

No. 887,797.

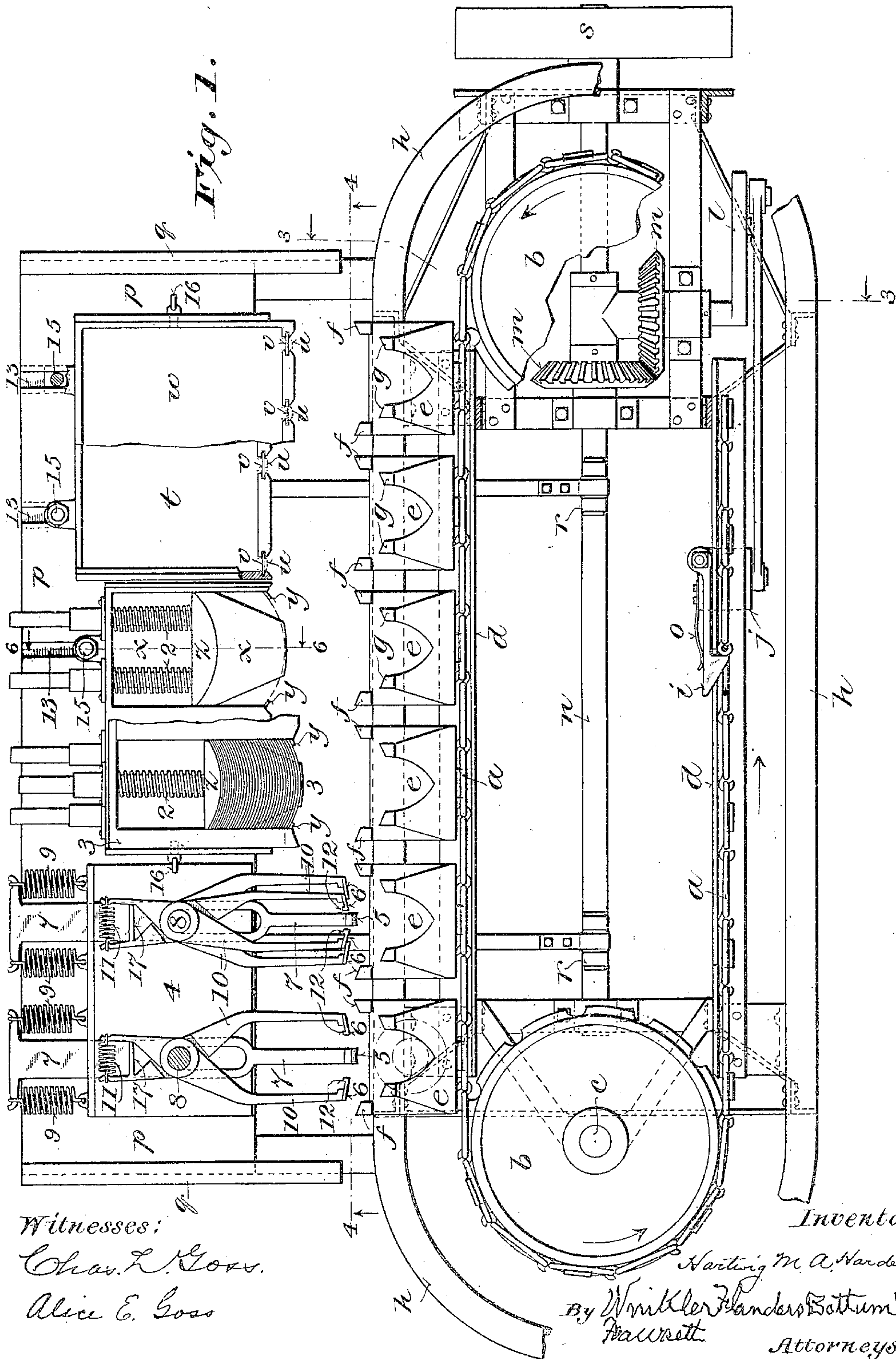
PATENTED MAY 19, 1908.

H. M. A. HARDERS.

LABELING MACHINE.

APPLICATION FILED AUG. 23, 1907.

4 SHEETS—SHEET 1.



Witnesses:

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Alice E. Goss

Inventor:

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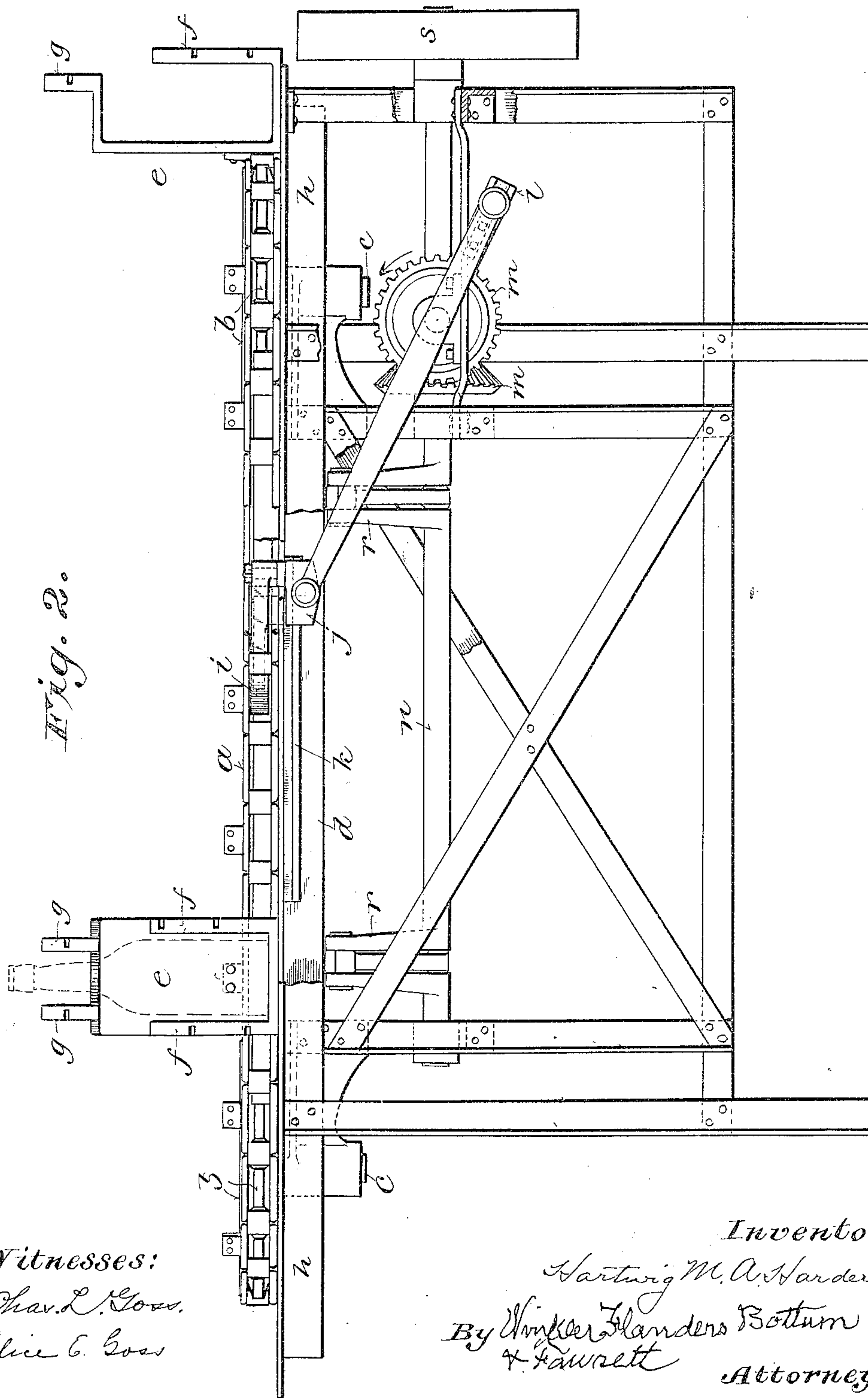
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

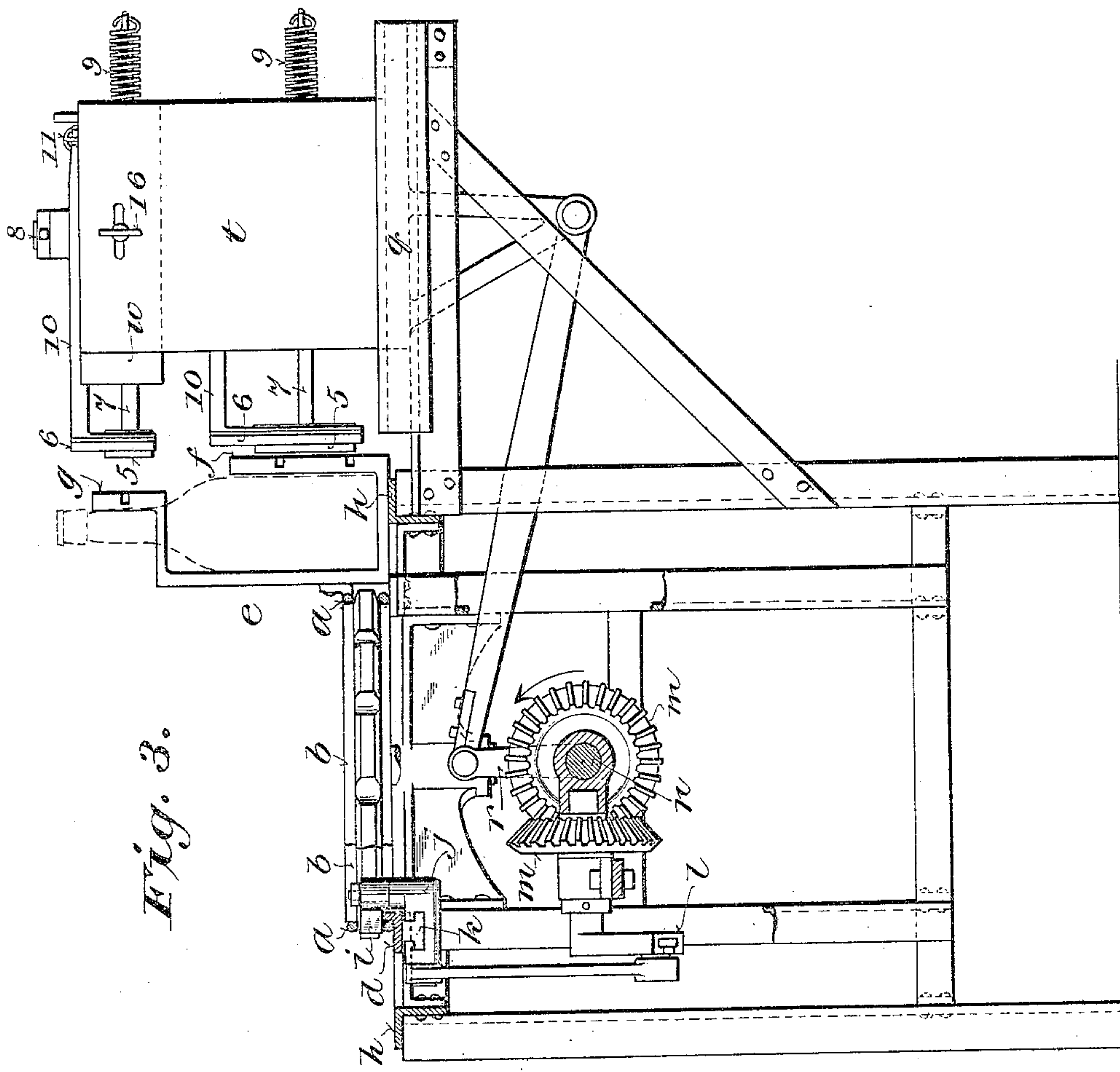


Fig. 3.

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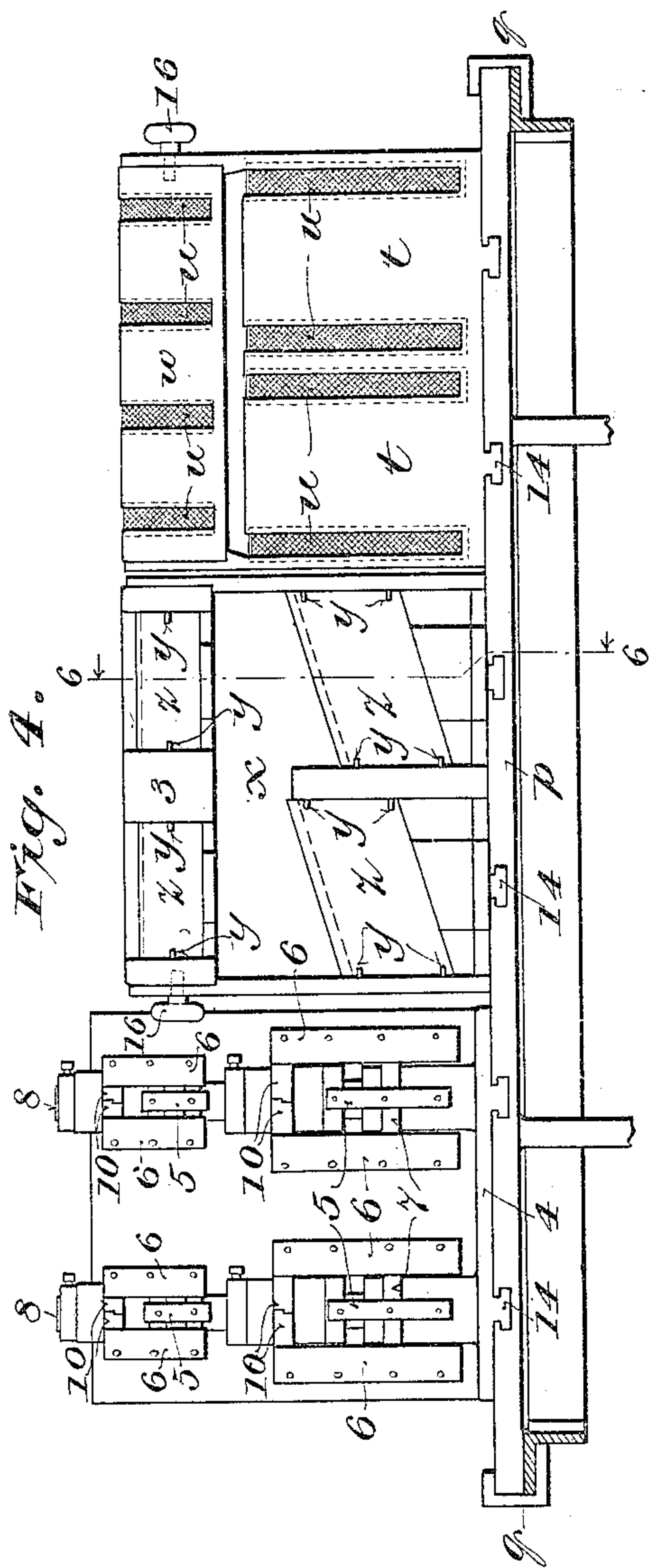


Fig. 4.

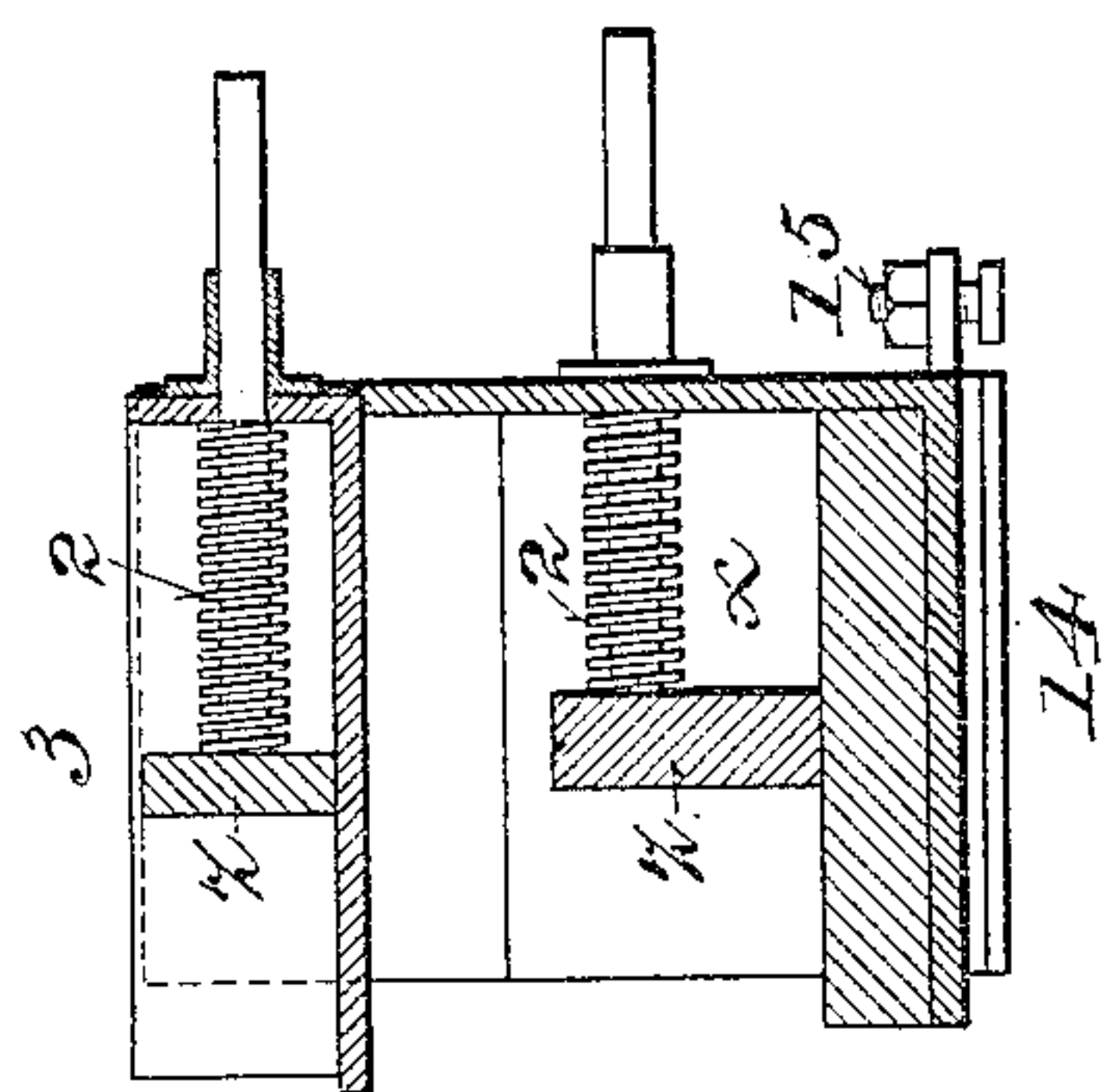
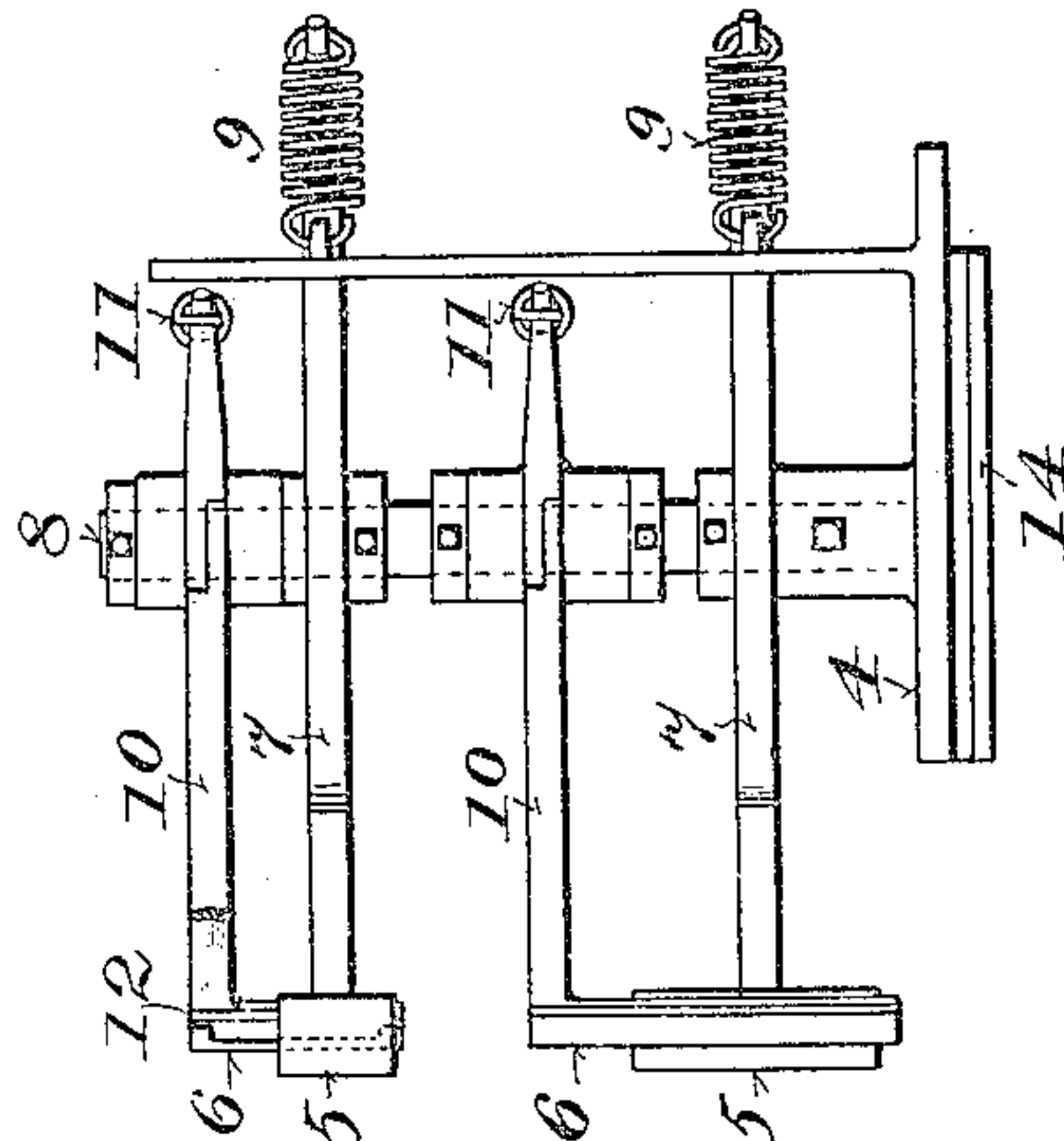


Fig. 5.



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# UNITED STATES PATENT OFFICE.

HARTWIG M. A. HARDERS, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO GUSTAV C. BECHERER, OF MILWAUKEE, WISCONSIN.

## LABELING-MACHINE.

No. 887,797.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed August 23, 1907. Serial No. 389,780.

*To all whom it may concern:*

Be it known that I, HARTWIG M. A. HARDERS, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Labeling-Machines, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

The main objects of this invention are to facilitate applying labels to bottles, cans and the like, and generally to improve the construction and operation of machines for this purpose.

It consists in certain novel features of construction and in the peculiar arrangement and combination of parts as hereinafter particularly described and summarized in the claims.

In the accompanying drawing like characters designate the same or similar parts in the several figures.

Figure 1 is a plan view of a machine embodying the invention, certain parts being omitted and other parts broken away; Fig. 2 is a front elevation of the machine, the paste and label holders and the wipers being omitted and parts broken away; Fig. 3 is an end elevation and vertical cross section on the line 3, 3, Fig. 1; Fig. 4 is a vertical longitudinal section on the line 4, 4, Fig. 1, showing the paste and label holders and the wipers in front elevation; Fig. 5 is a side elevation of the wiper mechanism; and Fig. 6 is a vertical section on the line 6, 6, Figs. 1 and 4 of the label holder.

For the purpose of illustration a machine specially designed for applying labels to bottles is shown, but with little or no change in the construction and arrangement of its parts it may be used for applying labels to cans, boxes and packages of other forms, and therefore the term "bottle" as herein used, is intended to include any form of receptacle or package to which labels may be applied by a machine of this class.

Referring to the drawing, and particularly to Figs. 1, 2 and 3, *a* is an endless chain or link belt running on sprocket wheels *b*, which are mounted on the upper ends of vertical shafts *c*. Between the sprocket wheels the chain or belt is supported and held in place by angle iron guides *d*. The chain or belt is provided at regular intervals on the

outside with bottle holders *e*, which are open on their outer sides and are formed or provided with paste receiving and applying surfaces or gummers *f* and *g*, arranged adjacent to the openings through which the labels are applied to the bottles. The gummers are vertically disposed and their paste receiving faces are preferably inclined, as shown in Fig. 1, towards the centers of the holders, which are held in a vertical position by the chain or belt *a* and a stationary track or way *h* on which they bear near their outer sides. The gummers *g* for neck labels are located nearer the chain or belt *a* than the gummers *f* for body labels.

The chain or belt *a* and the bottle holders *e* constituting an endless carrier, are moved forward or advanced intermittently by means of a beveled hook *i* pivoted to a slide or head *j*, which is mounted on a way *k* attached to the under side of the front guide *d*. The slide *j* is connected by a rod with a crank *l* driven by bevel gears *m* from the main shaft *n* arranged lengthwise of the machine below the carrier. The hook *i* is pressed by a spring *o* towards the adjacent side of the chain *a*, and is adapted when moved in one direction by the crank *l* to advance the carrier in the direction indicated by the arrow on Fig. 1 an interval corresponding with the throw of the crank, and when moved in the opposite direction, to yield against the spring *o* away from and ride over the chain without effect upon the carrier. The pin of the crank *l* is adjustable, to vary the intervals by which the carrier is advanced by the hook *i*.

A table or carriage *p* is mounted and movable on horizontal ways *q* transversely to the bottle carrier at the back or on one side of the machine. This carriage is connected on the under side by rods with cranks *r* on the shaft *n*, which is provided at one end with a driving pulley *s*. Upon the carriage or table *p* are adjustably mounted paste and label receptacles or holders and label applying mechanism.

In the present machine the paste receptacle, the label holder and the label applying mechanism are each designed to operate upon two bottle holders or bottles at a time, but may be made to operate simultaneously with any desired number of bottle holders and bottles.



The paste receptacle *t* is formed in the side towards the bottle carrier with vertical openings which are arranged to register with the gummers *f* of two bottle holders *e* when they are brought by the carrier into position opposite said receptacle. These openings are loosely spanned by cloth or other flexible and permeable closures *u*, which are held in place in the grooved edges of the openings by frames *v*, and through which the paste will soak and be supplied to the gummers. For supplying paste to the gummers *g* for neck labels, a separate receptacle or compartment *w* is mounted on the receptacle *t*, and on the side towards the carrier is formed with similar openings and provided with similar flexible and permeable closures *u*, which are located in advance of those belonging to the receptacle *t*.

For labeling bottles or the like having necks of different shapes and sizes, the relative locations of the gummers *f* and *g* on the bottle holders are varied and the upper paste receptacle or compartment *w* is made adjustable transversely to the bottle carrier with relation to the lower receptacle or compartment *t*.

Next to the paste receptacle is arranged the label holder or receptacle *x*, which in the present case is double, or has two compartments open on the side towards the bottle carrier and provided at suitable points along the margins of the openings with inwardly projecting label retainers *y*, which may be made of small wire or similar material. Each compartment of the label holder is provided with a semi-cylindrical or rounded follower *z*, having stems which are guided in the back of the holder.

Springs 2 tend to push the followers forward and hold the front or outer labels against the retainers *y* in position to be stuck to the pasted faces of the gummers *f* when carried into contact therewith by the advance movement of the label holder.

For neck labels or the like a supplemental receptacle or compartment 3, provided with retainers *y* and spring pressed followers *z*, is mounted upon the main holder or receptacle *x*, and is adjustable relative thereto towards and from the bottle carrier.

Next to the label holder the label applying mechanism is located on the movable table or carriage *p*. In the present instance this mechanism is duplicated so as to operate simultaneously on two bottles, and is mounted on a base plate or frame 4.

The mechanism for operation on each individual bottle comprises a yielding presser 5 for holding a label centrally against a bottle while the ends of the label are thrust off from the adjacent gummers *f* and are wrapped around and pressed against the bottle by laterally yielding flexible wipers 6.

Each presser 5 consists of a pad of suitable

material attached to the vertically extended end of a longitudinally movable horizontal bar 7 which is slotted lengthwise and guided between collars or shoulders on a vertical post 8 attached to the plate or frame 4. Springs 9 tend to thrust the bars 7 forward and to hold the presser pads 5 normally in advance of the wipers 6.

The wipers 6 consist of strips of rubber or other elastic material attached in pairs to the vertically extended ends of horizontal arms 10 on opposite sides of each presser. These arms 10 are pivotally mounted upon the posts 8 between collars or shoulders, and are connected by springs 11 which tend to force the opposing wipers 6 together, the inward movement of the wipers being limited by stops 17.

The elastic or flexible wipers 6 project inwardly beyond the faces or parts of the arms 10 to which they are attached and are formed or provided on the back next to their inner edges with lugs or projections 12 which are arranged to bear against opposing bottles above and below the labels and hold the wipers when they are drawn backward out of contact with the labels, thus preventing the wipers as they are withdrawn, from rubbing the labels off from the bottles or out of place.

For applying neck labels simultaneously with body labels, an extra presser 5 and pair of wipers 6 are mounted on each post 8 above those for applying body labels, as shown in Figs. 1, 4 and 5, the presser and wipers for neck labels being usually somewhat shorter and the wipers standing normally closer together than the presser and wipers for body labels.

The table or carriage *p* is formed as shown in Figs. 1 and 4, with transverse undercut grooves 13, and the paste receptacle *t*, label holder *x* and base plate or frame 4, are formed or provided on the under sides with tongues 14, movably fitting in said grooves, said paste receptacle, label holder and base plate with the label applying mechanism mounted thereon being fastened in the desired positions on said table or carriage by bolts and nuts 15.

The paste receptacle or compartment *w* and the holder 3 for neck labels are fastened in place on the receptacle *t* and holder *x* respectively by screws 16.

The machine herein shown and described operates as follows: The shaft *n* being rotated by a belt applied to the pulley *s* and turning in the direction indicated by the arrows, intermittently advances the bottle carrier through the medium of the hook *i* and crank 1 by intervals which will successively move two bottle holders *e* from a position opposite the paste receptacle *t* to a position opposite the label holder *x* and then to a position opposite the label applying mechanism



on the base plate or frame 4. During the intervals that the bottle carrier and holders are at rest, the table or carriage *p* with the paste receptacles, label holders and label applying mechanism are moved forward to the opposing bottle holders *e* through the medium of the cranks *r*. The bottles being placed in the holders *e* on the front side of the machine, are first brought opposite the paste receptacles, and while they dwell in this position, the paste receptacles are advanced and apply paste through the cloth or permeable closures *u* to the gummers *f* and *g*. The paste receptacles are then withdrawn and the carrier advances the bottles in the holders to which paste has thus been applied, into a position opposite the label holders. The carrier dwelling in this position, the table or carriage *p* is again advanced with the devices mounted thereon, bringing the front or outer labels of the stacks or bunches contained in the holders *x* and 3 against the pasted faces of the opposing gummers *f* and *g*, to which they stick, while the carriage is moved backward leaving upon said gummers single labels spanning the spaces between them adjacent to the bodies and necks of the bottles contained in the associated holders *e*. During the last mentioned operation paste has been applied to the faces of the gummers *f* and *g* of the next two succeeding bottle holders *e*. The bottle carrier now advances another interval carrying the two holders *e* upon which labels have been left, opposite the label applying mechanism on the base plate or frame 4. The carriage *p* again advancing, the pressers 5 thrust and hold said labels centrally against the bodies and necks of the adjacent bottles, while the wipers 6 pull the ends of the labels off from the gummers and wrap them smoothly around the bottles, to which they are stuck by the paste taken from the gummers. In the return or backward movement of the label applying mechanism the flexible wipers 6 are bent so as to bring the projections 12 against the surface of the bottles above and below the labels, and in this way the wipers are held out of contact with the labels and are prevented from rubbing them off from the bottles to which they have just been pasted or from crumpling or otherwise affecting them. During the last mentioned cycle of operations, paste has been applied to the gummers of a third pair of bottle holders and labels have been applied to the gummers of the second pair of holders, and in this manner paste and labels are applied to the gummers of successive pairs of bottle holders *e*, and the labels are then transferred to and pasted on the bottles, the paste receptacles, label holders and label applying mechanism coöperating simultaneously in a machine of the design herein shown with three pairs of bottle holders *e* at every advance of the bottle carrier. The bottles

to which labels have been applied are then removed from the holders *e* on the front side of the machine and their places are supplied with other bottles which are to receive labels.

It will be understood that the carrier chain or belt *a* is to be provided its entire length with uniformly spaced bottle holders *e* of which a few only are shown in the drawing.

Various changes in the details of construction and arrangement of parts of the machine may be made to adapt it to label bottles and packages of various sizes and shapes or to operate on a greater or less number of bottles or packages at a time without materially affecting its mode of operation and without departing from the principle and intended scope of the invention.

I claim:

1. In a labeling machine the combination of an endless carrier provided with bottle holders, means for moving said carrier intermittently, paste and label receptacles and wipers movable transversely to the travel of said carrier, and means for moving said receptacles and wipers forward and back to simultaneously apply paste to one holder, deliver a label to another holder to which paste has been applied and press a label to a bottle in still another holder to which both paste and a label have been applied, substantially as described.

2. In a labeling machine the combination of an endless carrier provided with bottle holders which have lateral openings and gummers adjacent to said openings, means for moving said carrier intermittently, a paste receptacle movable transversely to the carrier and having openings which register with the gummers of said holders one after another and which are spanned by flexible and permeable material, and means for moving said receptacle forward and back to and from said holders, substantially as described.

3. In a labeling machine the combination of an endless carrier provided with bottle holders which have openings on one side and gummers arranged in different planes adjacent to said openings for body and neck labels, means for moving said carrier intermittently, a paste receptacle movable transversely to the carrier and having openings arranged in different planes to register with the body and neck gummers of one holder after another, said openings being spanned by flexible and permeable material, and means for moving said receptacle forward and back to and from said holders, substantially as described.

4. In a labeling machine the combination of an endless carrier provided with bottle holders which have openings on one side and gummers arranged adjacent to said openings for body and neck labels, means for moving said carrier intermittently, a paste receptacle movable transversely to the carrier and



comprising compartments one of which is adjustable relative to the other transversely to the carrier, said compartments having openings arranged to register with the body and neck gummers of one holder after another and spanned by flexible and permeable material, and means for moving said receptacle forward and back to and from said holders, substantially as described.

10 5. In a labeling machine the combination of an endless carrier provided with bottle holders which have lateral openings and gummers at the sides of said openings, means for moving said carrier intermittently, a label holder movable transversely to said carrier and having an opening on the side adjacent thereto to receive the gummers of the opposite bottle holder, and a follower for pushing the labels towards said opening, and means for moving the label holder forward and back to and from opposite bottle holders one after another, substantially as described.

6. In a labeling machine the combination of an endless carrier provided with bottle holders which have lateral openings and gummers at the sides of said openings, means for moving said carrier intermittently, a label holder movable transversely to said carrier and having an opening to receive the gummers of the opposite bottle holder, a follower for pushing the labels towards said opening and label retainers, the gummers being notched to clear said retainers, and means for moving the label holder forward and back to and from opposite bottle holders one after another, substantially as described.

7. In a labeling machine the combination of an endless carrier provided with bottle holders which have lateral openings and gummers arranged in different planes adjacent to said openings for body and neck labels, means for moving said carrier intermittently, a label holder movable transversely to said carrier and having compartments for body and neck labels with openings in the sides towards the carrier to receive the gummers of an opposite bottle holder and followers for pushing the labels towards said openings, and means for moving the label holder forward and back to and from the bottle holders as they are brought by the carrier one after another opposite the label holder, substantially as described.

8. In a labeling machine the combination of an endless carrier provided with bottle holders which have lateral openings and gummers arranged in different planes adjacent to said openings, means for moving said carrier intermittently, a label holder movable transversely to said carrier and having compartments for body and neck labels with openings in the sides towards the carrier to receive the gummers of an opposite bottle holder and followers for pushing the labels towards said openings, one of said com-

partments being adjustable relative to the other transversely to the carrier, and means for moving the label holder forward and back to and from the bottle holders as they are brought one after another by the carrier into position to receive labels from the label holder, substantially as described.

9. In a labeling machine the combination of an endless carrier provided with bottle holders which have lateral openings and gummers at the sides of said openings, means for moving said carrier intermittently, label applying mechanism movable transversely to said carrier and comprising a yielding presser adapted to hold a label against an opposing bottle between the gummers to which the label is stuck, and laterally yielding flexible wipers adapted to push the ends of the label off from the gummers and spread them smoothly upon the bottle, and means for moving said label applying mechanism forward and back to and from the bottle holders as they are brought one after another into position opposite the said mechanism, substantially as described.

10. In a labeling machine the combination of an endless carrier provided with bottle holders having lateral openings and gummers at the sides of the openings, means for moving said carrier intermittently, label applying mechanism movable transversely to said carrier and comprising a yielding presser for holding a label against an opposite bottle and laterally yielding flexible wipers adapted in advancing to thrust a label from adjacent gummers and spread it upon the accompanying bottle, said wipers having projections on their rear inner edges arranged to bear against the bottle outside of the label and to hold the wipers during their backward movement out of contact with the label, and means for moving said mechanism forward and back to and from the bottle holders as they are brought one after another by the carrier into position opposite the presser and wipers, substantially as described.

11. In a labeling machine the combination of an endless carrier provided with bottle holders having openings and gummers adjacent to said openings, means for advancing said carrier intermittently, a carriage movable transversely to the carrier, means for moving said carriage forward and back to and from opposite bottle holders, and a paste receptacle, a label holder and label applying mechanism mounted on said carriage and adjustable thereon transversely to the carrier, substantially as described.

12. In a labeling machine the combination of an endless chain carrier provided with bottle holders which are open and have gummers on one side, a way adjacent to and parallel with one side of the chain, a slide mounted on said way, a beveled hook pivoted to said slide, a spring pressing said hook to-



wards the carrier chain, a driving crank connected with said slide, and paste and label receptacles and label applying mechanism movable transversely to said carrier and  
5 adapted to apply paste to the gummers, to deliver labels to the pasted gummers and to transfer labels from the gummers to bottles as the bottle holders are brought intermittently one after another by the carrier into  
10 positions opposite said paste and label receptacles and the label applying mechanism, substantially as described.

13. In a labeling machine the combination of an endless carrier provided with bottle  
15 holders which have lateral openings and gummers arranged in different planes at the sides of said openings for body and neck labels, means for moving said carrier intermittently, means for applying paste to said gummers,  
20 means for feeding labels one at a time to the pasted gummers, and mechanism for transferring labels from the gummers to bottles in the holders movable forward and back transversely to the said carrier and comprising  
25 two pairs of laterally yielding flexible wipers, and intermediate yielding pressers which

project normally between and in advance of the wipers, substantially as described.

14. In a labeling machine the combination of an endless carrier provided with bottle  
30 holders having gummers at the sides of lateral openings therein, means for applying paste to said gummers, means for supplying labels one at a time to the pasted gummers, and mechanism for transferring the labels  
35 from the gummers to bottles in said holders movable forward and back transversely to said carrier and comprising pivotally connected arms, flexible wipers attached to said  
40 arms, a spring tending to force said wipers together and a yielding presser consisting of a longitudinally movable bar, a pad attached to the end of the bar between the wipers, and  
45 a spring tending to hold said pad in advance of the wipers, substantially as described.

In witness whereof I hereto affix my signature in presence of two witnesses.

HARTWIG M. A. HARDERS.

Witnesses:

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FRANK H. KURTZ.