

Dec. 1, 1925.

A. S. ADAMS

1,563,313

MANUALLY OPERATED TYPE COMPOSING MACHINE

Filed July 21, 1923

4 Sheets-Sheet 1

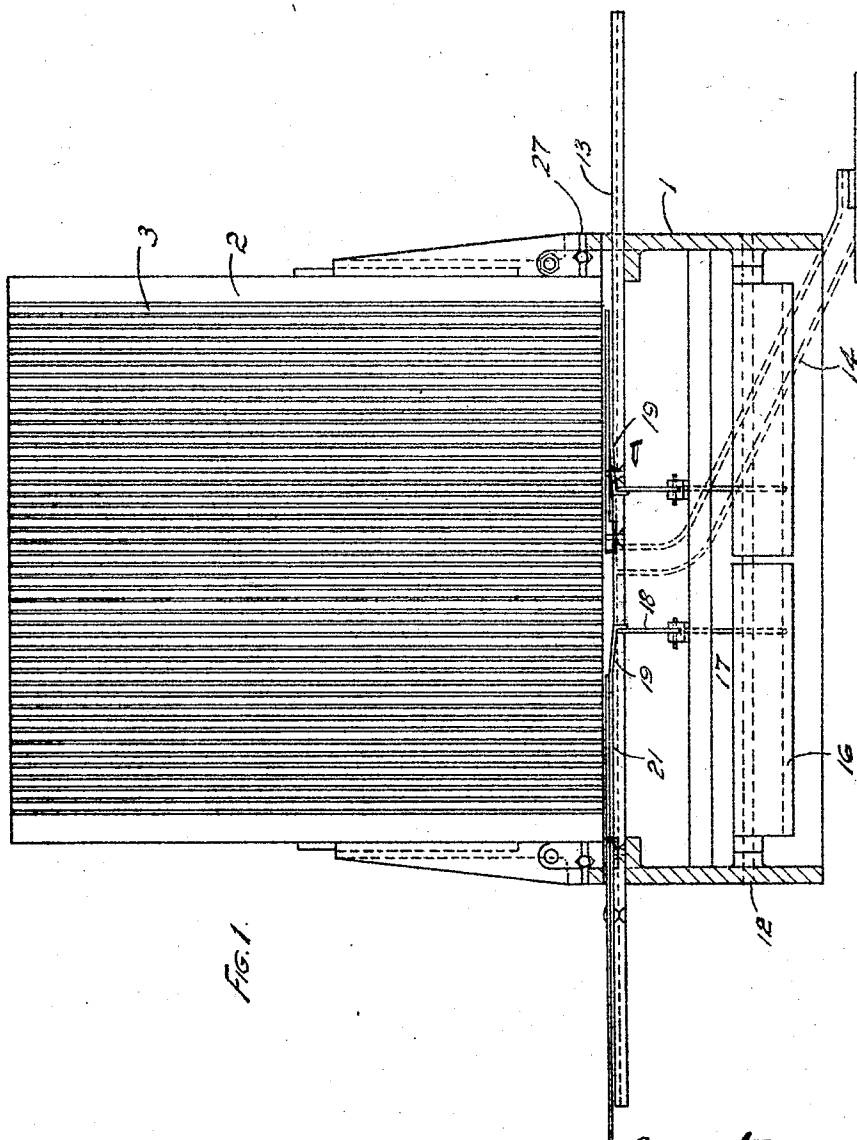


Fig. 1.

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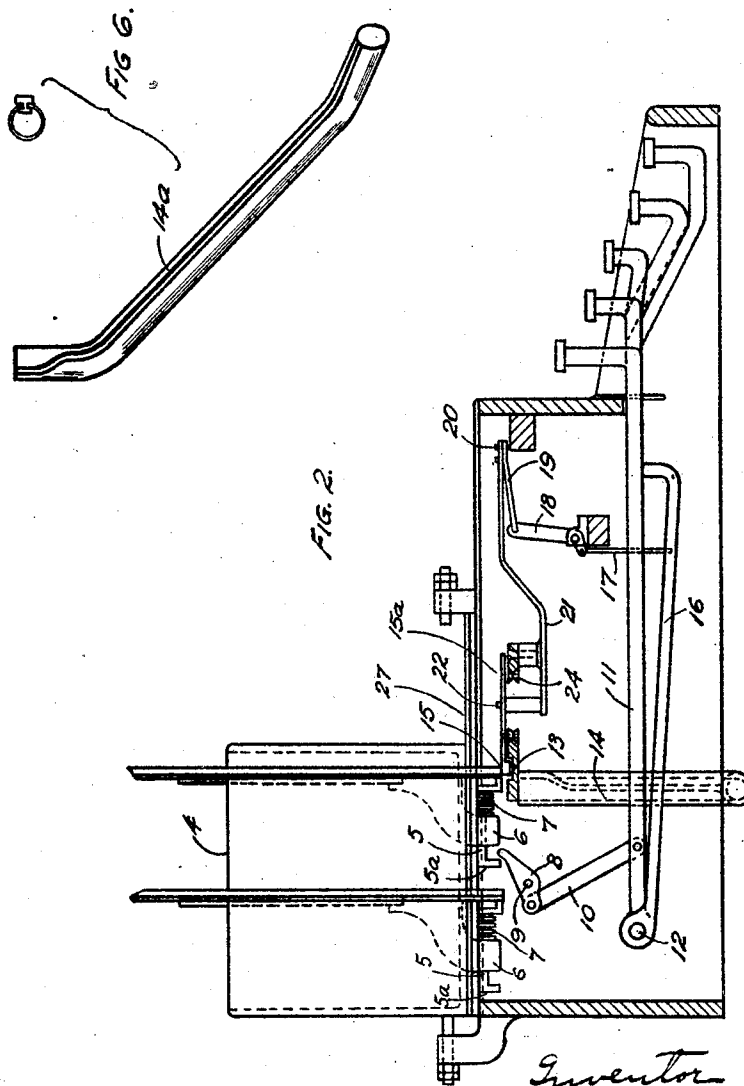
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4 Sheets-Sheet 2



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4 Sheets-Sheet 3

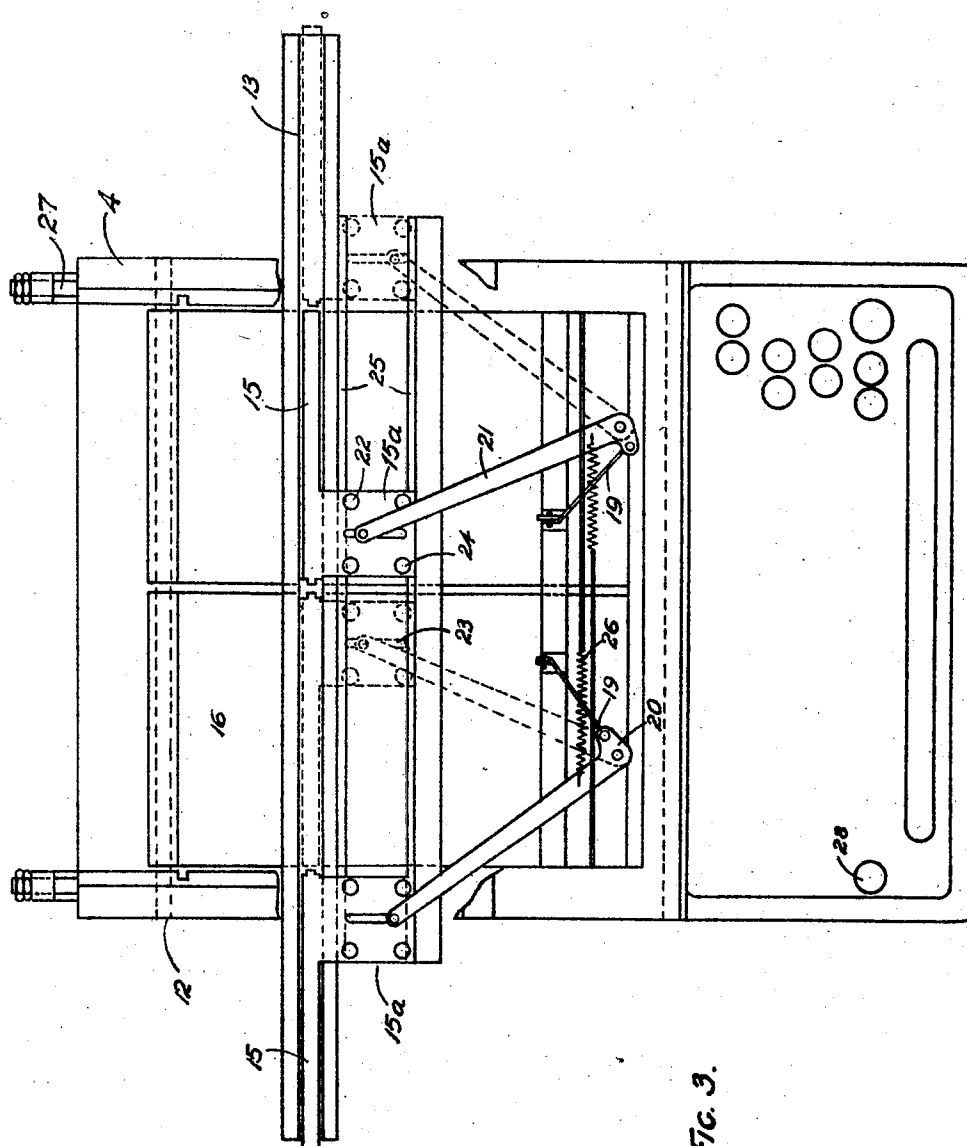


FIG. 3.

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4 Sheets-Sheet 4

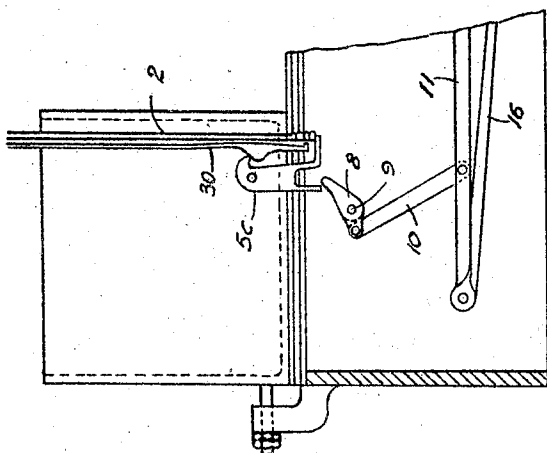


FIG. 5.

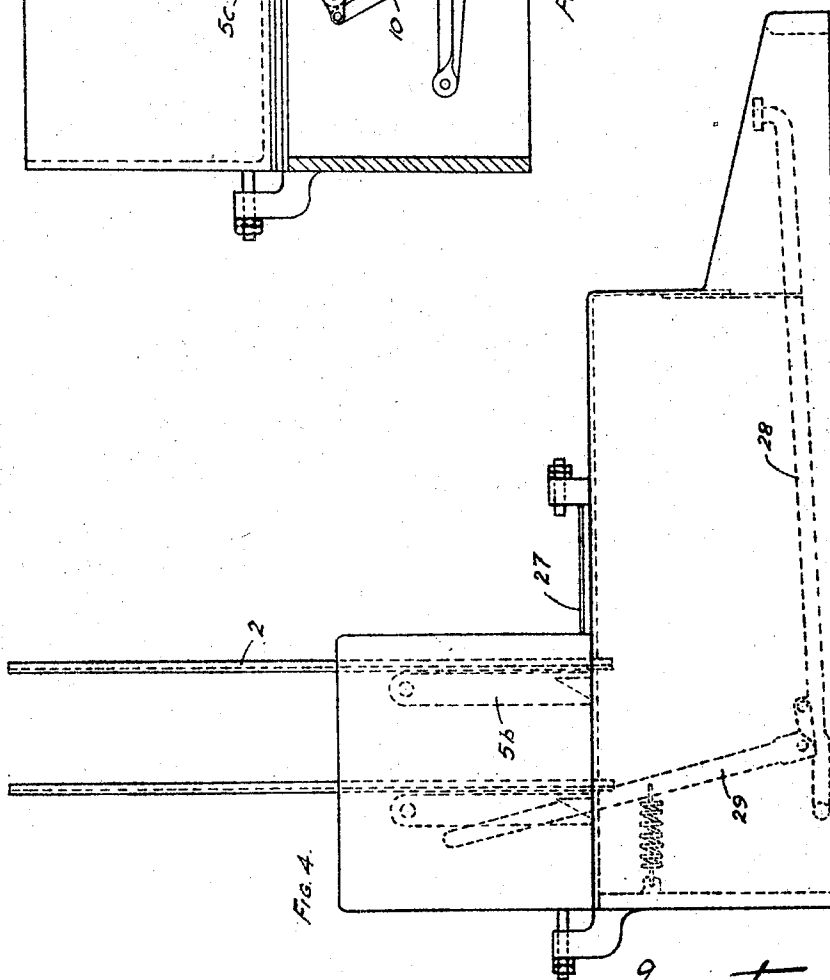


FIG. 4.

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UNITED STATES PATENT OFFICE.

ANNE SOPHIA ADAMS, OF BIRMINGHAM, ENGLAND.

MANUALLY-OPERATED TYPE-COMPOSING MACHINE.

Application filed July 21, 1923. Serial No. 653,044.

To all whom it may concern:

Be it known that I, ANNE SOPHIA ADAMS, a subject of the King of Great Britain, residing at Birmingham, England, have invented certain new and useful Improvements in or Relating to Manually-Operated Type-Composing Machines, of which the following is a specification.

This invention relates to manually operated type composing machines, more especially for type-setting for use with the various reproducing apparatus of facsimile form letters or the like and is of the kind in which a magazine is used for storing the type. One of the objects is to mechanically push the type along a transfer duct as it is released from the magazine to a position whereby it is conducted to the type drum, carrier, segment, or other container which is employed for printing purposes in the reproducing apparatus aforementioned. A further object is to conduct the type from a position in which it lies on its side in the transfer duct and is brought into an upright position to the type drum.

The present invention comprises a transfer duct along which a reciprocating impeller or impellers is or are adapted to traverse by operating the keys so that upon release of the type from a magazine into the transfer duct, the type is swept to a chute or delivery conduit. The latter is provided with a slot adapted to receive the type as it leaves the transfer duct and bring it from a position on its side when in said transfer duct into an upright position to the type drum.

The invention is described with reference to the accompanying drawings in which Fig. 1 is a sectional elevation with the keyboard removed.

Fig. 2 is a vertical transverse section.

Fig. 3 is a plan with the magazine and rear part of the key bars removed.

Fig. 4 is a side elevation showing the movable carriage in which the magazines are mounted.

Fig. 5 is a side view of the modified form of escapement.

Fig. 6 represents detail views of the chute.

In carrying the invention into effect, within a frame 1 is mounted the type magazine or magazines 2 which consist of a series of vertical or substantially vertical ducts or channels 3 lying abreast of each other for holding the type. Said magazine or maga-

zines is or are located in a slidable carriage 4 which can be slid forward by suitable mechanism as hereafter described so as to bring any particular magazine into the operative position. At the base of the magazine or magazines 2 is the escapement mechanism which, as shown in Fig. 2 consists of bars 5 or other elements, one to each duct or channel 3, these bars or elements being slidable in a guide bracket 6 and under the influence of expansible springs 7 are exerted forward and abut against or lodge under the lowermost type and retain it in position. These bars 5 or other elements are retracted from engagement with the type in the magazine 2 by means of a trip 8 pivoted on a common cross spindle 9 connected to the sides of the frame 1. The trips 8 at one end engage with projections 5^a on the bars 5 while the other ends of the trips 8 are connected to links 10 which are jointedly connected to key bars 11 of an ordinary standard or other keyboard layout fulcrumed on a spindle 12.

A horizontal transfer duct or channel 13 is disposed below the magazine 2, said transfer duct or channel extending laterally of the machine and so that the vertical ducts or channels 3 of the magazine 2 have their lower ends opening into it. From said transfer duct or channel is a chute or delivery conduit 14 which leads therefrom midway and is extended to the side of the machine for conveying the type to the printing drum. Said chute is provided with a slot 14^a in which the type slides. Two reciprocating impellers 15 are adapted to sweep along the transfer duct or channel 13, (one impeller being shown inward and the other outward, the dotted lines indicating the other positions thereof) and so carry in turn a type to the chute or delivery conduit 14 which is in registration with the grooves in the type drum, carrier, segment, or other container which may be detachably secured to the machine as will now be described. Beneath the key bars 11 are two pivoted plates or members 16 fulcrumed at 12 so that upon the key bars being depressed, the plates or members 16 are pressed down. From these plates or members 16 are upwardly extending links 17 connected to the lower arms of upstanding bent levers 18 which in turn are connected by horizontal or approximately horizontal rods 19 with the bent arm 20 of a swing arm 21. The latter engages by means of a pin or roller 22 with a slot 23

in the impeller head 15^a of the impeller 15, the said impeller head being provided on the underside with guide rollers 24 which run in a guideway 25. By this means, upon the key bars 11 being depressed, the plates or members 16 are turned slightly downwards from their fulcrum 12 and through the medium of the links 17, levers 18, rods 19, and swing arms 21, the reciprocating impellers 15 are moved outwards along the transfer duct or channel 13, the one impeller moving in an opposite direction to the other. The left hand plate or member 16 is used for operating the left hand impeller and may take up the pressure of one half the key bars 11, while the right hand plate or member 16 may be acted upon by the right half of the key bars 11 for moving the impellers 15.

In practice, by depressing one of the keys, a bar 5 of the escapement device is retracted from engaging with the corresponding lowermost type in the magazine 2, one of the impellers 15 being simultaneously moved outwards along the transfer duct or channel 13 to allow clearance for the fall of the released type into said transfer duct or channel, whereupon the type above is supported by the released type. The impeller 15 on its inward stroke, sweeps the released type to the chute or delivery conduit 14 and provides support to the type above located in the magazine 2 until the completion of the movement of the impeller 15 when the retention device engages the lowest type in the magazine 2. The other impeller 15 meanwhile remains stationary in normal position with its advanced end bordering the aperture leading to the chute or delivery conduit 14 so that it serves as a stop for the released type which as aforesaid is pushed by the inwardly returning impeller 15 acting under the influence of springs 26 so that the type which is released on its side into the transfer duct or channel 13 passes down the chute or delivery conduit 14 along the slot 14^a which brings it into an upright position to the type drum or equivalent.

There may be a plurality of magazines, in the present instance two are shown, which are detachably arranged in the sliding carriage 4. The latter is adapted to traverse along a guideway 27 forwardly and backwardly, its movement being actuated by means of a positioning bar 28 rearwardly pivoted in the machine and to which positioning bar is fulcrummed an upwardly extending arm 29 which is connected with said carriage. Depression of the positioning bar 28 will thus move the carriage 4 forward when it may be locked in position in ordinary manner, the carriage tending to move backwards when the shift key or lock is released. A simple form of retention member 5^b is shown dotted in Fig. 4.

An alternative form of escapement device as shown in Fig. 5 consists of a pivoted trip 5^c having a lower foot or projection adapted to take under the lowermost type in the magazine duct. The upper part of the trip 5^c is provided with a beak or projection which is adapted to wipe against a shoulder or projection of a spring blade 30 attached to the magazine, which spring blade is adapted to frictionally abut at its lower end against the type next above the lowest one. The action is that upon depression of a key bar 11, the pivoted trip 5^c is swung from beneath the magazine 2, the beak of the trip wiping along the shoulder or projection of the spring blade 30 and pressing the latter into frictional engagement with the next type above the lowest one, whereupon the latter is released. The trip 5^c is then allowed to return to its normal engaging position.

Alternatively, only one impeller need be employed and this could traverse from end to end of the machine so as to sweep the type along the transfer duct to a chute or conduit situated at one end thereof.

What I do claim as my invention, and desire to secure by Letters Patent, is:—

1. A manually operated type composing machine having in combination a magazine for holding the type, pivoted retention members each having at its lower end a foot piece normally engaging under the lowermost type and at the upper end a beak bearing against a shoulder or projection of a spring blade, such that by tripping the retention member, the lowermost type are released meanwhile that the type next above are retained, a transfer duct for receiving the released type from the magazine, a reciprocating impeller adapted to traverse along said transfer duct and operating keys connected with the impellers.

2. A manually operated type composing machine having in combination a magazine for holding the type, retention members for holding the type therein, a transfer duct for receiving the type from the magazine, reciprocating impellers adapted to traverse along said transfer duct with one impeller stationarily positioned to serve as a stop for the released type impelled on the return stroke of the other impeller and thereby bringing said type into registration with the opening in the chute or delivery conduit.

3. A manually operated type composing machine comprising a magazine having vertical ducts for holding the type, retention members engaging the bottom type, a transfer duct beneath the magazine and common to all the magazine ducts which open individually into said transfer duct, and means, including impellers, whereby, upon the operation of one key, the type is re-

leased, collected at one particular opening of the magazine ducts into the transfer duct and impelled along the latter by the inward sweep of the impeller, while another
5 impeller acts as a stop for the impelled type adjacent the delivery opening.

4. A manually operated type composing machine comprising, a transfer duct, a magazine carriage movable relatively there-
10 to, a magazine in said carriage having a plurality of type ducts adapted to be brought into communication with said transfer duct to deliver type by gravity into said transfer duct, an impeller travers-
15 ing said transfer duct and adapted to sweep all type therein to a common delivery point, and means for operating said im-
peller.

5. A manually operated type composing
20 machine comprising, a transfer duct, a magazine having a plurality of type ducts so disposed as to deliver type directly into said transfer duct, an impeller reciprocally
25 traversing said transfer duct to sweep all type therein to a common delivery point, said impeller being adapted to temporarily support type in one of said type ducts, and
means for operating said impeller.

6. A manually operated type composing
30 machine comprising, a transfer duct, a

magazine having a plurality of type ducts so disposed as to deliver type directly into said transfer duct, impellers traversing said transfer duct beneath said type ducts to
sweep the type therein to a common delivery
35 point, said impellers temporarily supporting the type in said type ducts and one of said impellers, when stationary, acting as a stop for the type moved by the other, and
means for operating said impellers. 40

7. A manually operated type composing machine comprising, a transfer duct, a magazine having a plurality of type ducts so disposed as to deliver type directly into
said transfer duct, oppositely operating im-
45 pellers traversing said transfer duct beneath said type ducts to sweep the type therein from opposite sides to a common delivery point, said impellers temporarily
supporting the type in said type ducts and
50 each of said impellers, when stationary, acting as a stop for the type moved by the other, trip actuated type retainers for holding the type in their ducts, key operated
means for actuating said trips, and means
55 for automatically actuating said impellers as said keys are operated.

In testimony whereof I affix my signature.

ANNE S. ADAMS.