

J. J. HUMMEL.
MAGAZINE FOR TYPE SETTING MACHINES.
APPLICATION FILED OCT. 18, 1910.

997,130.

Patented July 4, 1911.

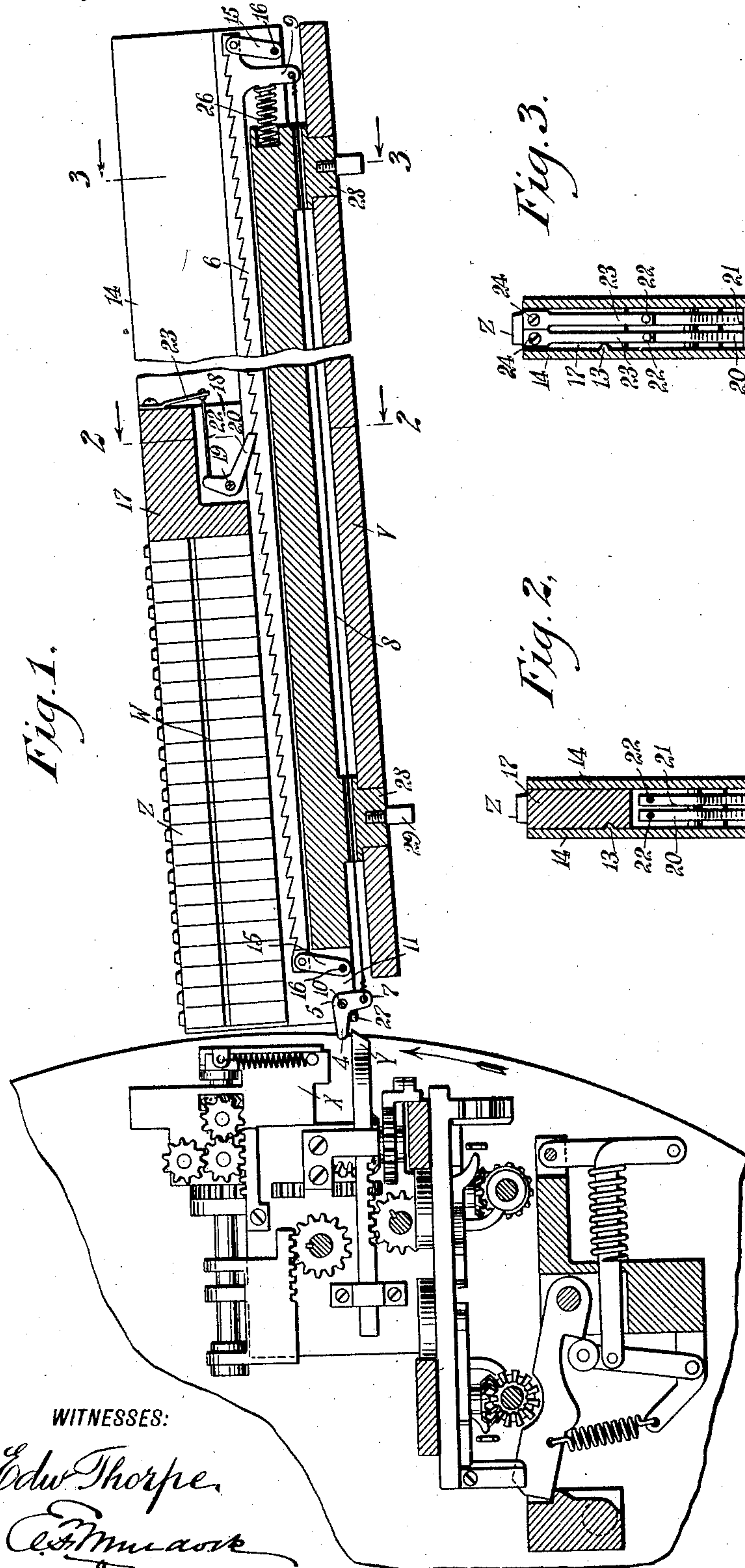


Fig. 1.

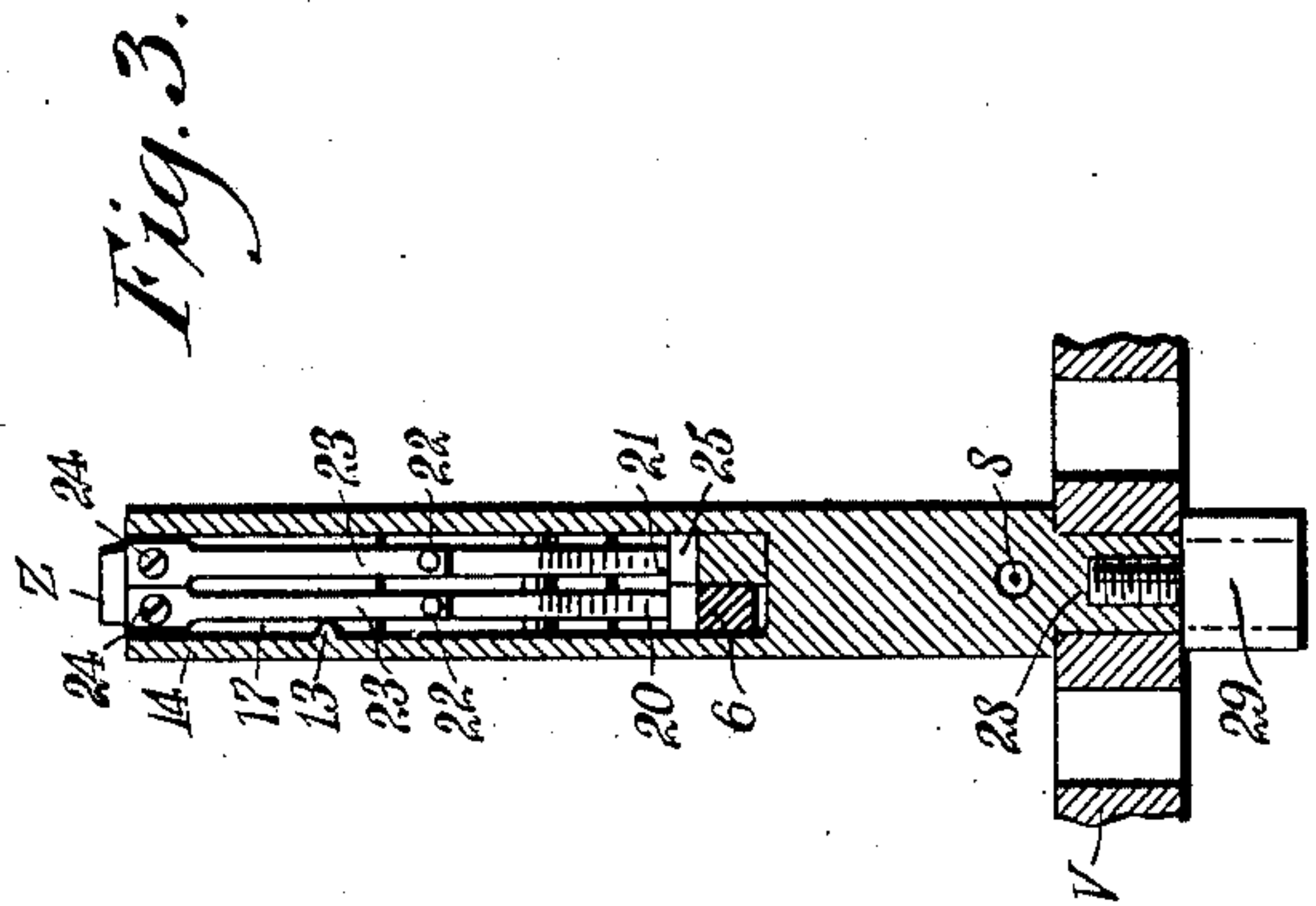


Fig. 3.

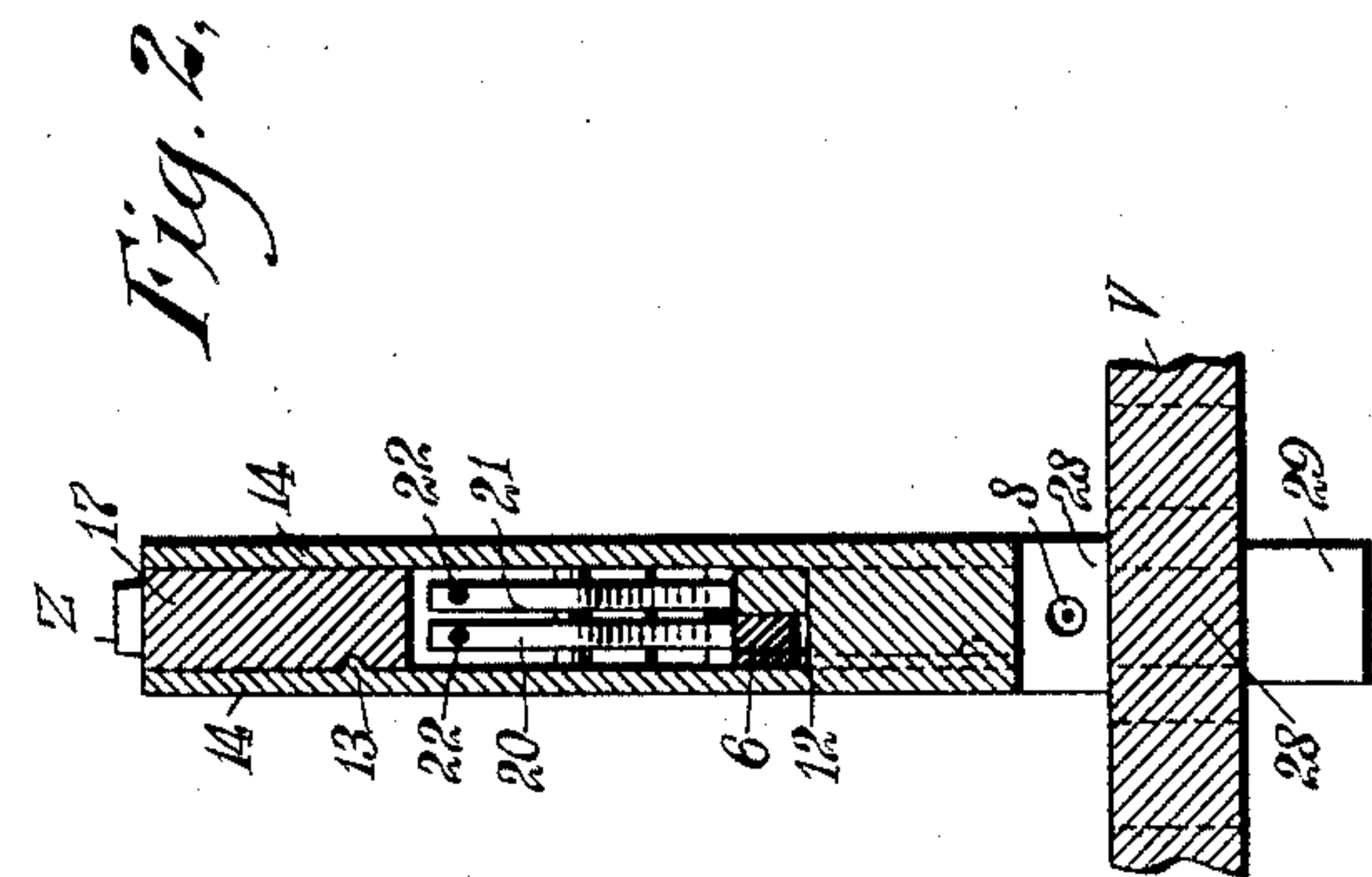


Fig. 2.

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JOHN J. HUMMEL, OF SPOKANE, WASHINGTON.

MAGAZINE FOR TYPE-SETTING MACHINES.

997,130.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed October 18, 1910. Serial No. 587,672.

To all whom it may concern:

Be it known that I, JOHN J. HUMMEL, a citizen of the United States, and a resident of Spokane, in the county of Spokane and State of Washington, have invented a new and Improved Magazine for Type-Setting Machines, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a magazine for holding type in position for delivery to a type setting machine having a feeding attachment adapted to mechanically deliver type pieces to the type setting machine; to provide a feeding mechanism for the said type graduated to the thickness of the type being handled; to provide a simple and efficient construction for attaching the magazine to the font frame of a type setting machine; and to provide a magazine constructed in such manner as to be rapidly and readily placed in position for refilling.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a vertical longitudinal section of a magazine constructed and arranged in accordance with the present invention, showing in conjunction therewith a fragment of a type setting machine and the extracting mechanism thereof; Fig. 2 is a vertical cross section of the magazine taken on the line 2—2 in Fig. 1; and Fig. 3 is a vertical cross section of the magazine taken on the line 3—3 in Fig. 1.

The magazine herein illustrated and described is used in conjunction with a type setting machine for which I have made application for patent co-pending herewith. The said type setting machine is provided with an extracting mechanism having a type holding table X provided with jaws which spread to receive the type pieces as delivered from the magazine. The delivery is accomplished by ejecting the successive type pieces by means of an ejecting mechanism forming part of the magazine, and being actuated by a trigger or striking bar Y protruded into the path of the actuating mechanism for the said magazine. The striking bar Y is, in the type setting machine referred to, projected from each of the type extractors the same distance. When projected they

impinge upon the free end 4 of a bell crank lever 5 with which each of the magazines is provided, irrespective of the size or shape of the various characters carried thereby. Each of the magazines is assigned a certain character, and none other is placed in the magazine, therefore all of the letters in the said magazines are uniform in thickness. Corresponding to the thickness of the type pieces are the ratchet teeth of a rack bar 6, each bar differing from every other in the length of the ratchet teeth, and corresponding and co-relating to the length of the free arm 4 of the bell crank 5. The length of the free arm 4 of the bell crank 5 governs the pull on the arm 7 of the said bell crank. The arm 7, by means of a wire 8, is connected to a pendant arm 9 extended from the back of the rack bar 6. The bell crank is pivoted at 10 between the sides of a groove 11 at the delivery end of the magazine. The rack bar 6 is mounted in an open groove 12 extending longitudinally under the type pieces Z. The type pieces are suspended and guided by a flange 13 formed in the side wall 14 of the magazine, and over which the nicks W of the type pieces fit. The rack bar 6 is supported by links 15, 15 pivotally mounted at 16, 16 in the frame of the magazine and forming a rocking connection for the said rack bar.

Between the sides 14, 14 of the magazine is formed an open runway in which the type pieces and a thrust block 17 are mounted. The thrust block 17 is provided with a nick similar to the nick W formed in the type pieces Z. The block 17 is provided with a recess 18 opening downwardly and rearwardly, and in which are pivoted at 19, pawls 20 and 21. Both of the pawls 20 and 21 are connected by means of connecting rods 22 with leaf springs 23. The springs 23, 23 are fixedly secured at 24 to the block 17.

The pawls 20 and 21 engage the teeth of the rack bar 6 and the teeth 25 formed in the fixed structure of the magazine. The teeth in the rack and the teeth 25 in the fixed structure correspond in shape and length. The object in the use of the two is to prevent the backward thrust of the block 17 and the column of type carried thereby, when the type is being lifted for delivery. This is accomplished by the pawl 21 engaging one of the fixed teeth 25 with every forward or delivery movement of the rack bar

6. Both the pawls 20 and 21 are moved to engage the teeth of the bar 6 and the teeth 25 respectively, by the leaf springs 23, 23 to which each of the independent pawls are engaged.

The rack bar 6 is retracted after each advance, by a coiled spring 26 which is interposed between the pendant arm 9 and the body of the magazine. With the retraction of the bar 6, the bell crank 5 is placed in operative position where it is arrested by a stop 27, which further serves to limit the backward stroke of the bar 6.

The magazine is temporarily mounted on the back plate V of the font carrying frame disclosed in the co-pending application above referred to. For this purpose the body is provided with plugs 28, 28 which fit within recesses provided in the said frame and having screw-threaded holes adapted to receive the screw-threaded shanks of wing nuts 29, 29. The perforations provided in the frame V are elongated to pass the wing nuts 29, and are narrowed so that when the wing nuts are turned, as shown in Fig. 3, they serve to hold the magazine firmly in position on the said frame.

The operation of the device is as follows:
As above stated, the arm 4 of the bell crank 5 is graduated to produce a movement of the column of type pieces Z equal to the thickness of said type pieces. With the operation of the type setting machine described in the above cited application, the striking bar Y impinges upon the arm 4 of the bell crank 5, causing the same to rock to draw downward the arm 7. The arm 7 of the bell crank 5 is connected by means of the wire 8 with the pendant arm 9 in such manner that with the downward pull of the arm 7, the pendant arm 9, and rack bar 6 connected therewith, are likewise drawn toward the delivery end of the magazine. Moving thus, the rack bar 6, the column of type pieces and the thrust block 17, are likewise moved by reason of the engagement between the said rack bar and the pawl 20 mounted in the said block. The result of the movement of the type column and thrust block is to present one of the type in the path of the striking bar, causing the removal of the same from the magazine and into engagement by the type holder X. The striking bar having passed from engagement with the bell crank 5, the coiled spring 26 is permitted to retract the bar 6. The thrust block 17 is at this time held from retraction, by the engagement of the pawl 21 with the teeth 25 of the fixed magazine structure. The pawl 20 yields to pass the teeth of the rack bar 6, one tooth passing, to engage the same for the next succeeding delivery of type, and the forward movement of the rack bar 6. The above action is re-

peated until the column of type is partially or entirely exhausted, the block 17 advancing from the rear to the delivery end of the magazine tooth by tooth of the bar 6, and by movement equaling the thickness of the type carried by the said magazine. When the magazine is exhausted to predetermined extent, it is removed from the frame V by turning the wing nuts 29, 29 in alinement with the perforations formed in the said frame. A duplicate magazine is immediately placed in position, and the type setting machine continues in its operation. The magazine which has been removed is lifted by retracting the block 17 to the rear end. To do this it is only necessary to compress the springs 23, 23 so that by means of the connecting rods 22, 22 the pawls 20 and 21 are lifted from engagement with the teeth 25 and the rack bar 6. In this position the block may be freely retracted to the rear end of the magazine. In placing the type in the magazine they are threaded from the forward end thereof, the nicks of the type being extended over the flange 13 formed in one of the sides 14 of the magazine.

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

1. A magazine for type setting machines comprising a body portion having a flange extended inwardly from one side to fit within the nicks of the type being handled; a thrust block mounted in said body portion and adapted to deliver singly the type pieces therefrom; a pivoted member extended from the end of the said body portion; means connecting the said pivoted member with said thrust block to advance the latter when the former is rotated; and detent members for holding the said block in its advanced positions.

2. A magazine for type setting machines comprising a body portion having a flange extended inwardly from one side to fit within the nicks of the type being handled; a thrust block mounted in said body portion and adapted to deliver singly the type pieces therefrom; a series of tooth-like members formed in the fixed structure of said magazine; a movable toothed member extended lengthwise of the said magazines; a plurality of pawls mounted on said block to engage the teeth in said fixed and movable members; a bell crank pivotally mounted in said magazine at the delivery end thereof; and means operatively connecting the said bell crank and movable member, to advance the latter when the former is rocked on its pivot.

3. A magazine for type setting machines comprising a body portion having a flange extended inwardly from one side to fit within the nicks of the type being handled; a thrust block mounted in said body portion

and having a groove in the side thereof to fit the said flange; a rack bar movably mounted in said body portion below said block; a rack bar formed in the fixed structure of said body portion; a plurality of pawls pivotally mounted on said block to engage said movable and fixed rack bars; a bell crank pivotally mounted in said magazine at the delivery end thereof; transmission means connecting the said bell crank and movable rack bar, to advance the latter when the former is rocked; and means for retracting said movable rack bar for each forward movement thereof.

15 4. A magazine for type setting machines comprising a body portion having a flange extended inwardly from one side to fit within the nicks of the type being handled; a thrust block mounted in said body portion
20 and having a groove in the side thereof to fit the said flange; a rack bar movably

mounted in said body portion below said block; a rack bar formed in the fixed structure of said body portion; a plurality of pawls pivotally mounted on said block to engage said movable and fixed rack bars; means connected with said pawls for raising the same from engagement with the said rack bars; a bell crank pivotally mounted in said magazine at the delivery end thereof; transmission means connecting the said bell crank and movable rack bar, to advance the latter when the former is rocked; and means for retracting said movable rack bar for each forward movement thereof.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN J. HUMMEL.

Witnesses:

R. KERTHOVER,
LEON J. CADORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."