

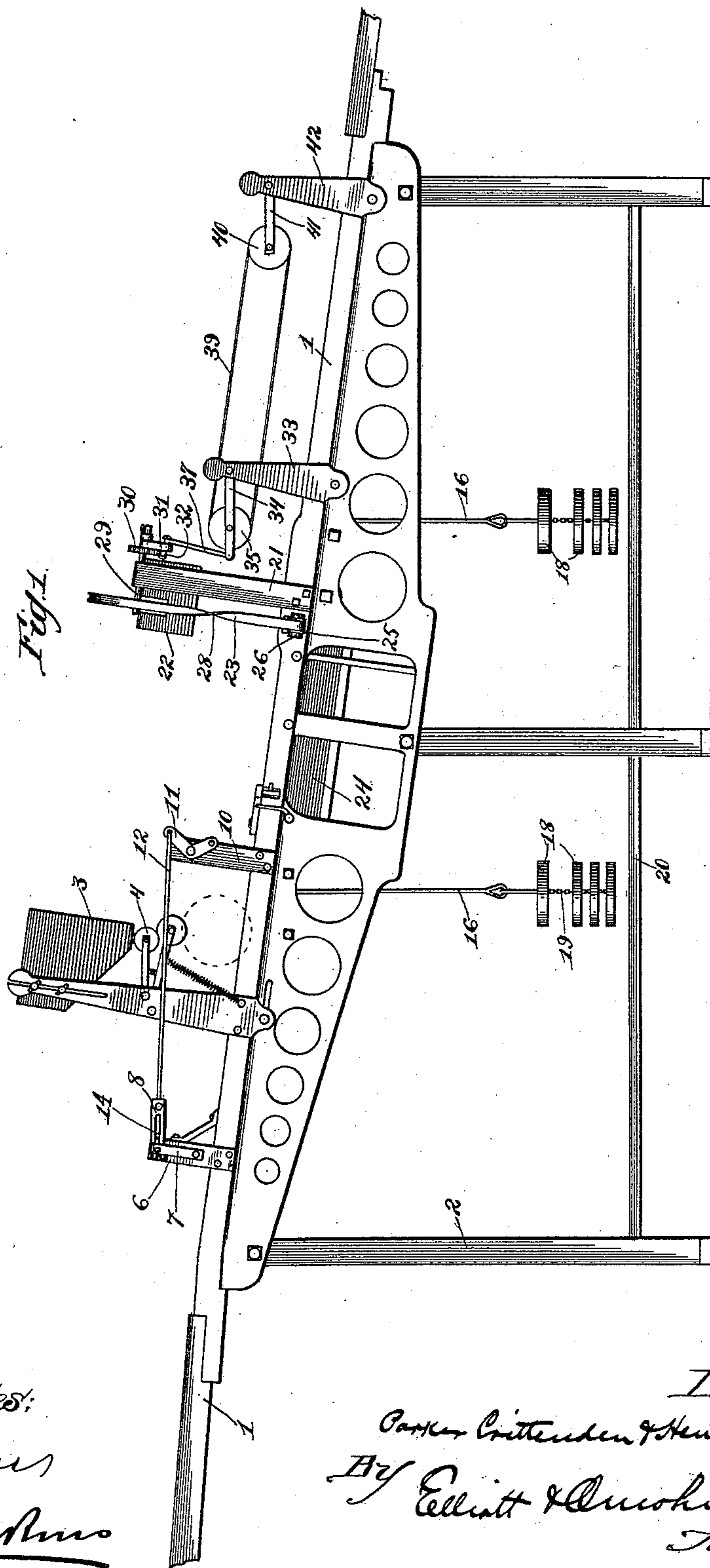
(No Model.)

3 Sheets—Sheet 1.

P. CRITTENDEN & H. W. PEASE.
CAN LABELING MACHINE.

No. 497,368.

Patented May 16, 1893.



Witnesses:
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(No Model.)

3 Sheets—Sheet 2.

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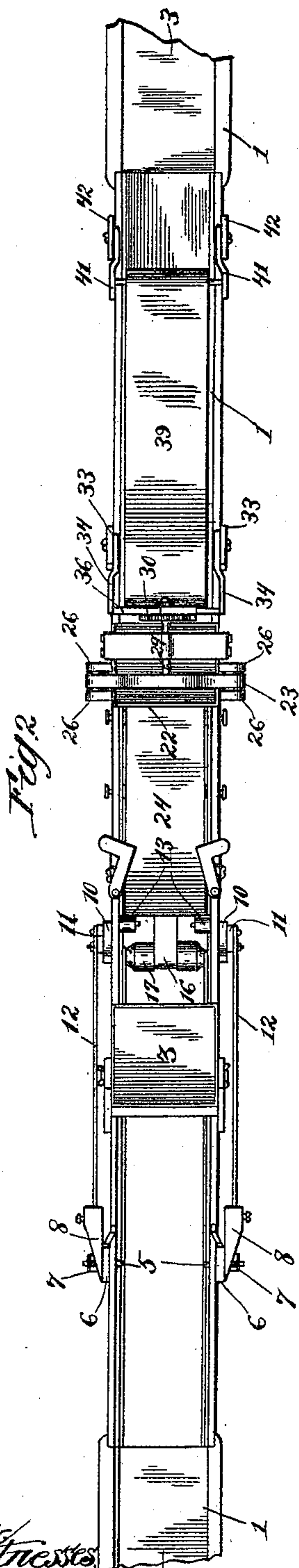


Fig. 2.

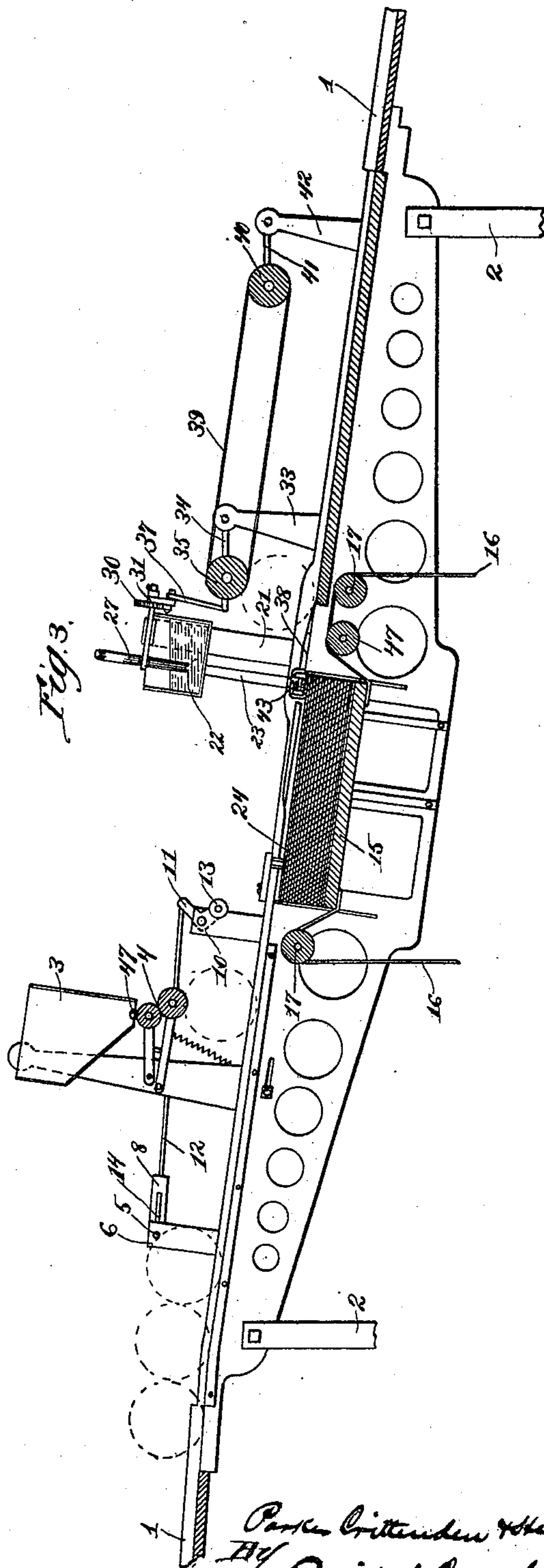


Fig. 3.

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Fig. 4.

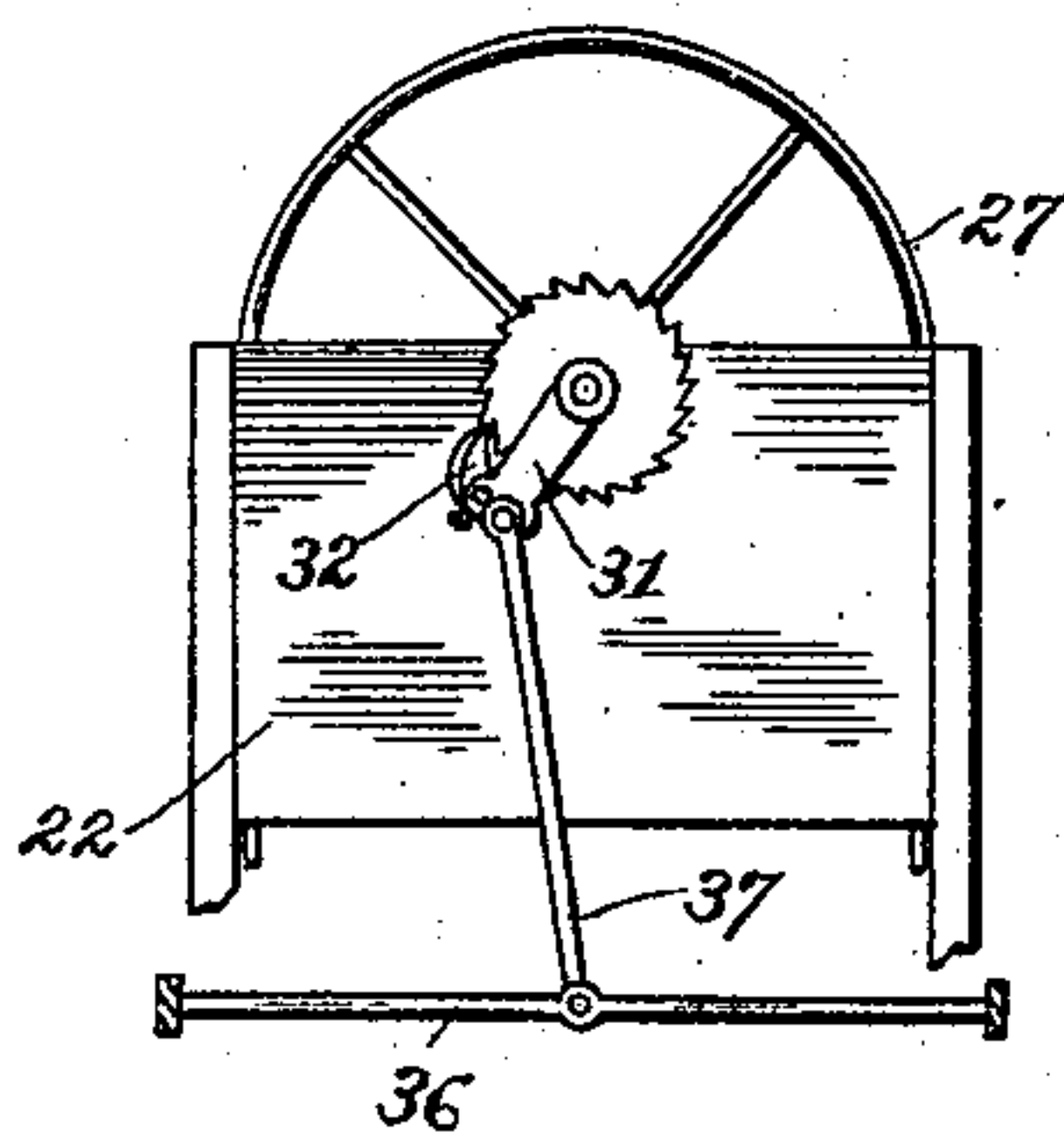


Fig. 5.

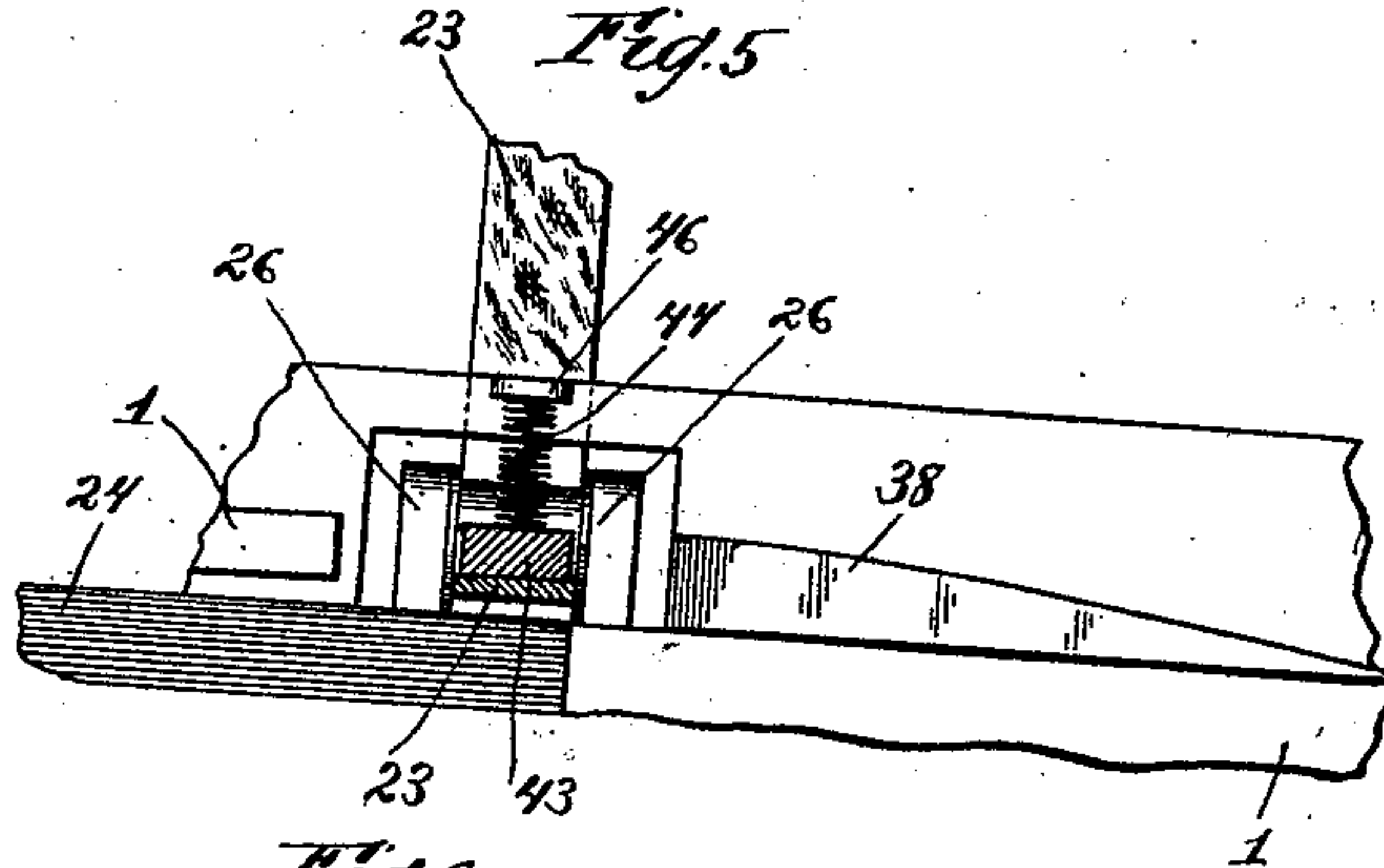


Fig. 6.

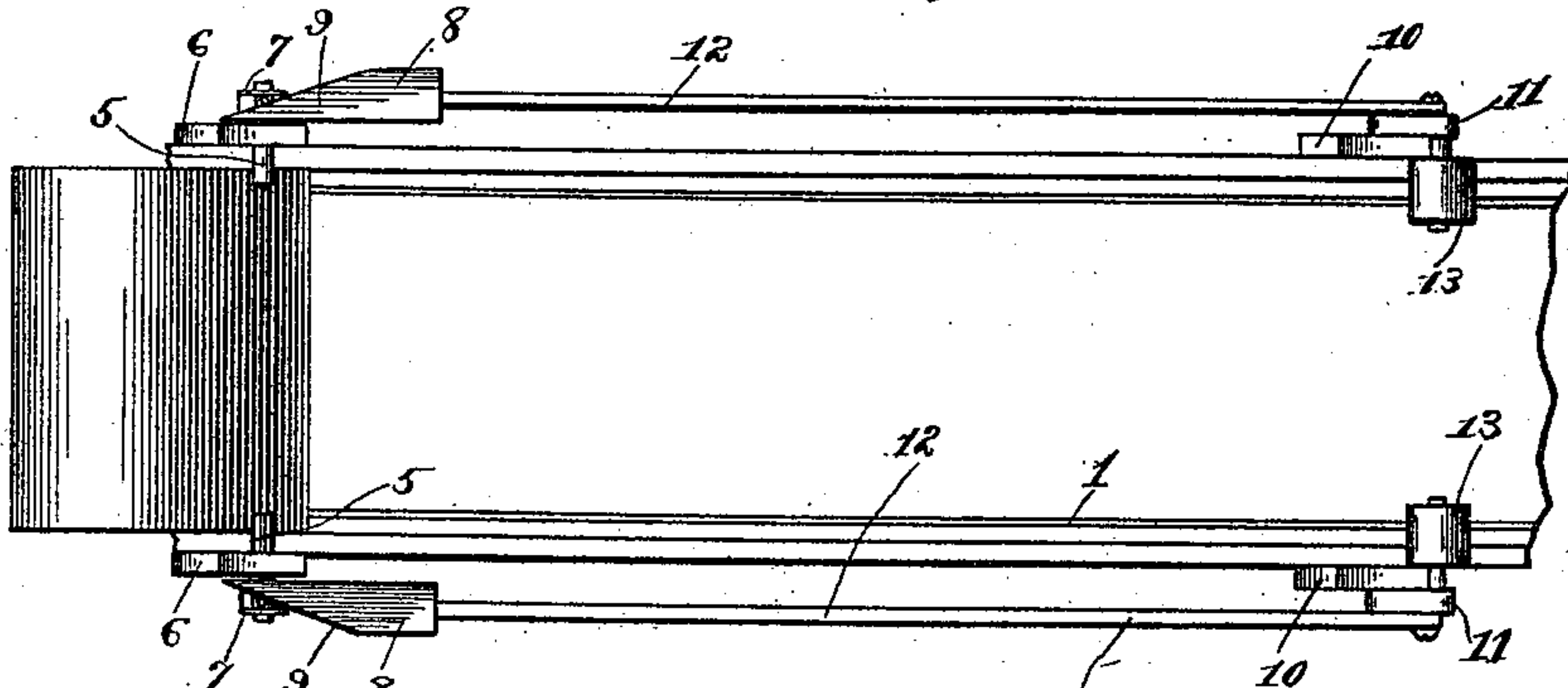


Fig. 7.

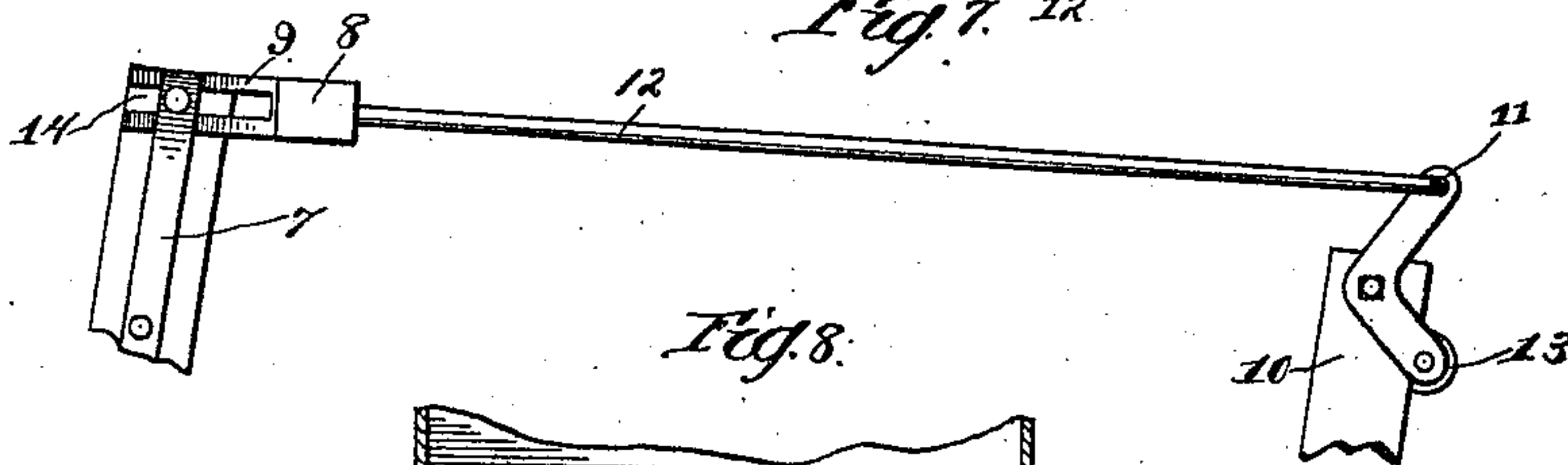
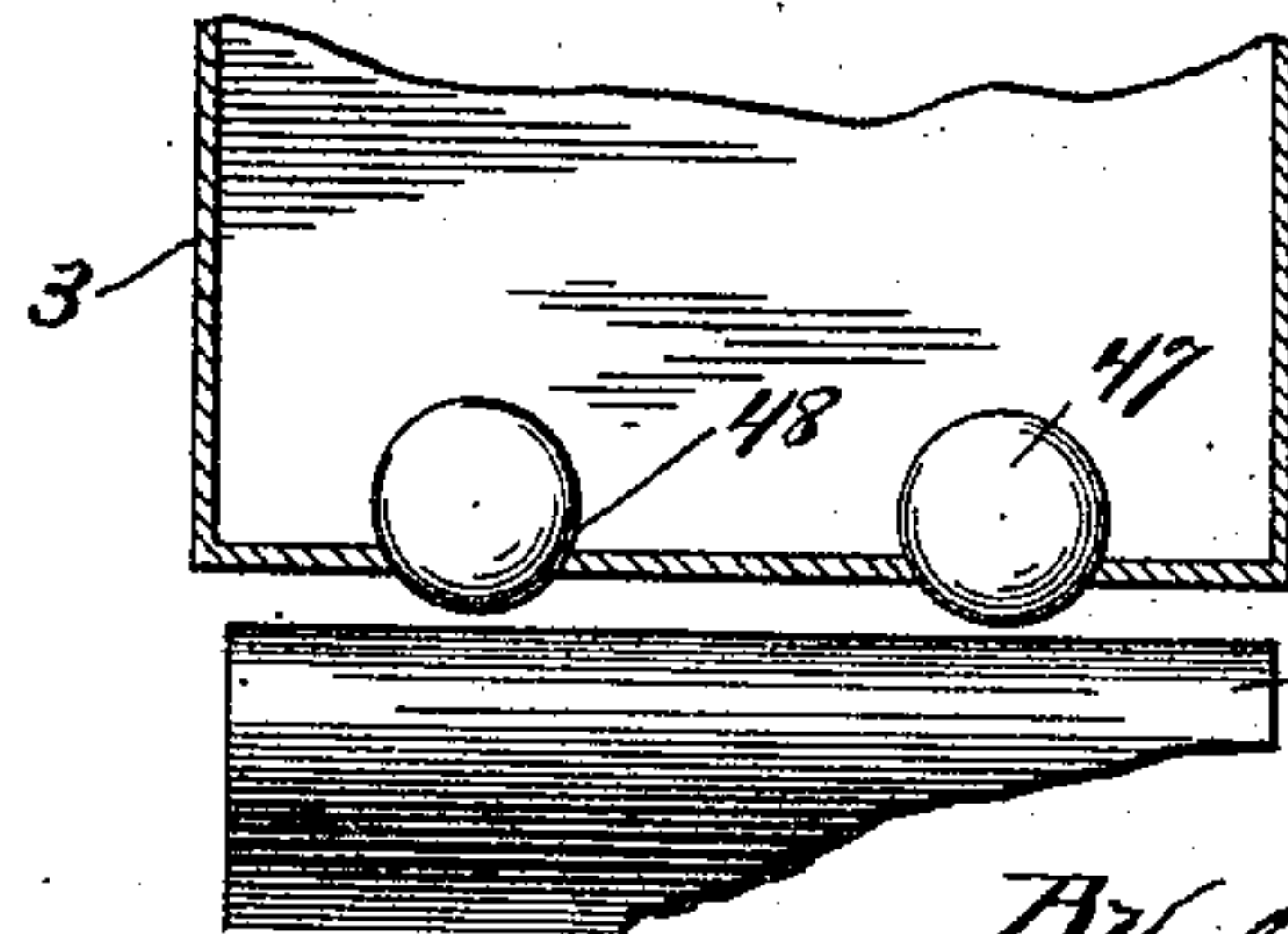


Fig. 8.



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UNITED STATES PATENT OFFICE.

PARKER CRITTENDEN AND HENRY W. PEASE, OF CHICAGO, ILLINOIS,
ASSIGNORS TO THE PACIFIC LABELING COMPANY, OF SAN FRAN-
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CAN-LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 497,368, dated May 16, 1893.

Application filed May 5, 1892. Serial No. 431,863. (No model.)

To all whom it may concern:

Be it known that we, PARKER CRITTENDEN and HENRY W. PEASE, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Can-Labeling Machines, of which the following is a full, clear, and exact specification.

Our invention relates to machines for automatically pasting labels on round or cylindrical objects, such as cans or jars; and more particularly to that species of such machines in which the momentum of the can itself in descending along an inclined run-way, imparts to the various devices which co-operate in the application of the label, the necessary power for their actuation.

The prime object of our invention generally, is to improve the construction of devices designed for this purpose, shown and described in United States Letters-Patent Nos. 470,164, 470,165 and 470,166, granted March 1, 1892, to C. E. Newell, and the Pacific Labeling Company, to which patents reference may be had for a better understanding of any old features herein shown in connection with our improvements.

More particularly, one of the objects of our invention, is to improve the can releasing mechanism, whereby the same will be more responsive to the impetus of the can and more effective in holding a store of cans in check.

Another object of our invention, is to provide the label carrying bed or support with compensating mechanism, whereby the loss of weight on the label bed resulting from the removal of the labels, will be automatically compensated for in the power necessary to hold the label bed or support up to its work.

Another object, is to locate the lap pasting mechanism above the run-way and labels, whereby the paste will be more fluently applied.

A further object, is to actuate the lap pasting mechanism by the momentum of the can, but without entailing a decrease in such momentum. And finally, our invention has for its object to automatically smooth the label out and smoothly and firmly press the lap end

of the label against the can during the descent of the latter along the run-way.

With these ends in view, our invention consists in certain features of novelty in the construction, combination and arrangement of parts, by which the said objects and certain other objects of minor importance hereinafter described, are accomplished, as fully explained with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings, Figure 1, is a general view, showing our improved machine in side elevation, portions of the run-way at both ends being broken away. Fig. 2, is a plan view of the same. Fig. 3, is a vertical, longitudinal section, taken on the line 3—3, Fig. 2. Fig. 4, is an enlarged detail view of portions of the lap pasting mechanism hereinafter described. Fig. 5, is an enlarged detail sectional view taken on the line 3—3, Fig. 2. Fig. 6, is an enlarged detail plan view of the can releasing mechanism hereinafter described. Fig. 7, is a side elevation of the same, the can shown in Fig. 6 being omitted; and Fig. 8, is a sectional view of the paste fountain on an enlarged scale, showing the form of valve employed.

Machines of this character are designed to support a supply of cans to be labeled on the upper end of the inclined run-way, which, when the foremost one is released, automatically descend along such run-way at short intervals apart, first receiving a coat of paste or gum and then operating the releasing device, which sets free a single can at a time, after which they roll over a supply of superposed labels which adhere to the cans one at a time, the cans finally coming in contact with mechanism for gumming the lap end of the label and pressing it against the can.

In the drawings, wherein like signs of reference indicate like parts throughout the several views, 1 is the inclined run-way, 2 a suitable supporting frame, 3 the initial paste fountain or reservoir suitably supported above the run-way and having arranged in conjunction therewith the vertically movable paste feeding rollers 4; all of which devices may be of any suitable and well known construction,

or of the construction shown and described in the aforesaid Letters-Patent.

The cans to be labeled, are supported on their sides at the upper end of the run-way, as shown by dotted lines in Fig. 3, and held in check by means of lugs or pins 5, which are supported transversely at either side of the run-way in two uprights or standards, 6, and held normally in engagement with the lowermost can, by means of any suitable springs. These lugs 5, are confined to move transversely of the runway and in a plane at right-angles thereto, whereby they may be withdrawn by a minimum of power and at the same time be incapable of displacement by the pressure of the cans. As shown in the drawings, the standards 6 are provided with perforations near their upper ends, through which the lugs or pins 5 pass into the path of the cans, and are attached at their outer ends in any convenient manner, to suitable plate springs, 7, whose lower ends are secured to the uprights, 6, such springs exerting a normal tendency to force the pins or lugs inward or toward each other. Thus, it will be seen that the supply of cans is held in check by positive means, and can, by no possibility, break through the stop thus formed. These pins or lugs 5, may be withdrawn from engagement with the can, by means of longitudinally reciprocating wedges or cams, 8, one on each side, each of which engages between the outer side of one of the standards 6, and the spring 7 or head of the pin or lug 5, so that when such wedges or cams 8 are forced rearwardly or between the standards and the springs 7, their inclined faces 9, acting upon the springs 7, will overcome the inertia of such springs and withdraw the lugs from engagement with the can, permitting it to roll down the run-way. This releasing mechanism should, of course, be actuated automatically, by means of the rolling can itself, as in the prior devices before referred to, and to this end, at a suitable distance below the standard 6, we arrange similar standards or uprights 10, to which are pivoted respectively, two up-right levers 11, whose upper ends are connected by suitable rods 12, with the cams 8, and whose lower ends are provided respectively with heavy anti-friction rollers 13, turned inwardly in the path of the cans, so that the latter in descending along the run-way, will strike the rollers 13 and cause the release of the next lowest can, as will be understood. By this arrangement, the cans are impinged by the rollers on their forward side and hence are more effective in oscillating the upright levers 11, than if the levers were arranged horizontally. Moreover, the can being struck above its axis, that is to say, above a line extending through the center of the can, at right-angles to its axis, and parallel with the direction of the runway, the shock cannot throw the can from the runway, but, on the contrary, the downward pressure of the rollers 13, will hold the can against dis-

placement. The levers 11, being arranged vertically on a horizontal axis, the full movement necessary for actuating the can releasing mechanism, is gained by the power resulting from the can impinging the levers at their extreme lower ends, thereby attaining both the maximum movement, as well as the maximum power of the levers, the latter feature being of no less importance than the former, as practice has demonstrated that when the levers are arranged horizontally, they are not only apt to derail the can, but their initial resistance to the movement of the can, and the subsequent friction caused by the dragging of their ends against the head of the can (which friction entails a reduction of the momentum of the can, without adding movement to the levers or producing any other good result), destroys the force of the can, upon which the pasting and smoothing devices depend for their proper operation.

The wedges or cams, 8, may be supported with capability of sliding to and fro, in any suitable manner, but we prefer to accomplish this by simply providing each of such wedges or cams with a slot 14, through which slots the pins or lugs 5 pass, thus providing the wedges with simple supports and at the same time insuring their action on the springs 7, in the immediate vicinity of the pins 5. The levers 11, are preferably crooked, or of the bell-crank form, as shown in Fig. 7, for the purpose of conveniently bringing the anti-friction rollers 13 to the lower side of the standards 10, against which standards the pintles of the rollers strike, thus constituting stops for limiting the downward movement of the wedges 8. The rollers 13 are sufficiently weighty to cause the withdrawal of the wedges 8 after the same have been thrown upward by the movement of the can; but it will, of course, be understood, that such wedges might be used in conjunction with springs for causing this reverse movement. Arranged immediately beyond or below the trip constituted by the said levers 11, is the label supporting bed or table 15, which, as heretofore, is provided with suitable guide-ways for restricting its movement to the perpendicular, and is supported by suitably weighted belts or cords 16, passing over anti-friction rollers or pulleys 17, also as heretofore, for holding the table or bed up to its work. In our invention, however, this label bed is provided with a compensating balance, which decreases proportionately with any decrease in the weight on the label bed, and which may consist of a series of weights, 18, flexibly or yieldingly connected together, one above the other, and suspended from each of the belts 16. Thus, it will be seen that as the pile of labels on the table, 15, decreases, permitting such table to rise, the weights 18 will accordingly descend, thus causing the lowermost one of the series to rest upon the floor or other suitable support, and thereby relieve the table of its weight, and as the pile of labels further de-

creases, the next weight will come down and rest upon the lowermost one, and so on in succession, until the table is counterbalanced by the uppermost weight alone. These weights may be connected together in any of the ways which will readily suggest themselves to the ordinary mechanic, as a simple example of which we have shown them suspended from the ends of the belts 16 at short intervals apart, by means of chains 19, and, if desired, the belts 16 may be of such length as to permit the weights to find their support upon the floor; but, we prefer to arrange under these weights a board 20, which not only serves as a support for them, but subserves the further useful purpose of a shelf and a brace for the legs of the frame.

Supported above the run-way on suitable standards, 21, is a paste trough or tank, 22, which supplies paste to the lap pasting device. The lap pasting device in this instance, consists of an endless paste belt, 23, running across the lower ends of the labels 24, as in the aforesaid device of Newell, Patent No. 470,166, but in our invention, the belt is arranged wholly above the run-way, drawing its paste from the elevated tank, 22. By this arrangement, we gain a material advantage over prior constructions, as the paste when applied to the belt at an elevated point, will, of course, flow more fluently and evenly toward the lower portion of the belt which crosses the labels. The belt may be guided in its travel across the labels by any suitable rollers or pulleys, 25, journaled in brackets 26, on the sides of the run-way, while at its upper end it runs over a large wheel 27, which serves to guide and propel the belt and at the same time to supply the belt with paste from the tank 22, into which such wheel 27 dips. By this arrangement, the paste is, of course, applied to the inner side of the belt, but, if desired, a twist may be taken in the belt, as shown at 28, which will turn the paste coated side of the belt downward against the labels, as will be understood. The wheel or pulley, 27, is keyed or secured to a suitably journaled shaft, 29, whose outer end carries a ratchet wheel 30 keyed thereto, and loosely mounted upon this shaft 29, is an arm 31, carrying a suitable pawl, 32, which is adapted to engage with said ratchet wheel when such arm is oscillated. This arm 31, may be oscillated by the movement of any suitable member, arranged in the path of the descending can, so that when the can strikes such movable member, it will deflect it upward and cause the arm 31 to impart a partial rotation to the wheel 27, and consequently to the lap pasting belt 23; thus presenting a newly coated surface of the belt to the uppermost label. To the end that the maximum movement of the belt 23 may be obtained by the movement of the can without materially retarding the momentum of the latter, we pivot in suitable standards 33, above the run-way, a pair of arms or levers 34, in which is journaled a

roller 35, such arms being suitably connected together by a cross-bar 36, which affords means for the attachment of a connecting rod 37, pivoted to the free end of the arm 31. Thus, it will be seen that when the can strikes the roller 35, the latter will revolve, thereby producing but little friction and at the same time will ride upward over the can and cause the movement of the lap pasting belt 23, through the medium of the connections already described.

It is desirable and important, that the momentum of the can after it leaves the lap pasting device, or, the final pasting device, should be promoted, or, at least, preserved, in order that it may be utilized as the can proceeds down the run-way, for smoothing the label and firmly pressing it to the can, so as to insure better adhesion; and to the end that the decrease in the momentum of the can, which would ordinarily be entailed by the actuation of the lap pasting device, as described, may not defeat the attainment of these ends, we arrange immediately below or beyond the lap pasting belt, and immediately in front of the roller 35, a short supplemental incline, 38, which accelerates the speed of the can the moment it passes the lap pasting belt, and consequently, compensates for the loss of momentum entailed by the collision of the can with the roller 35.

In order to smooth the lap end of the label down in position and to firmly press the label to the can throughout its length, we arrange above and parallel with the run-way, an endless pressure belt, 39, one end of which is supported by the roller 35, over which it runs, while its other end is supported by a similar roller 40, mounted in a pair of arms 41, pivoted to suitable standards 42, the weighty rollers 35, 40, thus acting to press the belt firmly against the can as it rolls down the run-way. As the can rolls under the belt, its frictional contact therewith will cause the belt to travel over the rollers, but the tendency of the belt will be to produce a rearward or reverse movement to the label, which will have the effect of smoothing the label upon the can and preventing the buckling which would result from attempting to smooth the label by simply rolling the can over a stationary surface. The belt 39, is preferably at least as long as the label, and it may be composed of any suitable fabric, either elastic or otherwise, but is preferably composed of rubber, as the latter substance produces greater adhesion or friction with the can and is consequently more effective in producing the desired rearward smoothing action on the label. The lap pasting belt is held normally aloof from the labels, as heretofore, and is provided with a superposed shield or plate 43, which is held in a position to be depressed by the rolling can, by means of spiral or other suitable springs 44, depending from ears 46, on the inner sides of the side-bars of the run-way.

As before mentioned, the paste fountain 3,

may be provided with any suitable valve adapted to be actuated by and let the paste out upon the roller, 4, but we prefer to employ for this purpose, a number of balls, 47, arranged in seats, 48, in the bottom of the fountain, and adapted to be unseated by the uppermost one of the rollers, 4, as will be understood; but, of course, a cylinder or roller instead of a number of balls, would answer the same purpose.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. In a can labeling machine, the combination with a runway, for supporting and guiding the cans, of lugs arranged over said runway transversely thereof, and being confined to move transversely of the runway in a plane extending at right angles thereto, and a trip arranged over the runway below said lugs, and having operative connection therewith, substantially as set forth.

2. In a can labeling machine, the combination with a run-way for supporting and guiding the cans; of transversely movable lugs supported over said run-way in the path of the cans, wedges or cams for disengaging said lugs, and a trip arranged below said lugs in the path of the cans and being connected with said wedges or cams for operating them, substantially as set forth.

3. In a can labeling machine, the combination with a run-way for supporting and guiding the cans; of uprights or standards, lugs or pins carried by said uprights and adapted to project into the path of the cans, springs for normally holding said lugs in the path of the cans, wedges or cams engaging between said springs and uprights or standards, and a trip arranged below said lugs in the path of the cans and being connected with said wedges or cams, substantially as set forth.

4. In a can labeling machine, the combination with the run-way for supporting and guiding the cans; of uprights, pins or lugs working through said uprights, springs for projecting said pins into the path of the cans, slotted wedges or cams arranged between said springs and uprights and being supported by said pins, and a trip arranged below said pins, in the path of the cans and being connected to said wedges or cams, substantially as set forth.

5. In a can labeling machine, the combination with a run-way for supporting and guiding the cans, and a stop on said run-way for holding a store of cans in check; of upright pivoted levers connected with said stops for disengaging the same, arranged to strike the can on its forward side, substantially as set forth.

6. In a can labeling machine, the combination with a run-way for supporting and guiding the cans, and a stop on said run-way for holding a store of cans in check; of upright pivoted levers connected with said stops for disengaging the same, and weighty anti-friction rollers secured to said levers and project-

ing transversely of said run-way, substantially as set forth.

7. In a can labeling machine, the combination with a runway for supporting and guiding the cans, and a stop on said runway for holding a store of cans in check, of upright pivoted levers connected with said stop for disengaging the same and being weighted at their lower ends and having projections extending transversely of said runway, substantially as set forth.

8. In a can labeling machine, the combination with a run-way for supporting and guiding the cans, and a stop on said run-way for holding a store of cans in check; of the standards 10, upright bell-crank levers pivoted to said standards and connected to said stop for disengaging the same, and anti-friction devices secured to said levers and projecting into the path of the cans transversely of said run-way, substantially as set forth.

9. In a can labeling machine, the combination with a runway for supporting and guiding the cans, and a stop on said runway for holding a store of cans in check, of upright pivoted levers connected with said stop for disengaging the same, and projections on said levers arranged to strike the can on its forward side and above its axis, substantially as set forth.

10. In a can labeling machine, the combination with a runway and a label holder, of a paste trough supported upon said runway, a wheel dipping into said trough, a paste belt running over said wheel and downward across the label holder, and a device for rotating said wheel, arranged at a distance above the runway in the path of and adapted to be raised by the rolling cans, substantially as set forth.

11. In a can labeling machine, the combination with a run-way and a lap pasting device; of a supplemental incline arranged in said run-way just beyond or below the lap pasting device, and a movable member connected with said lap pasting device for operating the same, arranged above and near the lower end of said supplemental incline and in the path of and adapted to be deflected by the can, substantially as set forth.

12. In a can labeling machine, the combination with a run-way and a lap pasting device; of a supplemental incline arranged in said run-way just below or beyond the lap pasting device, a pivoted lever connected with said lap pasting device for operating the same, arranged above and near the lower end of said supplemental incline and in the path of and adapted to be deflected by the can, substantially as set forth.

13. In a can labeling machine, the combination with a run-way and a lap pasting device; of a supplemental incline in said run-way just below or beyond said lap pasting device, pivoted arms or levers, a roller carried by said arms or levers and arranged in the path of the cans, below or beyond said supple-

mental incline, and a power transmitting device connecting said pivoted arms or levers with said lap pasting device, substantially as set forth.

5 14. In a can labeling machine, the combination with a run-way and label pasting devices; of pivoted levers or arms, rollers journaled in said arms above said run-way, and an endless belt running over said rollers and being ar-
10 ranged in the path of the cans, substantially as set forth.

15 15. In a can labeling machine, the combination with a runway and a lap pasting device, of pivoted levers or swinging arms adapted to swing toward each other, rollers journaled in said arms above said runway, a belt supported on said rollers, and a power transmitting device supporting one of said rollers and being connected to the lap pasting device, sub-
20 substantially as set forth.

2c 16. In a can labeling machine, the combination with a runway and the label pasting de-

vice, of a pair of movable rollers adapted to be forced upward by the passage of the cans thereunder, a belt arranged around said roll- 25 ers and supporting one of the same, and means for limiting the downward movement of the other of said rollers, whereby the weight of one of said rollers will automatically tighten said belt, substantially as set forth. 3c

17. In a can labeling machine, the combination with a runway and a lap pasting device, of pivoted levers or swinging arms arranged above said runway, rollers journaled in said arms, a belt supported on said rollers, and a 35 power transmitting device supporting one of said rollers, and being connected to the lap pasting device, substantially as set forth.

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