

No. 782,775.

PATENTED FEB. 14, 1905.

L. S. CAMPBELL.

TYPE SETTING AND DISTRIBUTING MACHINE.

APPLICATION FILED SEPT. 26, 1903.

2 SHEETS—SHEET 1.

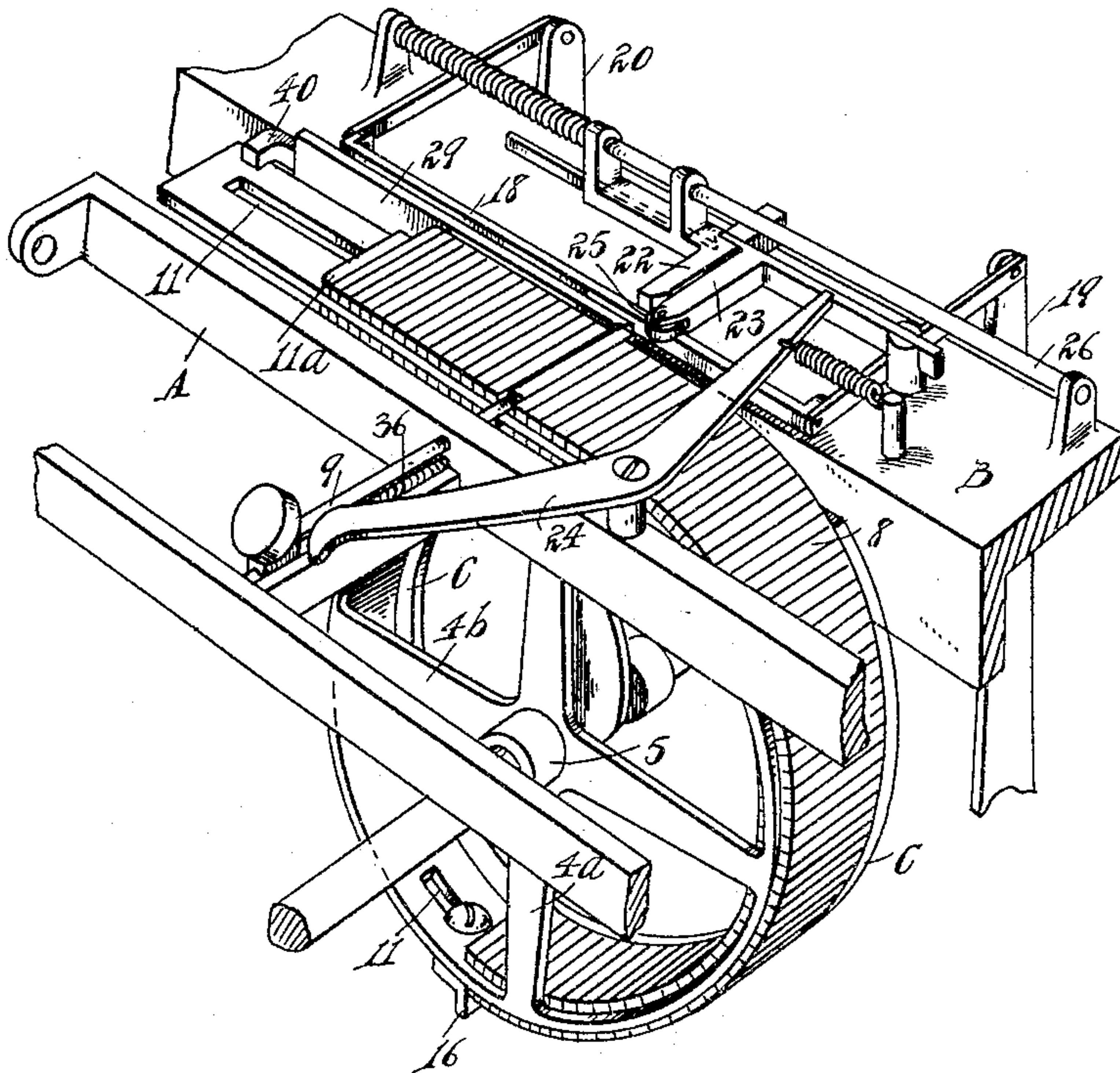


Fig. 1.

WITNESSES

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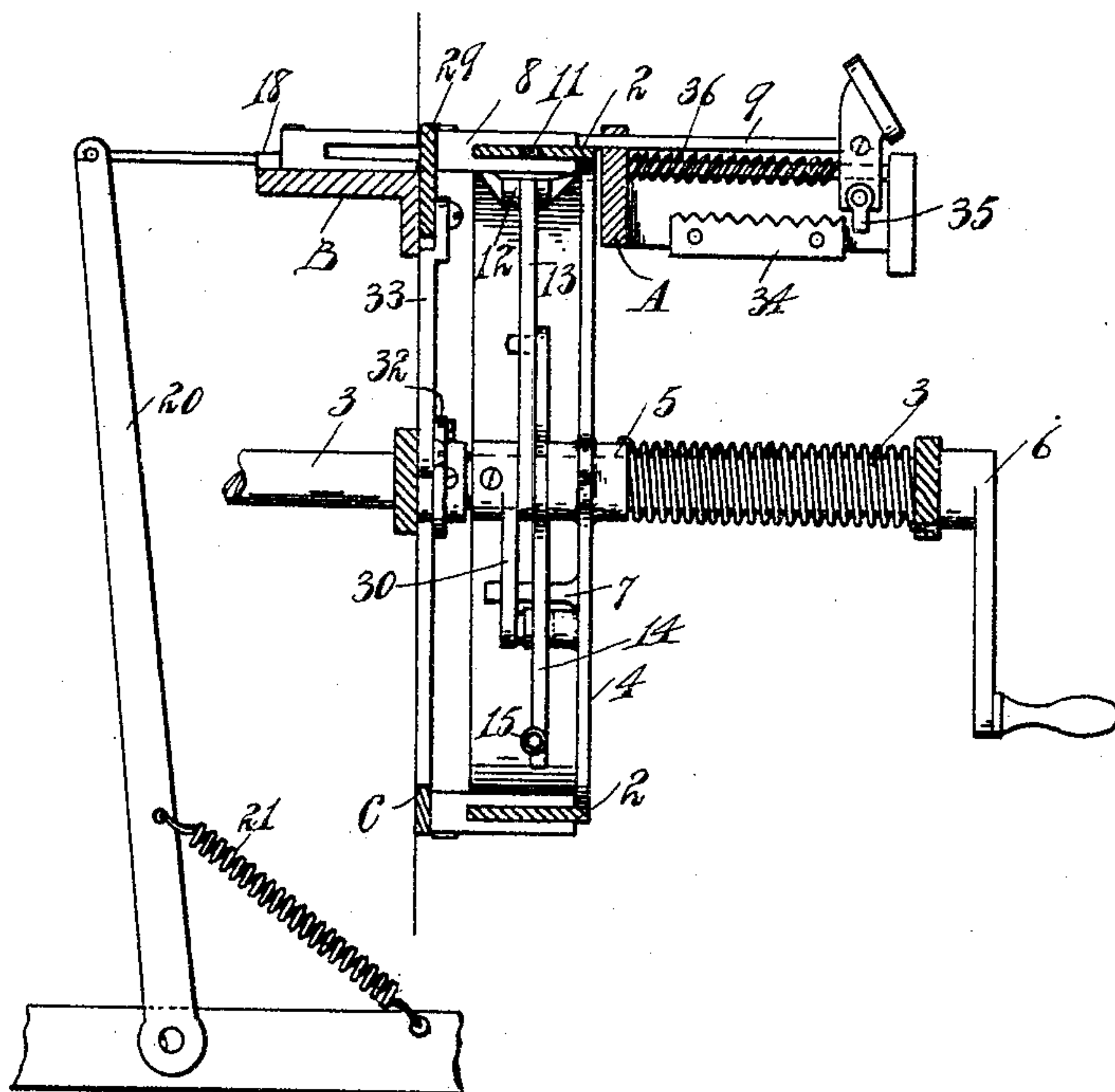


Fig 3.

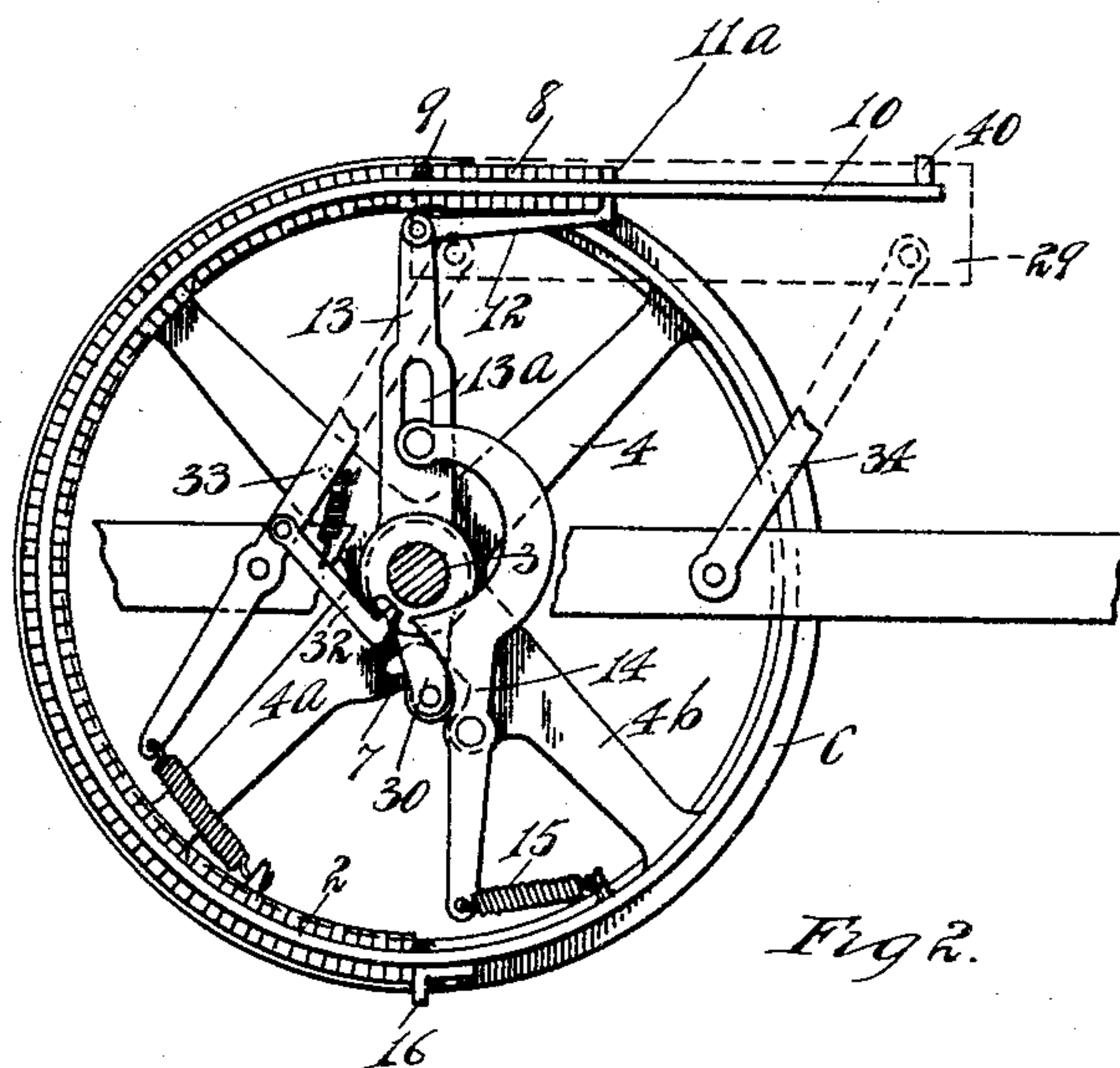


Fig 2.

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UNITED STATES PATENT OFFICE.

LAWRENCE S. CAMPBELL, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-FOURTH TO JOHN A. GRAY AND WILLIAM A. GRAY, OF DETROIT, MICHIGAN.

TYPE SETTING AND DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 782,775, dated February 14, 1905.

Application filed September 26, 1903. Serial No. 174,725.

To all whom it may concern:

Be it known that I, LAWRENCE S. CAMPBELL, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Type Setting and Distributing Machines; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to type-setting and type-distributing machines; and it has for its object a machine in which type are set by shifting them directly from a movable holder to the position in which they are used either for printing or linotyping and after use they are returned to the holder.

In the drawings, Figure 1 is a perspective. Fig. 2 is an elevation. Fig. 3 is a cross-section.

The holder is a curved bar mounted on radial arms that spring from a hub journaled loosely upon a shaft. The hub is arranged to be caught and turned with the shaft for a part of a revolution in either direction. The curved holder extends to an almost complete circle, with a continuation or extension tangent to the circle of the main part of the holder, and the type are carried on the holder to and past a shifting appliance, by means of which selected type are transferred from the holder to a table or platen, on which they are arranged in a regular line for use. The selection is continued until a line of selected type has been assembled on the platen. After use the line of type is transferred from the platen back to the holder, and the operation of setting and distributing is completed. The printing or linotyping forms no part of the present invention, and the apparatus by which it is accomplished is not shown.

The most of the framework by which the parts are supported is not shown in the drawings. One frame-bar, A, is, however, indicated, and another bar, B, which constitutes

the platen and is also a part of the frame or is secured thereto, is indicated.

2 indicates the circular type-holder supported on radial spoke-like arms 4, which spring from hub 5, and the hub is loosely journaled on shaft 3. The shaft 3 is provided with a crank 6, and the arm 30 engages a lug 7 on the spoke 4^a, oscillating the entire holder. The holder oscillates in front of a ring C, that prevents any one of the type from leaving the holder except when it is pushed from the holder onto the platen. On the holder are strung type, each of which is provided with a deep notch between two branches, which normally straddle the holder. Each type is provided on a side face near one end with the printing character or the matrix and is provided near the other end on a side face with indicating means by which the individual type may be distinguished. The form of the type is shown at 8 in Fig. 3, taken in connection with the end view of the type shown in Fig. 2. The holder oscillates past a sliding shift-plunger 9, that is located at the point where in its normal position of rest the tangential projection 10 of the holder leaves the circular part of the holder. The holder is provided with a slot 11, extending into the tangential part 10, and for a considerable distance around the circular part and through the slot from within the circle of the holder projects the bent end 11^a to an arm 12, which is pivotally connected to an arm 13, mounted on the shaft 3. The arm is held to the holder by connections which allow it to have a somewhat independent movement; but in general it is carried with the holder when the holder oscillates. These connections are a lever 14, pivoted to the spoke 4^b. One end is held by a spring connection 15 to the rim of the holder. A pin on the other end engages through a slot 13^a in the arm 13. The tension of the spring 15 tends to force the arm 12 to push the type 8 around the holder and hold them in compact condition against a stop 16. The crank and shaft and holder are brought back to normal position after each oscillation of

the holder to the left, (to the apparent right in Fig. 2, to the left in Fig. 1.)

The operator oscillates the holder by means of the crank until the particular type which he desires to select and transfer is in front of the transfer-plunger 9. The transfer is made by pushing the plunger 9 against the type and pushing the type off from the holder across the platen B. The first type selected will bear against a spring-back bar 18, that is supported on arms 19 and 20, and sweeps across the surface of the plate B under strain of the spring 21. The first type enters between jaws 22 and 23, of which the jaw 22 is a spring-jaw that yields before the assembling type, but holds the assembled type firmly against the jaw 23. The jaw 23 has a slight reciprocating motion and is pushed to the left or toward the jaw 22 at the commencement of motion of each inward push of the transfer-plunger 9. To effect this, the plunger 9 engages the end 24 of a bent lever and shifts the assembled type to the left until the end of the last type transferred passes out of the path of the next type to be transferred. The jaw 23 extends farther toward the carrier than the end of the jaw 22 and has at its terminal a roller 25. The jaw 22 is held by hangers that slide on bar 26, and the bar 26 extends longitudinally over the platen B. After each operation the pressure of the spring on the bar 26 against the jaw 22 causes it to follow, for at least a portion of the way, the receding jaw 23. When the next inserting movement is attempted, the jaw 23 pushes the jaw 22 back sufficiently to place the wedge-shaped space between the already-inserted type and the periphery of the wheel opposite the plunger 9. The type actuated thereby acts as a wedge between the previously-inserted type and the roller on the inner face of the jaw 23. This operation is repeated each time a piece of type is inserted. The assembling continues until the desired number of type have been selected and used in any desired way. As the type are assembled they travel along the platen B between the spring-back bar 18 and a confining-bar 29. After the type have been assembled and used the shaft is oscillated in the opposite direction. The tangent extension engages a stop 40, and the holder comes to rest with the tangent extension parallel with and just above the surface of the platen. A further movement of the shaft causes the end of the crank-arm 30 to bear against the lever 14. This carries the end of the arm 11 entirely over to the end of the slot in the extension-holder 10, and a slotted catch on the shaft engages link 32 on one of a pair of parallel arms 33 and 34 and draws the confining-plate 29 down until its upper edge is below the upper surface of the platen B. The spring-back bar 18 moves forward and transfers the type from the platen

B to the tangent extension 10 of the holder. As soon as the handle is released the confining-bar 29 returns to its place, the arm 11 draws the type into compact condition, and the appliance is ready for another cycle of operations.

A safety appliance to prevent the accidental breaking of type is used with the plunger, a complete throw mechanism comprising a rack 34 with a drag-pawl 35, which compels the operator to push the plunger 9 entirely in at each operation before its return movement can commence. The return movement is by spring 36.

What I claim is—

1. In a type-setting machine, in combination with a carrier for type, a transfer-plunger, a platen to hold selected type, spring-jaws on the platen to confine the type selected, substantially as described.

2. In a type-setting machine, in combination with an oscillating type-holder, type adapted to be held in order by said holder, an arm for compressing the type along said holder, and means for moving said arm to allow a retransfer of type to said holder, substantially as described.

3. In a type-setting machine, the combination of an oscillatory curved holder, a tangential extension thereto, means for shifting the type from said holder to a platen, and means for automatically shifting the type from the platen to said tangential extension, substantially as described.

4. In a type-setting machine, in combination with an oscillatory type-holder, a crank-shaft, a type-confining arm mounted on said crank-shaft to oscillate thereon, a lever slidingly connected to the arm, and pivotally connected to the holder, and means actuated by the crank-shaft for swinging the lever independently of the holder, substantially as described.

5. In a type-setting machine, in combination with a type-holder, means for moving the type-holder past a point of selection for type, means for transferring a selected type to a platen, a platen for holding the selected type, a confining-plate extending along the platen, and means for shifting the confining-plate from its confining position, substantially as described.

6. In a type-setting machine, an oscillating curved holder, type adapted to engage over an edge of the holder and a fixed ring in opposition to the holder arranged to prevent the escape of type therefrom, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

LAWRENCE S. CAMPBELL.

Witnesses:

CHARLES F. BURTON,
MAY E. KOTT.