

No. 752,704.

PATENTED FEB. 23, 1904.

F. C. OSBORN.
TICKET PRINTING MACHINE.

APPLICATION FILED OCT. 25, 1901.

NO MODEL.

FIG. 2.

FIG. 1.

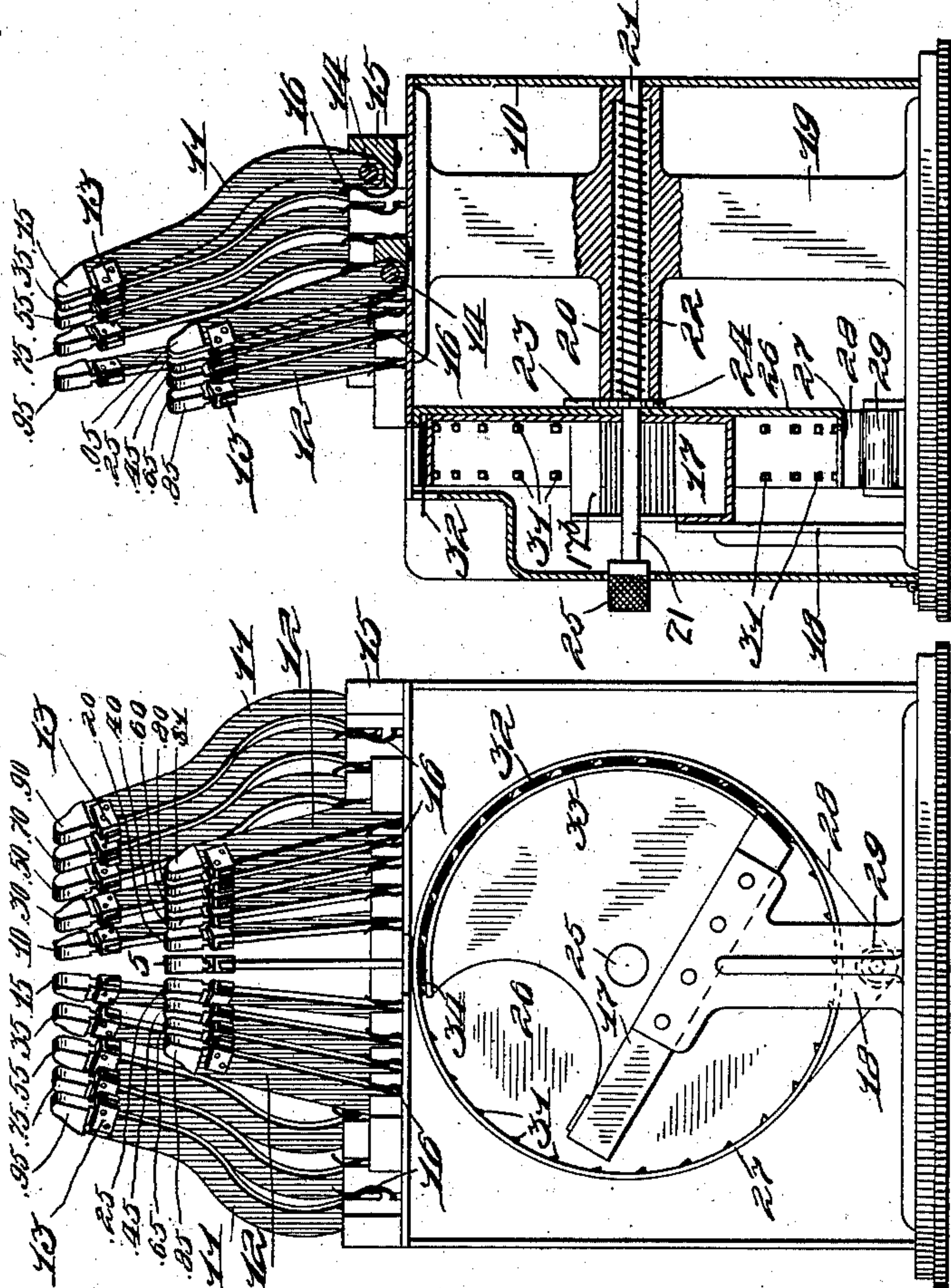


FIG. 3.

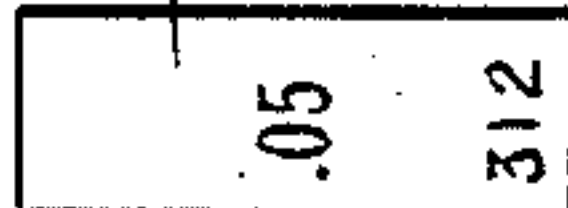
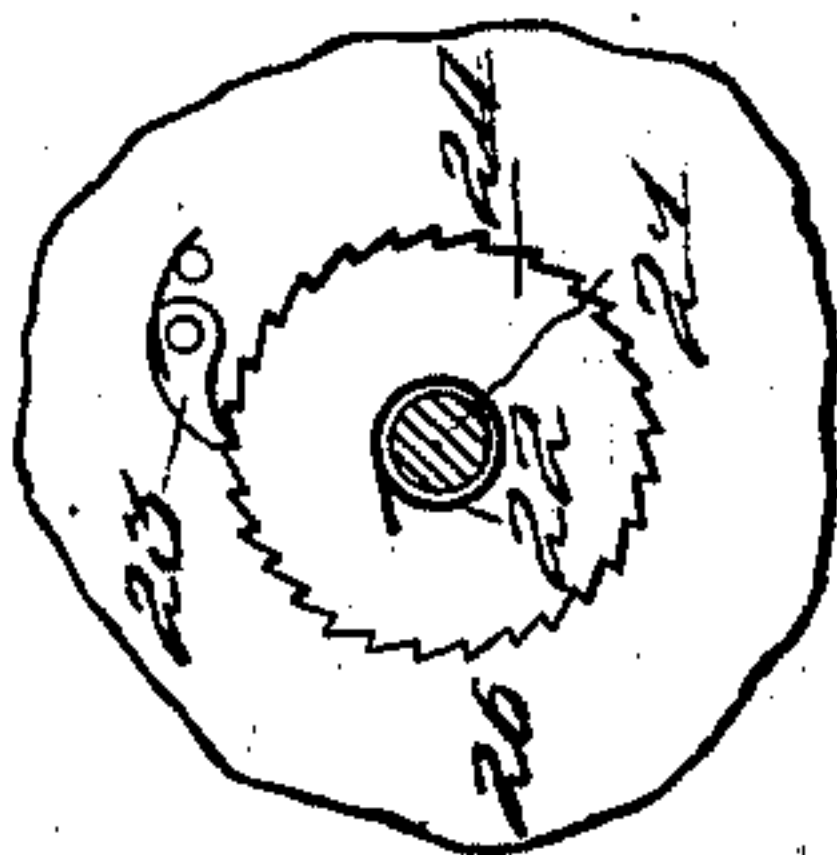
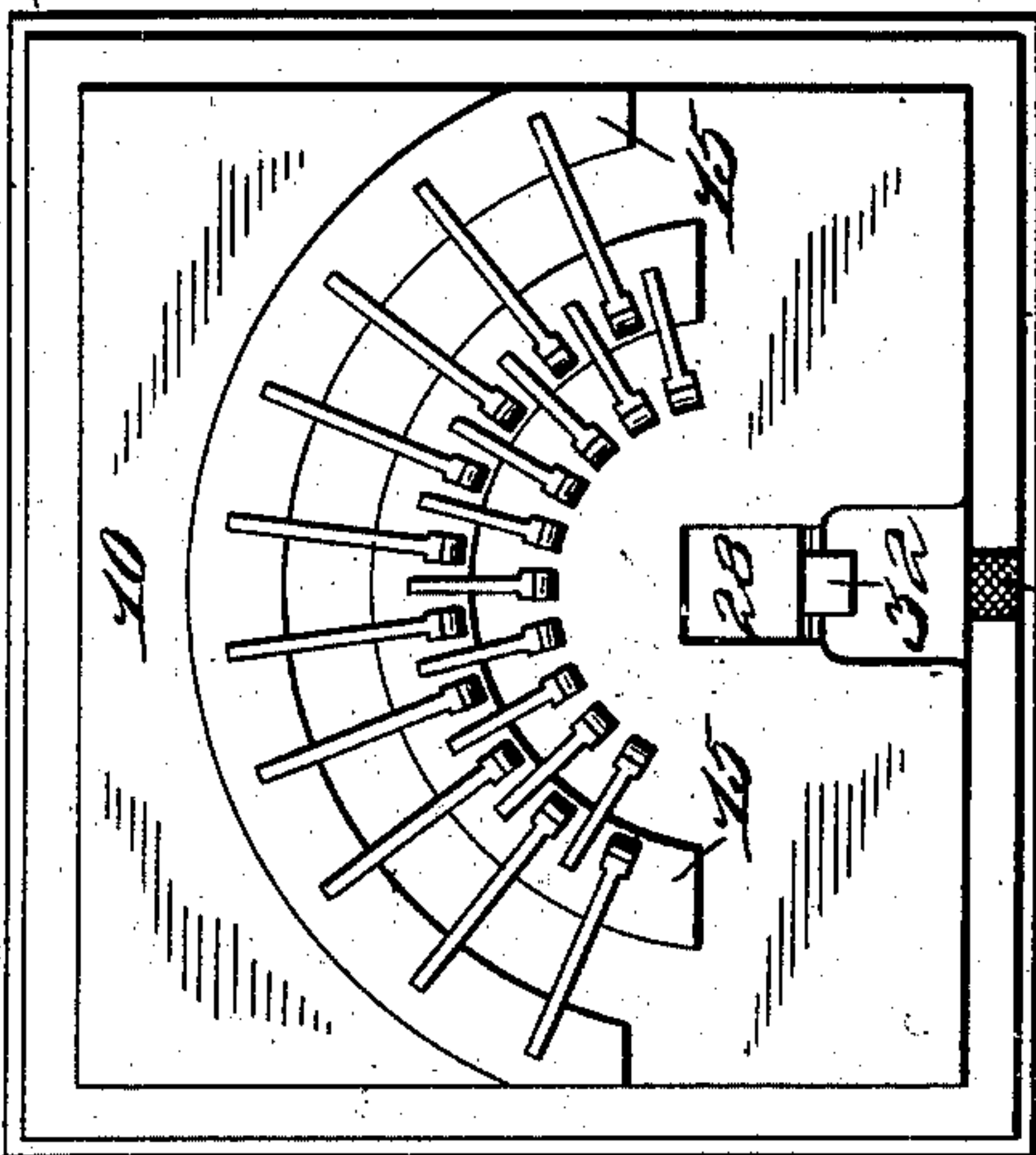


FIG. 4.



Witnesses

W. McCarthy
Ira Berkström

Inventor
Francis C. Osborn
By Alvaro Macaulay
Attorney

UNITED STATES PATENT OFFICE.

FRANCIS C. OSBORN, OF DETROIT, MICHIGAN, ASSIGNOR TO NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TICKET-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 752,704, dated February 23, 1904.

Application filed October 25, 1901. Serial No. 79,936. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS C. OSBORN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Ticket-Printing Machines, of which I declare the following to be a full, clear, and exact description.

My invention relates to improvements in ticket-printing machines.

The object of the invention and the special features will be more particularly pointed out in the following specification and in the appended claims.

Referring to the drawings, Figure 1 shows a top plan view of my invention. Fig. 2 shows a front elevation. Fig. 3 is a vertical section. Fig. 4 is a face view of the check. Fig. 5 shows the retaining-pawl and ratchet-wheel which hold the motor-spring in check.

Referring to the drawings, the numeral 10 indicates the rectangular case of the machine. The type-bars are arranged to two series 11 and 12, which are concentric, and the types 13, of which one is carried by each type-bar, are arranged when depressed to strike all upon the same spot, which might be called the "printing-point." Each type-bar is pivoted at its lower end upon journals 14, supported in suitable brackets 15 on top of the case 10. Leaf-springs 16 are fastened at their lower ends, and the upper end of each bears against the inner side or edge of its respective type-bar, thereby holding it in normal position and returning it to normal position when displaced therefrom. The type-bars are arranged to be swung down manually, so as to print a ticket, which is automatically presented at the printing-point.

The tickets are stored in an inclined magazine 17, carried at the upper end of a rigid support 18. Within the case 10 and behind the magazine is a standard 19, which about centrally has a long bearing 20, through which passes the winding-rod 21, upon which within said bearings is the coiled motor-spring 22. The retaining-pawl 23 and coöperating ratchet 24 are provided, so that the motor-spring will

remain wound until released by the operation of the machine. The winding-shaft extends 50 entirely through the machine, and upon its projecting front end it is provided with a turn-button 25, and by turning said button the motor-spring may be wound. At its rear end the motor-spring has a fixed connection 55 with a fixed portion of the journal or standard. Its front end, however, is connected to the ratchet 24, which is fast upon the shaft 21. This ratchet coöperates with a retaining-pawl 23, mounted upon a conveyer consisting 60 of a disk-shaped rear wall 26 and a cylindrical wall 27.

The tickets 32, as best shown in Fig. 3, are mounted in the incline magazine-trough 17 and are forced downward against the cylindrical wall 27 of the carrier by weight 17^b, mounted in the trough above them.

The endlessinking-ribbon 28 passes entirely about the outer periphery of the cylindrical wall, and the slack from said ribbon is taken 70 up by a roller 29 in any well-known manner. Projecting inwardly from the inner periphery of the cylindrical wall are a number of feed projections 31, arranged at such distances from each other that there is just room enough to 75 admit a single ticket 32 between them. The ticket is so long that it projects toward the front beyond the edge of the cylindrical wall, as shown in Fig. 3, whereby it may be grasped 80 and removed after the printed impression has been made upon it. Concentric with the cylindrical wall and separating it by a space just sufficient to permit a ticket to pass between them is the curved shield 33, which extends 85 from the lower end of the magazine 17 up to and slightly beyond the printing-point. Just to the left of the printing-point (shown in Fig. 2) the shield is provided with a stop projection 34, so placed that when a ticket has been forced against it by the turning of 90 the conveyer the ticket will be stopped just over the printing-point, so that when any key is thrown down it will receive the printed impression upon it.

In the operation of my machine after the 95 motor-spring 22 has been wound up the maga-

zine 17 is filled with tickets. Then the conveyer may be revolved enough steps to bring the first of the tickets over the printing-point—that is, at the upper end of the curved shield

5 33. As the tickets are moved around against the shield 33 the first one finally abuts against the stop projection 34, while on the opposite side it contacts with that one of the feed projections which is next upon its right. In other
10 words, the feed projection contacts with the right-hand side of the check and the stop-projection 34 with the left-hand side of the check. The conveyer or carrier is thereby held until the check is removed by the operator, who
15 does so manually by taking hold of the projecting end, as shown in Fig. 3. Then the motor-spring turns the carrier until another check is presented to the printing-point, and there it stops the turning of the conveyer until that
20 check also is removed, &c.

The operation of my machine therefore is partly automatic, and it will readily be seen that the devices can be operated very readily. The operator is not expected to seize the up-
25 per end of the type-bar and bring it entirely down by hand; but he will more frequently give the desired type-bar a sudden impulse with his finger, whereupon its momentum will carry it down and cause it to strike the
30 ink-ribbon hard enough to make its printed impression upon the paper ticket below.

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

35 1. In a machine of the class described, the combination with the type-bars, each carrying type and all arranged to strike a common printing-point, of a ticket-magazine, and an automatically-operating conveyer arranged
40 when released to move the tickets successively from the magazine to the printing-point of the machine.

2. In a machine of the class described, the combination with a series of type-bars, each
45 carrying type arranged to print its designating-numeral, of a stationary magazine, and an automatic spring-actuated conveyer arranged to move the tickets from the magazine to the printing-point of the machine when said conveyer is released.
50

3. In a machine of the class described, the combination with the type-bars, each carrying a type and having a common printing-point, of a ticket-carrier, a spring tending normally
55 to move the ticket-carrier, and means whereby

the tickets in the carrier hold the carrier in check until the ticket which has been printed upon is removed, whereupon the carrier automatically moves far enough to present a fresh ticket at the printing-point. 60

4. In a machine of the class described, the combination with the pivoted type-bars having a common printing-point, a stationary magazine arranged to be filled with tickets, a conveyer, a motor-spring tending to move the
65 conveyer in one direction, and projections on the conveyer arranged to engage the tickets in the magazine and move them to the printing-point.

5. In a machine of the class described, the combination with type-bars having a common printing-point, of a stationary ticket-magazine, and a conveyer for moving the tickets from the magazine to the printing-point, which conveyer consists of a movable cylinder having
75 projections upon the inner periphery of its cylindrical wall and a shield concentric with the cylindrical wall and extending from the end of the magazine to the printing-point.

6. In a machine of the class described, the combination with a printing mechanism of an automatically-operating ticket-carrier and means engaged by the ticket for arresting the carrier, whereby the carrier is released to
85 move forward when a ticket is withdrawn.

7. In a machine of the class described, the combination with a printing mechanism of a spring-actuated ticket-conveyer, means engaged by the ticket for arresting the conveyer, whereby said conveyer is released when a
90 ticket is withdrawn.

8. In a machine of the class described, the combination with a printing mechanism, of a rotary ticket-conveyer, means for automatically rotating the conveyer when released and
95 devices for releasing the conveyer when the ticket is withdrawn therefrom.

9. In a machine of the class described, the combination with a printing mechanism, of a ticket-conveyer, a magazine feeding tickets to
100 said conveyer, means for automatically operating the conveyer when released and means for permitting the conveyer to operate until a ticket is brought to printing position.

In testimony whereof I affix my signature in
105 the presence of two witnesses.

FRANCIS C. OSBORN.

Witnesses:

S. E. THOMAS,

FRANK A. DUWE.