

No. 624,421.

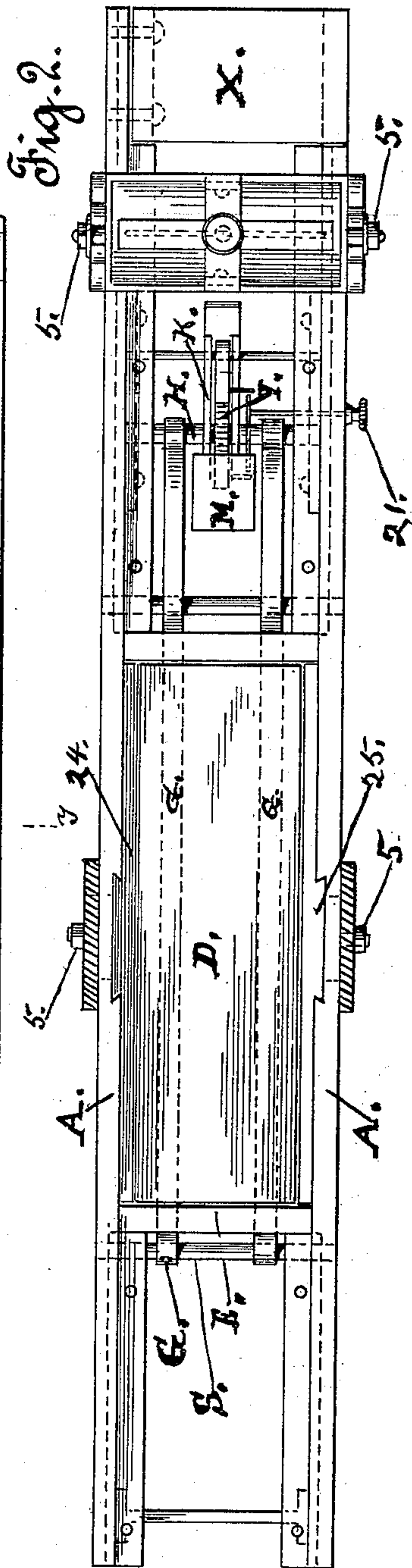
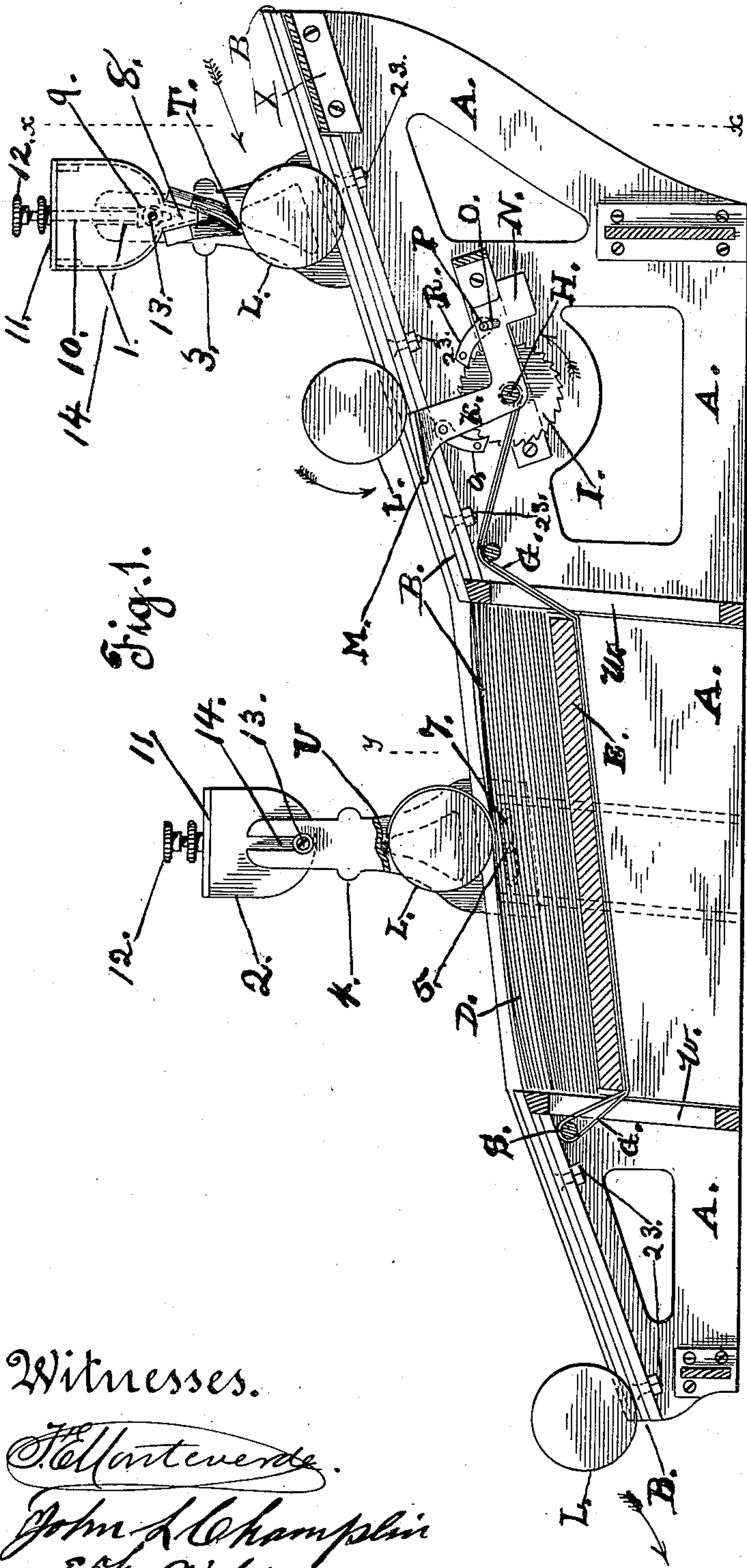
Patented May 2, 1899.

W. D. AYERS.
CAN LABELING MACHINE.

(Application filed Nov. 15, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses.

J. H. Harten

John A. Champlin
E. H. Aiken

Inventor.
Wilson D. Ayers

No. 624,421.

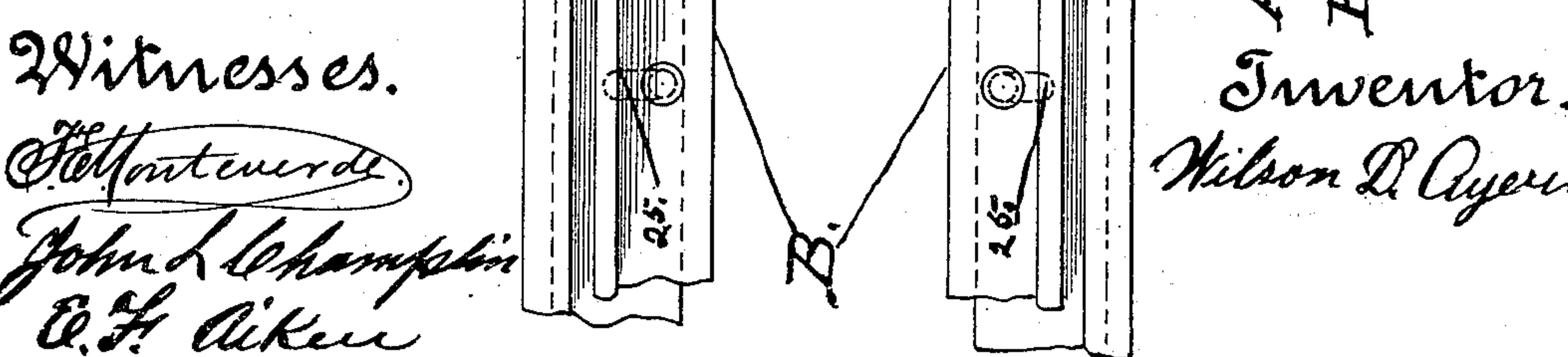
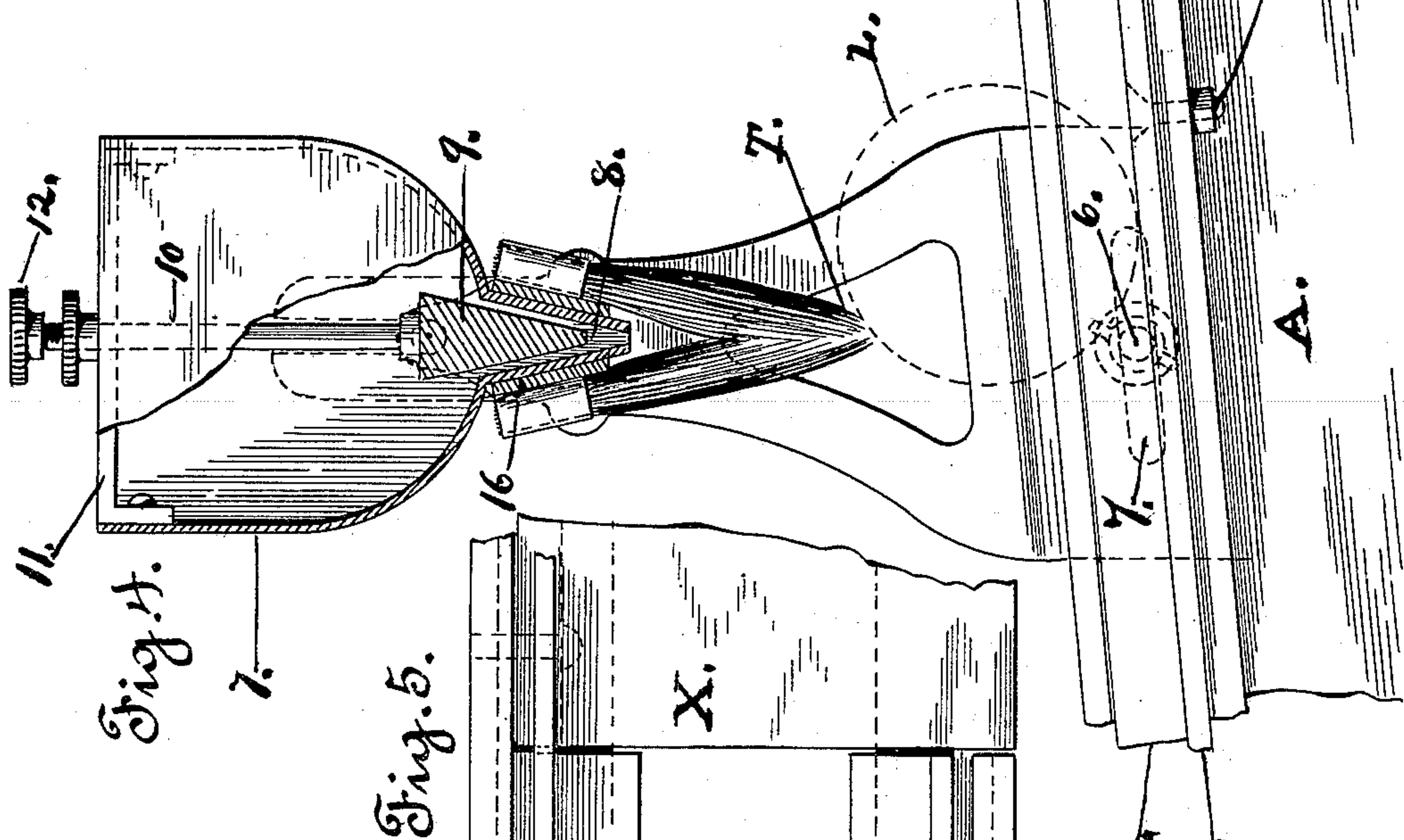
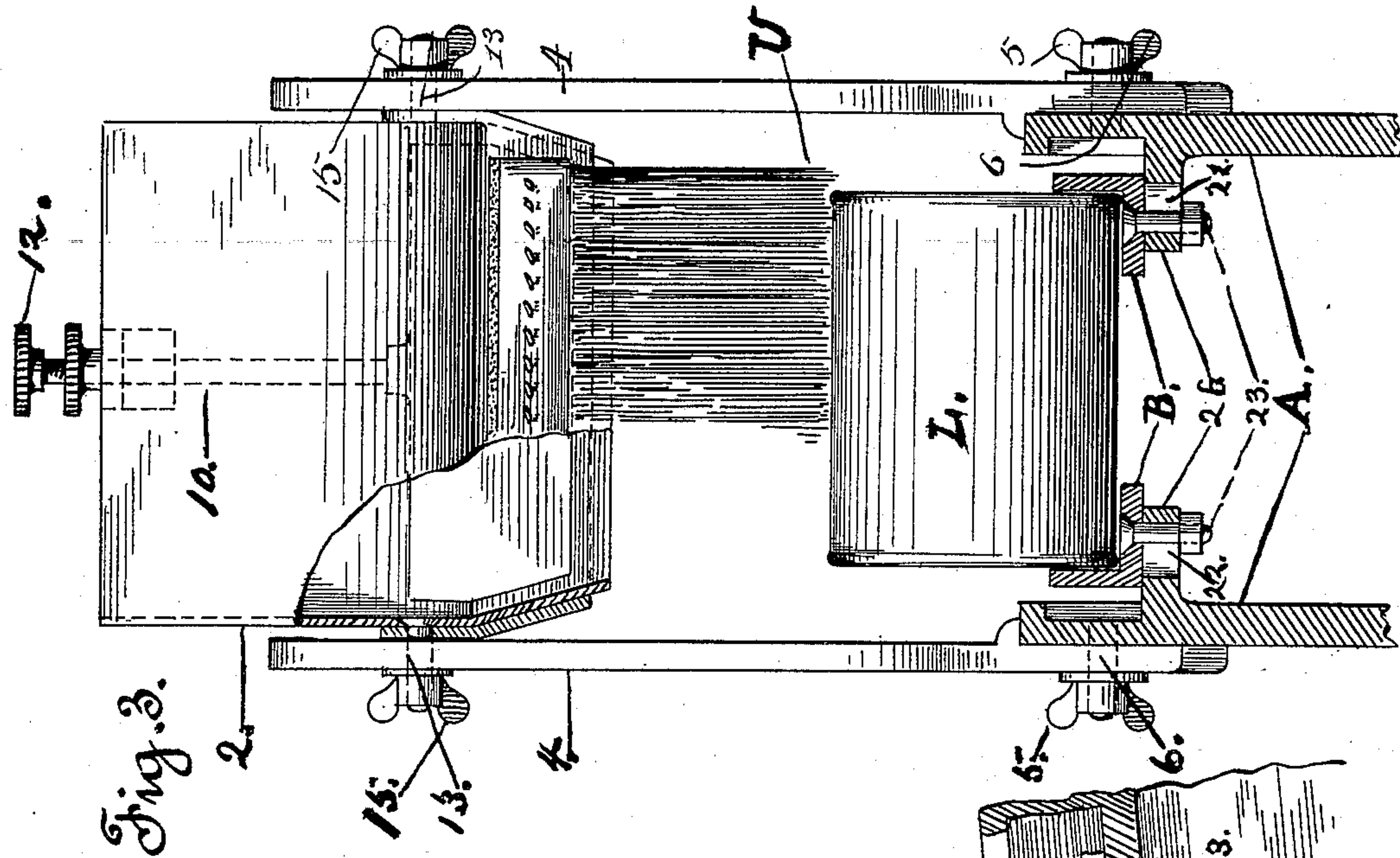
Patented May 2, 1899.

W. D. AYERS.
CAN LABELING MACHINE.

(Application filed Nov. 15, 1897.)

(No Model.)

3 Sheets—Sheet 2.



2 Witnesses.
W. H. Fontenay
John L. Chapman
E. F. Aiken

Inventor.
Wilson D. Ayers

No. 624,421.

Patented May 2, 1899.

W. D. AYERS.
CAN LABELING MACHINE.

(Application filed Nov. 15, 1897.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 6.

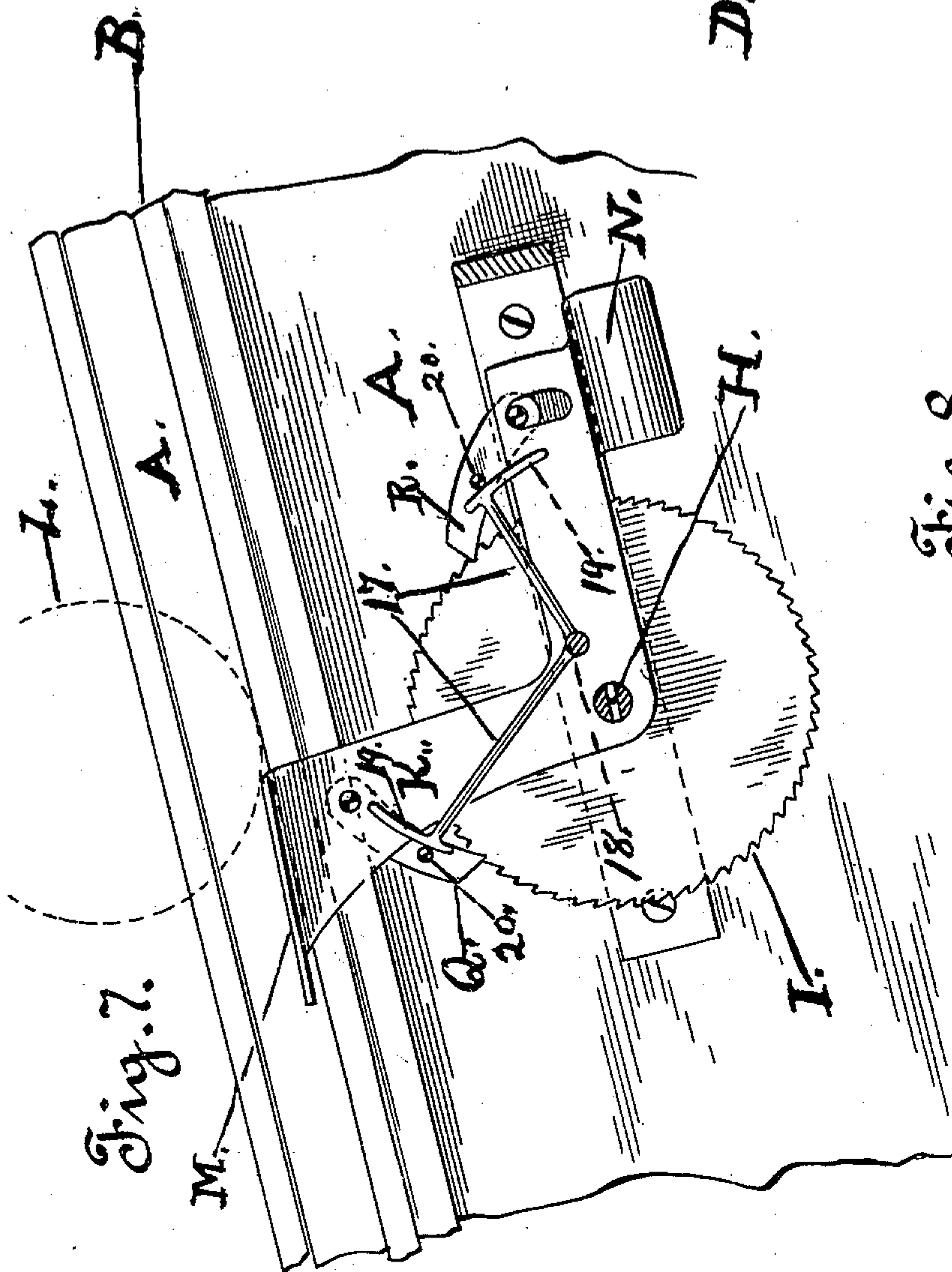
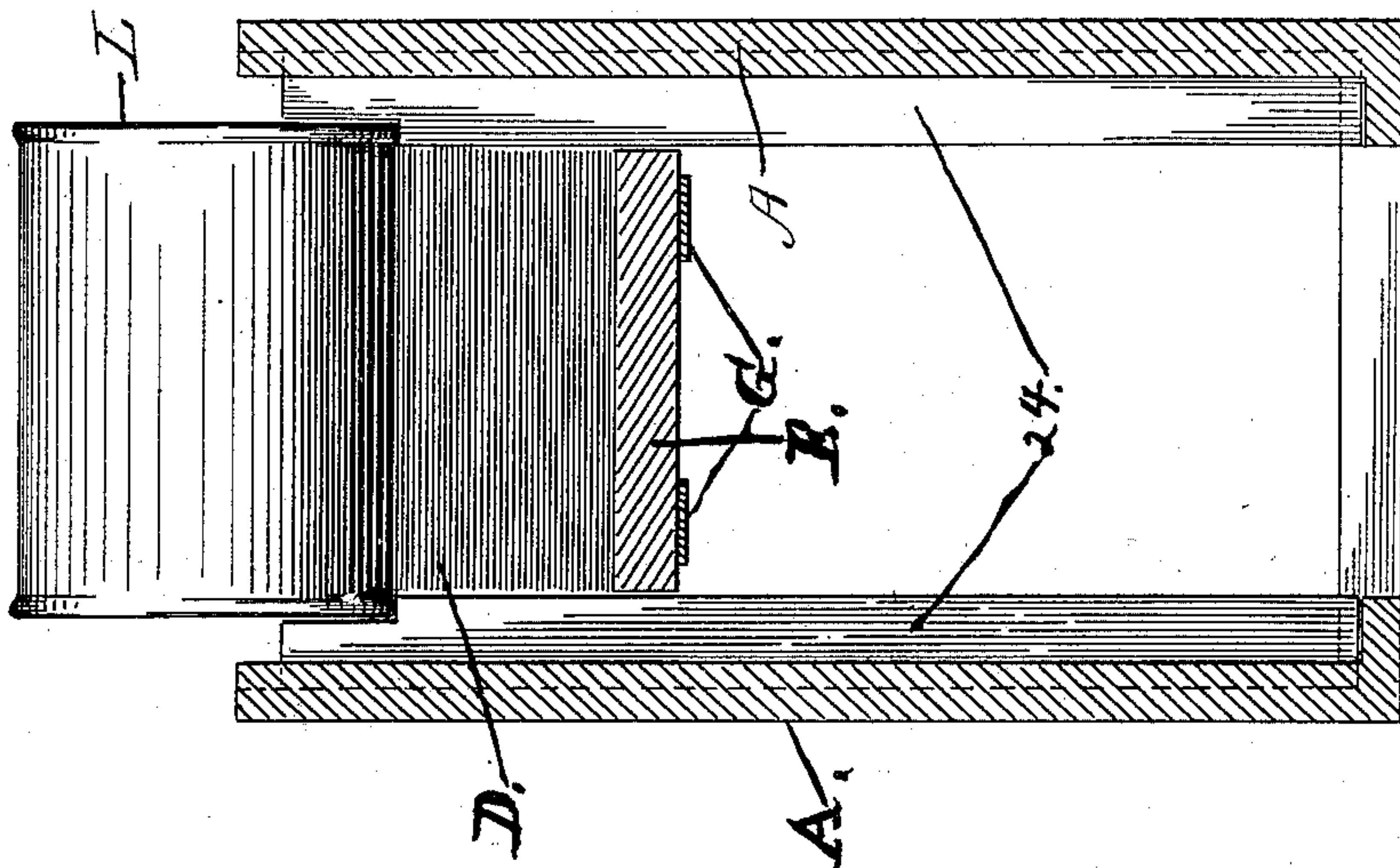
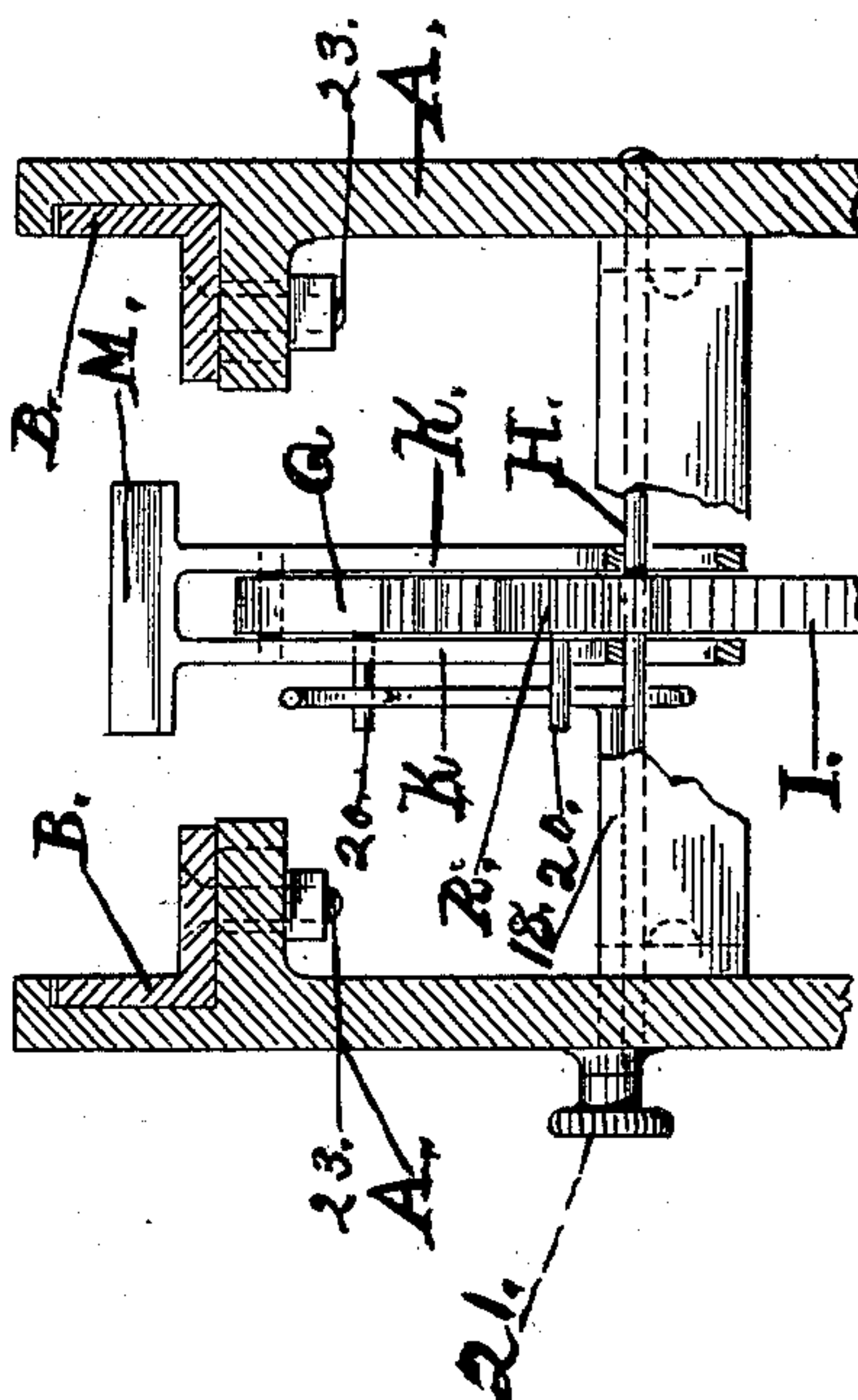


Fig. 8.



Witnesses.
John H. Champlin
E. H. Aiken

Inventor.
Wilson D. Ayers

UNITED STATES PATENT OFFICE.

WILSON D. AYERS, OF ALAMEDA, CALIFORNIA, ASSIGNOR TO JOHN L. CHAMPLIN AND EDWARD F. AIKEN, OF OAKLAND, CALIFORNIA.

CAN-LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 624,421, dated May 2, 1899.

Application filed November 15, 1897. Serial No. 658,584. (No model.)

To all whom it may concern:

Be it known that I, WILSON D. AYERS, a citizen of the United States, residing at Alameda, in the county of Alameda, State of California, have invented a new and useful Machine for Labeling Cans, of which the following is a specification.

My invention relates to the rapid and automatic pasting of labels upon cans of all kinds and sizes.

I have embodied my invention in a mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the entire machine. Fig. 2 is a plan view of the machine. Fig. 3 is an end elevation showing the paste-box cut away to illustrate the manner of adjusting the brush to conform to the different-sized cans, the valve which controls the supply of paste, and the adjustment of the sides to receive the different sizes of cans. Fig. 4 is a side view of the same. Fig. 5 is a broken plan of the platform where the cans are received and a section of the rails and manner of adjustment with a portion of the opposite rail on the platform. Fig. 6 is a vertical section of the label-box, showing the platform or label-bed as supported by the flexible bands. Fig. 7 is a side view of the mechanism for operating the label-bed. Fig. 8 is an end view of the mechanism shown in Fig. 7.

Similar letters and numerals refer to similar parts throughout the several views.

In this machine I provide a support for the cans and operating mechanism consisting of a box or frame A, having an inside projection from the sides which make an inclined track B, on which the cans roll down by gravity alone. This track B is made in three sections on each side of the box, the first section being straight from the upper end of the box to the labeling device. The second section of the track B, which is over the label-box, has downwardly-turned ends, Fig. 1. The third section is straight and inclined like the first part. The object of turning the ends of the intermediate section down is to have them out of the way of the can as it meets the label and to keep the labels in place while the can passes over them.

The labels are kept in place by two transverse frames W, which with the sides of the frame A form a label-compartment, their upper ends conforming to the incline of the track. These frames are also a support for the sides of the box A.

At the inlet end of the main frame is a platform X, to which the sides are bolted and which acts as a receptacle for the cans before starting down the track.

In the label-compartment, as shown in Fig. 1, is a platform or bed E, resting on bands G. The labels carried by this bed are made to rise and meet the cans by flexible bands operated by devices shown in Figs. 7 and 8. A shaft H carries a fixed ratchet-wheel I, the shaft being journaled in the sides of box A. The ratchet-wheel I is operated by a pawl Q, attached to the end of an L-shaped lever K, which is pivoted loosely upon the shaft H. The wheel is caused to revolve by the weight of the can L as it passes over a plate M, connected with the lever K. Said lever K is forked to inclose the ratchet-wheel, as shown in Fig. 8, and its two arms are connected together by the plate M. A weight N is secured to the lower end of the lever to return it to normal position after each depression of the plate M. In the lower end of the lever K is a slot O, through which passes a bar P, the ends of the bar being secured in the main frame. On the bar P, working between the two sides of the lever K, is a holding-pawl R, engaging with the ratchet-wheel I. The weight of the passing can upon the plate M causes the ratchet-wheel to turn, allowing pawl R to seat itself in the next tooth and to hold the ratchet-wheel stationary while the lever K is falling back. The effect of the above-described movement of the ratchet-wheel and pawls is to wind up one end of the bands G on the axle of the ratchet-wheel, thereby raising the labels to meet the can as it passes down the track.

The bands G are tapes of sufficient length to raise the bed E and the labels upon it the required distance. The other ends of bands G are attached to a bar S, fastened to the sides of the box A just underneath the track on which the cans roll. As the bands are

wound upon the shaft H they are gradually shortened, thus raising the labels D to meet the rolling cans in such a way that the upper label is always in position to be picked up by the can.

Mounted on the main frame are two boxes 1 and 2 for holding paste to secure the labels to the cans. The first box 1 is situated between the label-bed and the inlet end of the machine. The other box 2 is placed over the center of the label-bed. These boxes are held in place by upright pieces 3 and 4, attached to the sides of the frame. They are movable by loosening a thumb-screw 5 on a bolt 6, which passes through a slot 7. The paste-boxes have a V-shaped discharge 8 running lengthwise through the center and extending below the bottom of the boxes 1 and 2. To the inside of the slot 8 last mentioned is fitted a V-shaped valve 9, attached to a bolt 10, which passes up through a bar 11, fastened across the top of the box. The bolt 10 is adjustable by the action of the thumb-screw 12, attached to its upper end. This enables the V-shaped valve 9 to be raised or lowered, which action controls the supply of paste to the brushes.

The boxes 1 and 2 are attached to the upper end of the before-described uprights 3 and 4 by bolts 13, which are attached to each end of the boxes and which pass through vertical slots 14 in the uprights and are held in position by the thumb-nuts 15. The boxes are thus rendered vertically adjustable.

Each paste-brush T and U consists of a double brush made by fastening two brushes, one on each side of a frame 16, which is made to fit outside the V-shaped discharge 8, extending below the bottom of the paste-boxes. The ends of the brushes are thereby brought together, causing them to operate as a single brush, Fig. 4. The paste is fed to the center of the brush from the V-shaped discharge 8, extending down between the brushes.

In connection with the ratchet-wheel *i* and lever K, which is the moving power of this machine, I employ a device for raising the pawls from the ratchet-wheel to permit a rapid lowering of the label-platform. This device consists of two arms 17, projecting from a pivoted bar 18. Attached to the ends of these arms 17 are curved pawl-lifters 19, normally in contact with a pin 20, projecting from the side of each pawl Q and R. When the bar 18 is turned by the thumb-piece 21, the lifters 19 press upon the pins 20, raising both pawls at the same time, releasing the ratchet-wheel *i*, and allowing the bands to unwind from the shaft H.

In Figs. 3 and 5 are shown means for adjusting the machine to fit the different-sized cans. The track for the cans is made adjustable and rests upon flanges 26, projecting from the inside of the box A and having a slot 22, through which a bolt 23 passes and by which the track can be opened or closed.

Figs. 2 and 6 show an inside casing 24 of

the label-box, which is removably held by a dovetailed slot and tongue 25, so that different thicknesses of casing may be introduced.

In operating my labeling-machine the proper adjustments are first made to adapt it to the size of the cans to be labeled—that is, the tracks are adjusted to the length of the cans and the label-compartment to the width of the labels in the manner before described. The paste-boxes and brushes are also adjusted vertically to the diameter of the can and also to its circumference—that is to say, the distance between the boxes 1 and 2 is so regulated that the two brushes apply their paste at the same point, one upon the can itself and the other upon the end of the partly-secured label, which is overlapped by the free end of such label. The cans introduced upon the platform X roll by gravity under the brushes T and receive a line or narrow surface of paste. The can then passes over and depresses the plate M and lever K, actuating the ratchet mechanism one tooth, and thereby winding up enough of the bands G to raise the label-bed and labels by the thickness of one label. The paste-surface on the can picks up the front end of the uppermost label and carries it along beneath the brush U, which applies another paste-surface to the attached end of the label. Continuing its motion the new paste-surface is brought in contact with the free end of the same label, which is picked up, and the labeling is completed, the labeled can passing out of the discharge end of the runway. This operation is continued with successive cans until the labels are exhausted, when a new supply is piled upon the label-bed after throwing out the pawls and permitting the label-bed to drop at one motion to the full extent permitted by the bands which support it.

It will be noted that the operation of the machine is entirely automatic and that no power is applied, since the gravity of the cans alone operates the entire mechanism.

The machine is exceedingly rapid in operation, and the simplicity of its construction is in marked contrast to the complicated mechanisms usually employed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a labeling-machine, the combination with a runway, of a label-bed, a flexible support for the label-bed, and means operated by the passage of cans for intermittently drawing upon and shortening said support, whereby the label-bed is raised.

2. In a labeling-machine and in combination a runway, a label-bed, a flexible support for the label-bed, means for intermittently drawing upon and shortening said support in order to raise the label-bed, and means for releasing said support, whereby the label-bed is permitted to drop suddenly by the lengthening of said support.

3. In a can-labeling machine the combina-

tion with a runway for cans, of a label-bed, a flexible support for the label-bed, a shaft to which said support is connected, and means operated by the passage of a can for winding said flexible support upon said shaft and thereby raising the label-bed.

4. In a can-labeling machine the combination with a runway for cans, of a label-bed, a flexible support for said bed, a shaft to which said support is connected, a ratchet-wheel fixed on said shaft and a lever loose on said shaft, projecting into the path of the traveling cans and carrying pawls.

5. In a can-labeling machine, and in combination a runway for cans, a label-bed suspended by flexible bands, means operated by the passage of a can for winding up said bands and lifting the label-bed, and means for disengaging said operating means, whereby the label-bed is permitted to drop to the extent permitted by said bands.

6. In a can-labeling machine and in combination, a runway for cans, a label-bed suspended by flexible bands, a winding-shaft to which one end of said bands is connected, a ratchet-wheel on said shaft, a pivoted lever having operating and holding pawls, and projecting into the path of the cans, and a weight on said lever for returning it to normal position after each depression by a can.

7. In a can-labeling machine and in combination, a runway for cans, a label-bed supported by bands, a winding-shaft to which said bands are connected, a ratchet-wheel on

said shaft, a pivoted lever carrying pawls and projecting into the path of the traveling cans, and a pawl-lifter for throwing said pawls out of engagement with said ratchet and thereby permitting said label-bed to drop.

8. In a can-labeling machine, a runway for the passage of cans, a label-bed, flexible bands fixed at one end and passing beneath the bed to support it, winding mechanism connected to the free ends of said bands, and means actuated by the passage of cans for operating said winding mechanism.

9. In combination with a paste-box having a V-shaped discharge-passage, two brushes one attached to each side of said passage whereby said brushes converge and both receive paste from the intermediate discharge-passage.

10. In a can-labeling machine the combination with an adjustable paste-box having a V-shaped discharge-passage, of a V-shaped valve fitted to said passage, and separate brushes converging below said discharge-passage.

11. The combination with the paste-box having the tapering or V-shaped discharge-passage, of a brush-head, secured to each side of said passage, and a separate brush secured in each brush-head so as to converge below the said discharge-passage.

WILSON D. AYERS.

Witnesses:

JOHN L. CHAMPLIN,
E. F. AIKEN.