(No Model.) 2 Sheets—Sheet 1.

O. F. TEED.

TYPE DISTRIBUTING MACHINE.

No. 457,829. Patented Aug. 18, 1891.

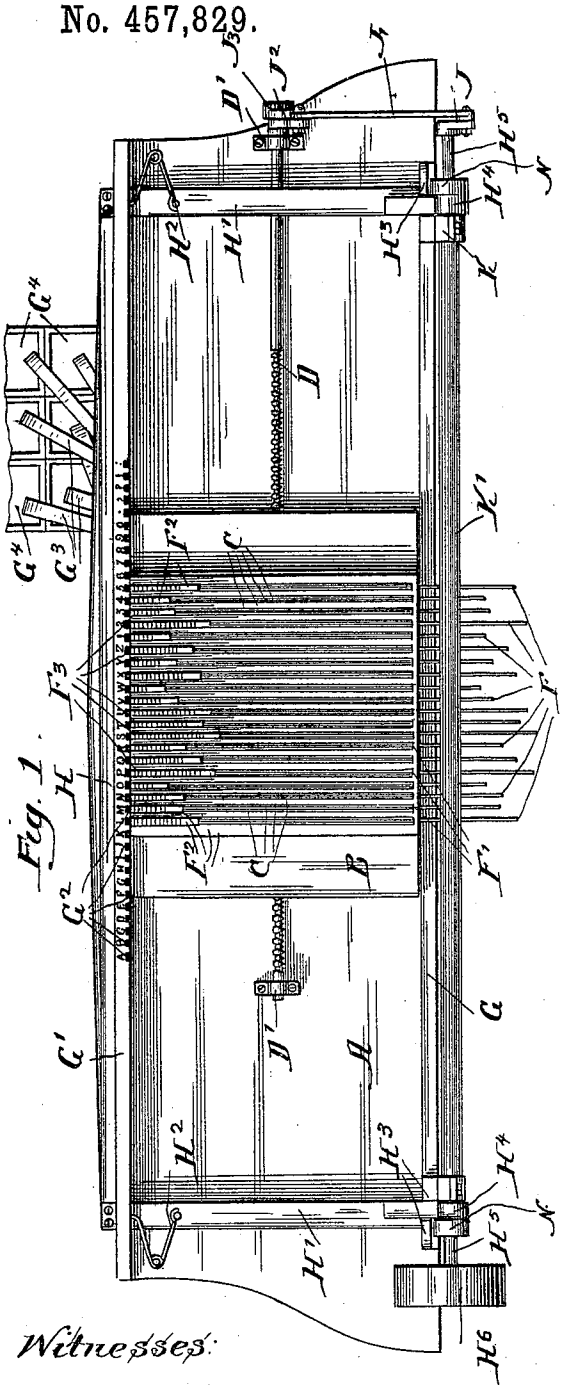


Fig. 1.

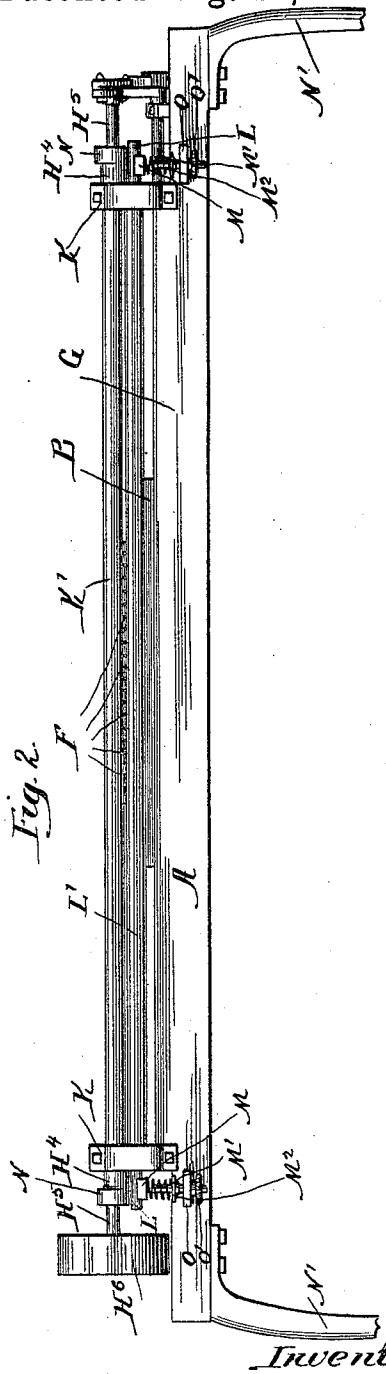


Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

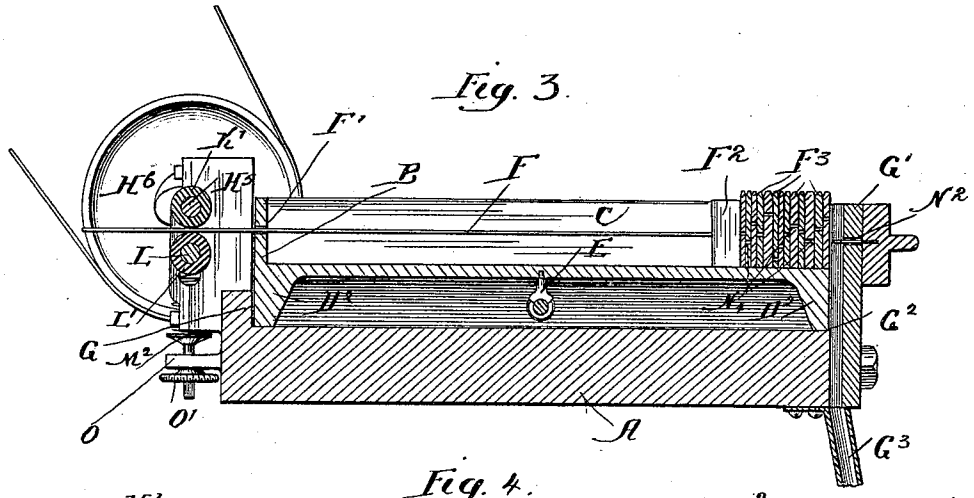


Fig. 4.

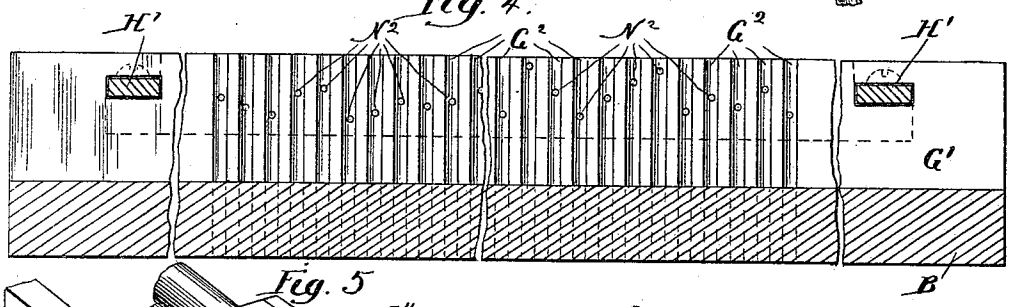


Fig. 5

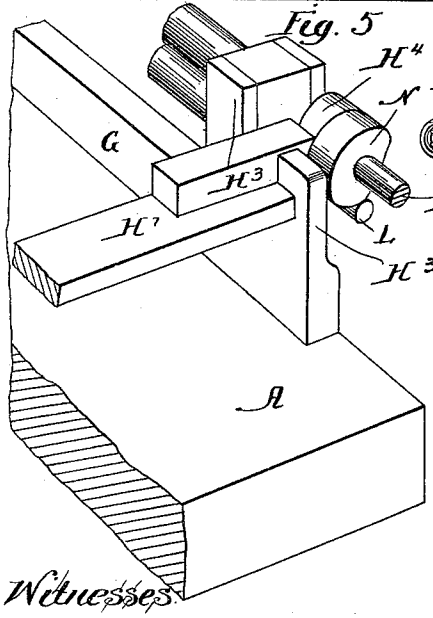


Fig. 6.

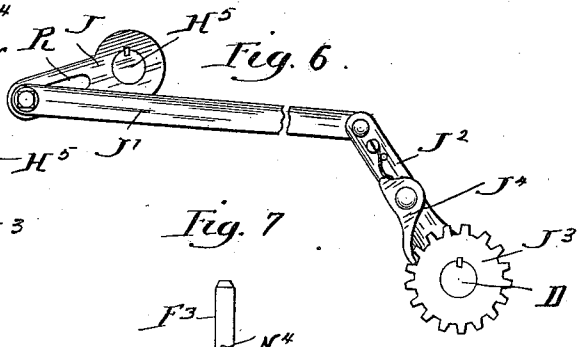
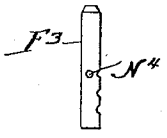


Fig. 7.



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UNITED STATES PATENT OFFICE.

OLIVER F. TEED, OF CHICAGO, ILLINOIS.

TYPE-DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,829, dated August 18, 1891.

Application filed February 19, 1890. Renewed July 11, 1891. Serial No. 399,141. (No model.)

To all whom it may concern:

Be it known that I, OLIVER F. TEED, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Type-Distributing Machines, of which the following is a full, clear, and exact specification.

My invention relates to machines for distributing type, and has for its object to provide convenient means and devices for that purpose.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view of the machine; Fig. 2, a front view thereof; Fig. 3, a cross-section; Fig. 4, a longitudinal section. Fig. 5, a detail of the cam mechanism for separating the rollers and driving the needle-bar. Fig. 6 is a detail of the mechanism for operating the table, and Fig. 7 is a view of a type.

Like parts are indicated by the same letter in all the figures.

A is the base, on which slides the table B, provided with a series of grooves C C.

D is a compound screw journaled upon the base and supported in the bearings D′ D′.

The table B is provided with the downward supports D^2 D^2, whereby it slides upon the base A, and it carries the pivoted clutch E, adapted to engage the threads on the compound screw D.

F F are plungers adapted to be reciprocated within the grooves C C and guided at F′ F′ in the side of the table and carrying at their inner extremities each a block F^2.

F^3 F^3 are type.

The table moves between the raised bars or flanges G G′ on the table B, and the flange G′ is provided with a series of vertical slots G^2 G^2, each of the same width as the grooves C C and of varying depths, according to the sizes of the letters in the alphabet. The difference is not great, and hence not easily shown in a drawing of the size here used. Each of such slots may have its proper letter attached in position so as to indicate the letter for which it is adapted. G^3 G^3 are chutes leading one from each of such vertical slots and terminating above the type-boxes G^4 G^4.

H is the needle-bar, connected at each end to the bars H′ H′ and normally held against the guide C′ by means of the springs H^2 H^2. The bars H′ H′ are guided at their inner extremities between the posts H^3 H^3 and impinge against the cams H^4 H^4 on the shaft H^5. This shaft is driven by a belt on the pulley H^6 or in any other desired manner. At the extremity of this shaft, opposite from the pulley, is a crank J, pitman J′, and at the end of the pitman another crank J^2, pivoted on the compound screw-rod D. Rigid on the end of the shaft is a pinion J^3, and on the crank J^2 is a spring-actuated dog J^4, which engages the pinion or ratchet-wheel J^3. The shaft H^5 is pivoted in the standards K K and between them is perferably coated with an elastic coating K′. The standards K are supported on the base A. Parallel with the shaft H^5 is a similar shaft L, having the elastic coating L′ and adapted to move vertically in slots in the standards K K, and supported in its extremities on the bearings or boxes M M, which are in turn supported by the springs M′ M′ on the ledge M^2, which ledge is secured upon the base A. Pins may be placed within these springs to keep them in position.

N N are the cams on the shaft H^5, adapted to engage the end of the shaft L.

N′ N′ are the legs on which the table is supported.

N^2 N^2 is a series of needles in the needle-bar, placed at different altitudes and projecting through apertures in the back of the vertical grooves G^2 G^2.

F^3 is a type having an aperture N^4, and which type is provided with a characteristic aperture, such apertures differing in height so as to correspond with the position of the apertures in the vertical slots G^2. The ledge M^2 for the spiral springs M′ is supported upon the projection O, and by means of a thumb-screw O′ is vertically adjustable. R is a slot in the crank J.

The use and operation of my invention are as follows: A series of type, each provided with a characteristic aperture—that is to say, all type of a given letter are provided with apertures of a given height—and such type having been used the matter is taken line by line when ready to be distributed and placed in the slots C C. If now power be applied to the pulley H^6, the shaft H^5 will rotate, and by so doing will operate the pitman J′, and hence

rotate the compound screw D. This, by reason of the engagement of the clutch E with its thread, causes the table B to slide backward and forward in the usual manner of such compound screws. This motion of the table is rendered intermittent by means of the slot R in the crank J, for the connecting-pin between the crank J and pitman J′ is free to slide in this slot. Thus the table is caused to reciprocate back and forth. As the shaft H^5 rotates, the cams N N thereon will hold the shaft L down, compressing the spiral springs M′ M′, and thus will keep the two elastic portions in the shafts K′ and L′ separated. At a brief portion of the revolution, however, the cam N is disengaged from the shaft L, the elastic portions are brought securely together, and the plungers F F are reciprocated a short distance forward, or at least pressure is applied to them to so push them forward. This forces up the row of type in each one of the slots C C, and the action is so timed that this forward reciprocation of the plungers F F takes place only when the carriage is at rest and in a position where each one of the slots C C registers with one of the vertical slots G^2. At this same moment the needle-bar H is in the position shown in Figs. 1 and 3, being firm against the guide G′. As the revolution of the shaft H^5 continues and the pressures on the line of type in front of it is released, the carriage moves forward so as to bring the slots C C in front of each of the next succeeding slots G^2; but at this same moment the cams H^4 H^4 engage the bars H′ H′ and force them backwardly against the springs H^2 H^2, so as to remove the needle-bar H from contact with the guide G′, and thus remove the needles N^2 N^2 from the vertical slots G^2 G^2. Now if when the pressure is applied to the line of type there is at the end of any one of such lines of type a type corresponding to the slot opposite such letter, type will be forced into such vertical slot, for in that case the needle N^2 will enter the hole N^4, and when the table moves on and this needle is retracted such type will pass down through the vertical slot G^2 and guide G^3 to its appropriate box G^4. If the last type in any line of type does not correspond with the letter of the slot opposite, then it will be prevented by such needle from entering such vertical slot, and when the pressure from the plunger behind it is released it will move along with the table until such time as it finds its appropriate slot.

The elastic portion of the rollers which drive the plungers is desirably caused to bring the type against the needles with a yielding pressure, so that the larger type, double letters, and the like will be pushed in a sufficient distance to escape the effect of the forward movement of the table. The arrangement of letters is immaterial and experience will probably dictate the best arrangement. The most frequently recurring letters may be provided with a larger number of slots. The only necessary modification of the type, as now used, will be to provide them with the hole N^4. Of course a series of holes could be used in the type to modify the combination, in which case a series of needles would be necessary in the corresponding vertical slots.

The device is preferably driven by power, and when once filled with type needs no further attention until all the type has been distributed.

I do not limit myself to the precise form and construction shown.

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

1. In a type-distributing machine, the combination of a part containing a series of type-discharge ways with a series of type-plungers adapted to force the type toward such ways, and rollers between which such plungers pass, whereby they are forced toward the ways.

2. In a type-distributing machine, the combination of a part containing a series of type-discharging ways with a series of type-plungers adapted to force the type toward such ways, and rollers between which such plungers pass, whereby they are forced toward the ways, said rollers covered with elastic material to force the plungers yieldingly forward.

3. In a type-distributing machine, the combination of a part containing a series of type-discharging ways with a series of type-plungers adapted to force the type toward such ways, and rollers between which such plungers pass and whereby they are forced toward the ways, and cams adapted to separate said rollers at intervals, so as to intermittently force the plungers forward.

4. In a type-distributing machine, the combination of a driving-shaft with a needle-bar carrying reciprocating or intermittently-advancing needles to select the type, plungers to force the type toward such needles, a type-carrying table adapted to move along such needles, and connections from the shaft to the needles and table, whereby they are intermittently operated.

5. In a type-distributing machine, the combination of a driving-shaft with a needle-bar carrying reciprocating or intermittently-advancing needles to select the type, plungers to force the type toward such needles, a type-carrying table adapted to move along such needles, connections from the shaft to the needles and table, whereby they are intermittently operated, and a roller in proximity to the shaft, between which the plungers pass, so that such plungers are also operated from such shaft.

6. In a type-distributing machine, the combination of a driving-shaft with a needle-bar carrying reciprocating or intermittently-advancing needles to select the type, plungers

to force the type toward such needles, a type-carrying table adapted to move along such needles, connections from the shaft to the needles and table, whereby they are intermittently operated, a roller in proximity to the shaft, between which the plungers pass, so that such plungers are also operated from such shaft, and cams to separate the roller and shaft at intervals, so as to make the operation of the plungers intermittent.

Dated Chicago, February 15, 1890.

OLIVER F. TEED.

Witnesses:
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