings, and means for reciprocating the label-box toward or from the said carrier.

10 13. In a labeling-machine, in combination, an oscillatory label-carrier having label-carrying shoes, a label-box, means for wiping a label on the bottle, upper and lower plungers for holding the bottle when it is wiped, and a
15 single power-shaft provided with cams for operating the label-carrier and the plungers.

14. In a labeling-machine, in combination, a paste-distributing roll, a label-box, an oscillatory label-carrier movable past the said roll
20 and into alinement with the label-box, a cam and lever for swinging the carrier transversely, and a cam and lever for moving it longitudinally, and a single shaft on which said cams are both mounted.

25 15. In a labeling-machine, in combination, a paste-distributing roll, a pivoted label-car-

rier movable past the roll, a label-box, a pivoted lever supporting said box, means for operating said lever, and a power-shaft having means for swinging the label-carrier into
30 alinement with the label-box, to bring a label in contact with the carrier.

16. In a labeling-machine, in combination, a label-holder, a label-carrier having separable shoes, means for placing a line of paste on
35 only the ends of the label leaving the body unpasted prior to its being placed on the bottle, oppositely-acting plungers for clamping the label against the bottle, and mechanism for wiping the edges of the label against the bot-
40 tle.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 2d day of August, A. D. 1897.

VICTOR BEAUREGARD.
FRED HAUSMANN.
CHARLES S. GOODING.

Witnesses:

M. B. MAY,
E. BATCHELDER.