D. B. RAY.

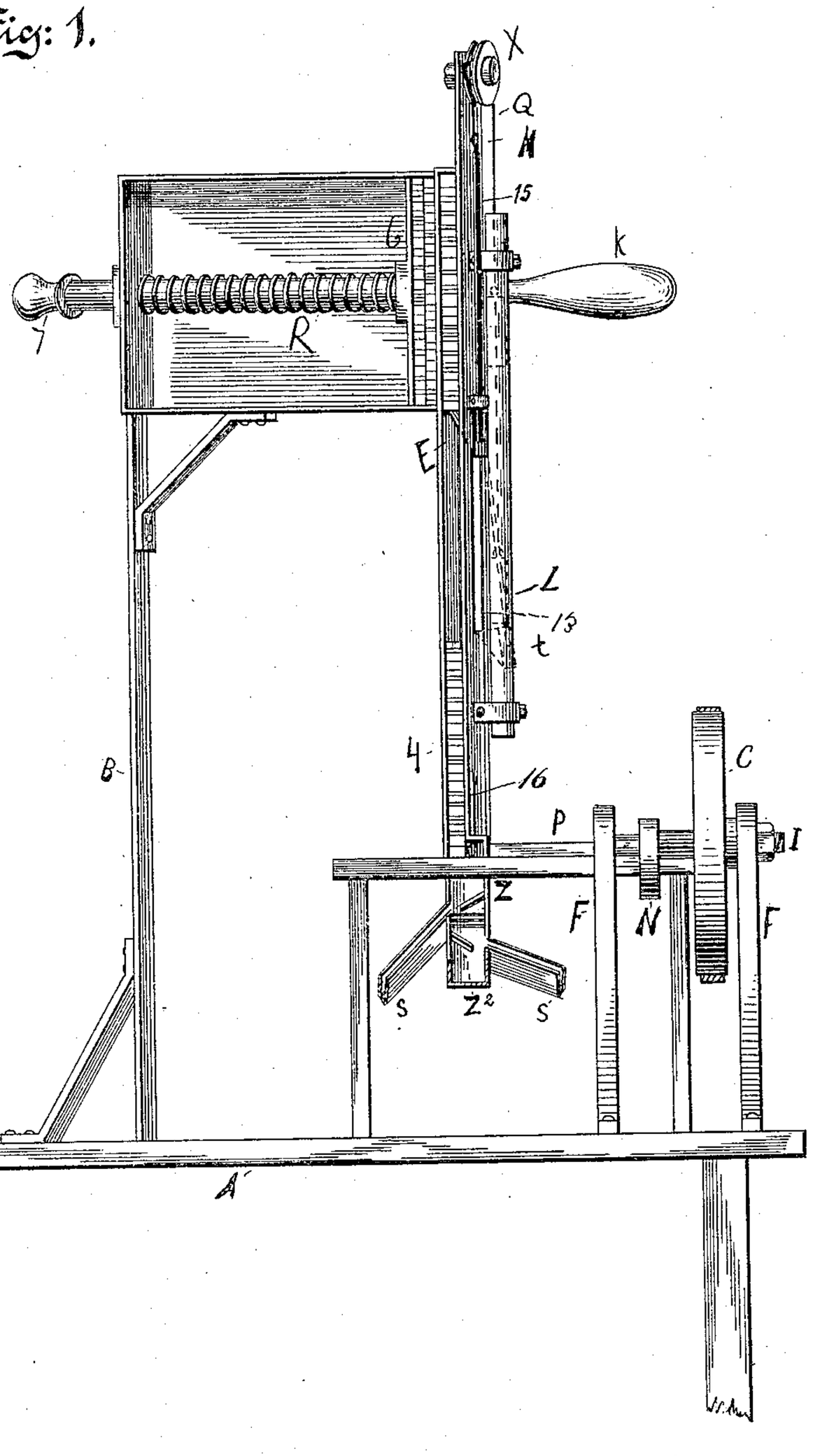
APPARATUS FOR SEPARATING TYPE INTO CLASSES FOR DISTRIBUTION.

APPLICATION FILED OCT. 3, 1902.

965,939. Patented Aug. 2, 1910.

3 SHEETS—SHEET 1.

Fig: 1.



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3 SHEETS—SHEET 2.

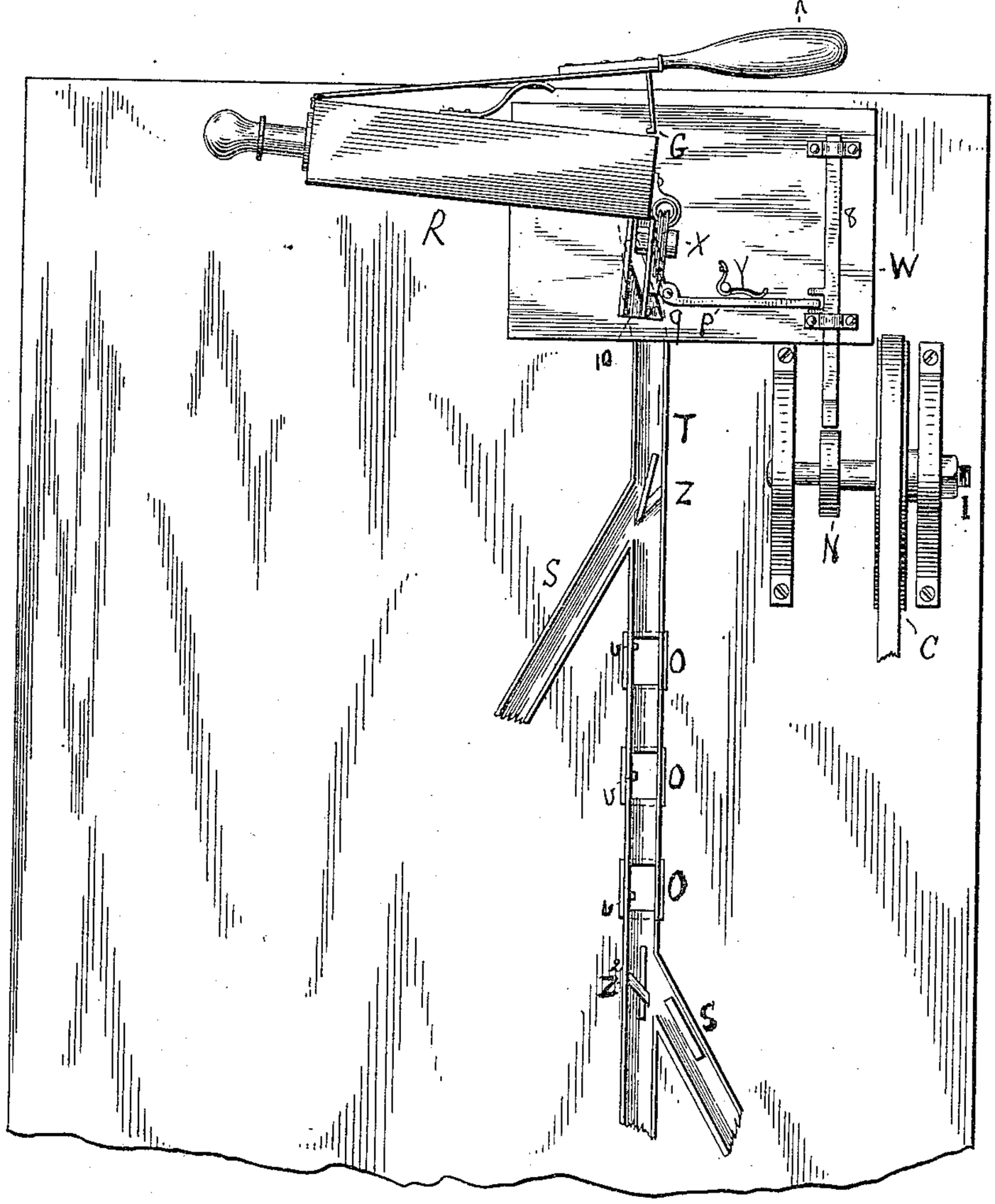

Fig: 2,

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3 SHEETS—SHEET 3.

Fig: 3.

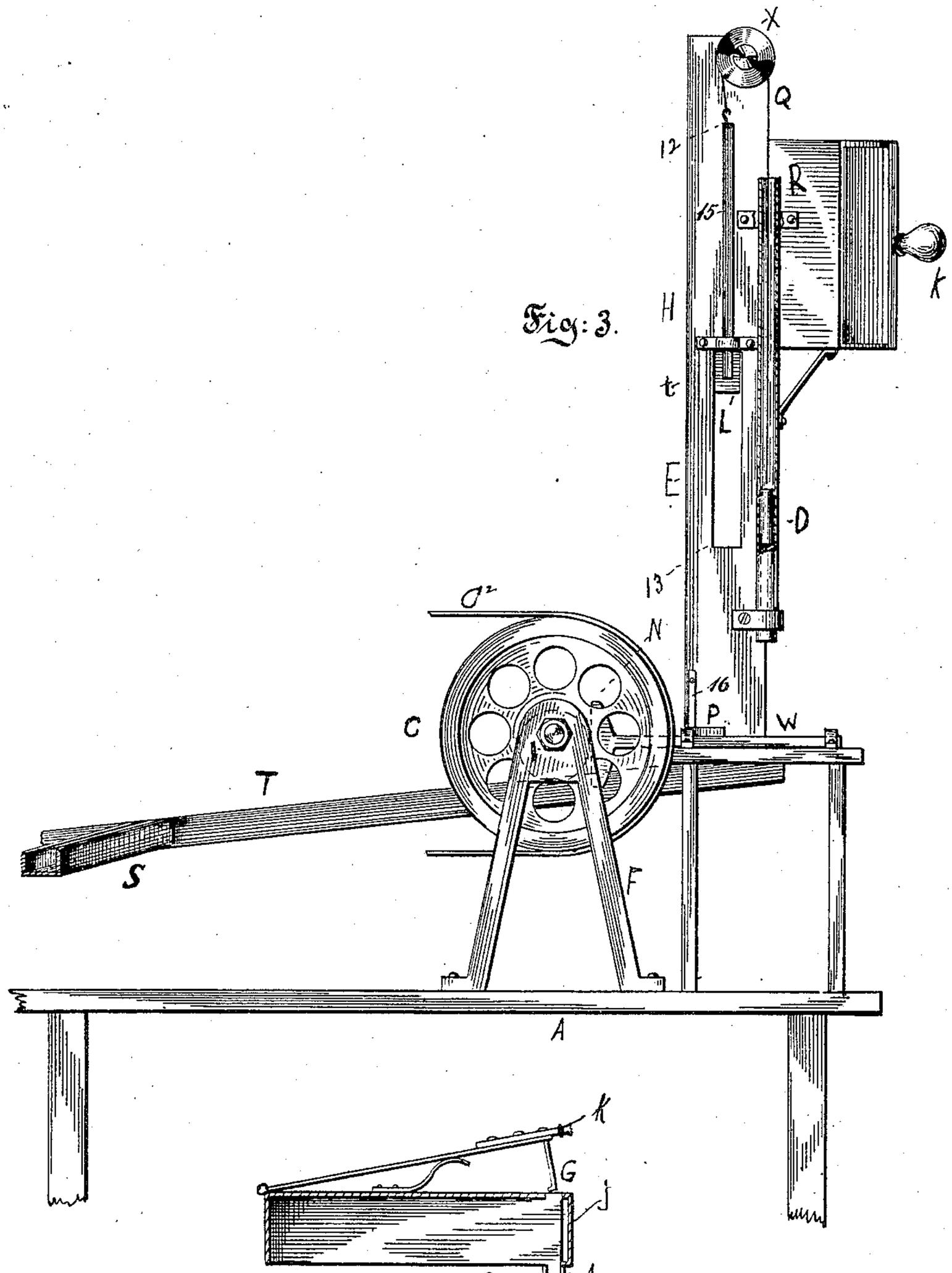

Fig: 4.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR SEPARATING TYPE INTO CLASSES FOR DISTRIBUTION.

965,939. Specification of Letters Patent. Patented Aug. 2, 1910.

Application filed October 3, 1902. Serial No. 125,741.

To all whom it may concern:

Be it known that I, DAVID BRAINERD RAY, a citizen of the United States, and resident of Huntington, county of Suffolk, State of New York, have invented certain new and useful Improvements in Apparatus for Separating Type into Classes for Distribution.

It is designed to be used in connection with an apparatus for distributing type.

The object of my invention is to separate type taken from a page or form into classes to facilitate the distribution of the same letter by letter.

It is novel, useful, simple in construction and not liable to get out of order.

Some of the leading features (though I am not confined to them) are as follows:— 1st. A principal type holder, lettered R, containing a body of type to be distributed. 2nd. A line holder, lettered E, into which lines of type are pushed one by one from the principal type holder. 3d. A means, lettered T, for separating leads from lines of type. 4th. A line carrier, lettered L, working in connection with the line holder for conveying lines of type to the required place. 5th. A device, lettered P, connected with the line holder designed to move the type one by one to an inclined type channel.

General description.—The principal type holder containing a body of type to be distributed, taken from a page or form, is placed preferably in such a position that the lines of type will be nearly perpendicular, and the type themselves will be nearly horizontal. Connected with the principal type holder is a pusher operated by a coiled spring or other suitable mechanism for moving the body of type along in the principal type holder to a point where the lines are removed one by one to a line holder. The lines are pushed out of the type holder into the line carrier by a line pusher which consists of a lever, on which is a projecting piece about the length of a line of type. This lever works on a pivot and may be operated by hand. The projecting piece on the line pusher passes in and out of an opening in the type holder, and pushes each line out of the opening into a line carrier suitably positioned to receive it. The line holder is placed in a nearly perpendicular position so that type contained therein will feed downward by gravity.

Connected with the line holder is a line carrier which is moved up and down by gravity, and is designed to convey each line to or near to a point where the type are pushed out of the line holder one by one into an inclined channel. This line carrier has a ledge at the lower end onto which each line of type is pushed by the line pusher. The carrier is shown suspended by a cord passing over a pulley. To this cord a weight is attached which is not equal to the weight of the carrier when a line of type has been pushed onto the ledge, and, therefore, the line carrier sinks down, carrying the line of type with it. The line carrier moves in guides. The lower guide has an oblong opening which allows the ledge portion of the carrier to move outward through a slot in the line holder far enough to deposit the line of type resting on the ledge on the top of the line of type already in the line holder in the following manner. The underside of the ledge which supports the line of type is shaped like a wedge, and when the carrier sinks down under the weight of the line the point of the wedge strikes on the outside of the line already in the holder and moves out and through the slotted opening in the holder, as this opening is not wide enough to allow the line of type to pass out, (not being more than about half as wide as a type is long) the line of type will be left resting on the top of the type already in the holder as the ledge is thus forced out from under it, thereby keeping up the supply of type. The line carrier being thus relieved of the weight of the line so deposited, will be drawn back by the weight to its original position ready to receive another line of type.

Near the bottom of the line holder is an opening into alinement with which each lowest type in the line is pushed and drops into an inclined type channel by a reciprocating pusher operated by an eccentric, which is rotated by any convenient device. The line holder is provided with a spring actuated device placed at or near the above mentioned opening under the lower end of which the type are pushed. As the type are pushed outward by the pusher the spring actuated device holds back all except the lowest type, so that only one type can pass out at a time. (This device is fully de-

scribed and illustrated in my patent for a machine for distributing type, dated February 26, 1907, No. 845,261.)

Referring to the accompanying drawings: Figure 1 is a front view of my apparatus for separating type into classes for distribution, as described. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation thereof. Fig. 4 is a detail sectional view showing main view type holder, line pusher, and device for separating leads from lines.

In Fig. 1 A represents the table on which the apparatus rests. R is a principal type holder mounted vertically on the table containing a body of matter to be distributed. Lines of type are pushed one by one from the type holder R, by the line pusher G, into the line holder E which line holder is an inclosing casing opening at one side into the type holder R, as shown particularly in Fig. 4. The line pusher may be operated by hand and is, therefore, provided with a handle K. This pusher has a slight spring inward and has at its end a head which bears against the whole line of type to shove the line from the type-holder R into the line holder E. Connected with the line holder E, is a line carrier L. The carrier is suspended by a cord Q which passes over a pulley X. The other end of the cord is fastened to a weight D. The carrier consists of a vertical bar 15 sliding through a suitable guide on the frame of the machine, the line carrier head L being secured to the lower end of said bar 15. This line carrier head L has a ledge *t*, projecting into the holder E through a slot 13, which ledge is shaped like a wedge, the beveled side of the wedge inclining outwardly and downwardly from the upper inner edge of the head. The head is supported at one side of the line holder E so that it is free to move outwardly at its lower end when in its lower position to deposit a line of type. A line of type is pushed out from the type holder R by the pusher G onto the ledge *t* projecting into holder E through the slot 13, when the type carrier is in its normal position. The weight of the line of type causes the carrier to sink downward in the slot L′ and when the point of the wedge on the underside of the ledge *t* strikes against the line of type 4 which has been previously deposited in the holder, it moves outward through the opening 13, leaving the line inside of the holder, and thus deposits the line on the top of line 4, thereby furnishing a new supply of type. It will, of course, be understood that if the lines of type previously deposited in the holder E are below the lower edge of the slot 13, the wedge face of the head L will contact with said edge of the slot and force the head outwardly through the slot 13, thereby depositing the line of type in the holder. It is intended, however, that the supply of type in the holder shall reach a point above the lower edge of the slot 13 so that the wedge face of the head L will contact with said previously deposited type.

For sorting the leads from the type I use the construction shown in Fig. 4. In Fig. 4 *j* is a recess in the forward end of the type holder R (where it joins the line holder E.) An opening is formed in the bottom of this recess or extension of the line holder R. As the line is pushed from the type holder R into the line holder E when "leaded" matter is distributed the leads will be forced into the recess and catch against the shoulder J, and thus will not be pushed into the line holder but will fall through the opening into a receptacle below.

The mechanism for ejecting type from the holder E, consists of a bell-crank lever, P, which when it is thrown over, lies diagonally across the opening at the lower end of holder E. Below the holder is a diagonal slot which is out of line with the descending type. As the lever moves inward it turns the type into a position to register with said slot, when they drop through into an inclined channel T, as fully described and shown in my Patent No. 845,261. The bell-crank is operated by the eccentric N, through the medium of the sliding bar 8. It is designed to push the type 4, one by one into such a position that they will fall into the inclined channel T, as shown in my patent aforesaid for a machine for distributing type. The pusher P is directly moved by the eccentric N, as described, and is brought back to its original position by the spring Y. This eccentric N is mounted on a shaft which bears the power wheel C revolved by any means such as a belt C^2. The shaft is journaled in standards F. The eccentric acts on a sliding bar 8 which connects with bell-crank P.

In operation the whole body of type is placed vertically in type holder R, the spring actuates plunger plate 6, acting to continually force it forward. The line pusher G is then moved in forcing a line of type into the "line holder" E, the bottom of the line being supported by the foot of "carrier" L. The weight of the line causes the carrier to descend until the wedge *t* strikes on the type at the bottom of the holder when the carrier is forced out, leaving the type superimposed on each other. The oscillating lever P, acts regularly to turn the lowermost type into alinement with the slot below, when the type so turned will fall into the channel T, distributed as shown and described in my Patent No. 845,261.

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

1. In an apparatus for distributing type, a general type holder, a vertical line-holder

communicating with one end of said type holder, a carrier moving up and down along said line holder, and means for moving a line of type from the general type holder onto said carrier, substantially as described.

2. In an apparatus for distributing type, a general type holder, a vertically moving line carrier, mechanism for pushing one line of type from the said type holder onto said carrier, and means for automatically disengaging the carrier from the type, and returning it to its starting point, substantially as described.

3. In an apparatus for distributing type, a general type holder, a line holder opening therefrom at one end, a line pusher, opposite to and in alinement with said line-holder, and means for moving said line pusher to force a line of type into said line holder, substantially as described.

4. In an apparatus for distributing type, the combination with a general type-holder, a line-carrier, means for moving a line of type from the type-holder to said carrier, a sorting mechanism, and a reciprocating single-type pusher for pushing a single type into the sorting mechanism, substantially as described.

5. In an apparatus for distributing type, a general type-holder, a movable line carrier, and means for moving a line of type from the type-holder into said carrier, the said carrier having a shiftable base on which the type rests, whereby the base may be withdrawn when the type is properly positioned, and the carrier returned for another load.

6. In an apparatus for distributing type, a general type-holder, a balanced, vertically movable line-carrier, means for moving a line of type onto said carrier whereby it will descend and mechanism for depositing said type at the end of the carrier's movement, whereby it will automatically rise for another line of type, substantially as described.

7. An apparatus for separating type comprising a main type holder to receive a series of lines of type, a line holder adapted to receive a line of type from said main type holder, means whereby said line holder will automatically deliver its line of type to the separating mechanism and then move back into position to receive another line of type.

8. An apparatus for distributing type consisting of a principal type holder, a line holder, a vertically movable line carrier, means for bodily moving lines of type horizontally from the type holder to the line carrier, means for counterbalancing the line carrier, the counter-balance weight being less than the weight of a line of type, whereby said carrier will be depressed when a line of type is placed therein, and means for releasing the carrier from the type therein when the said carrier has been depressed.

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