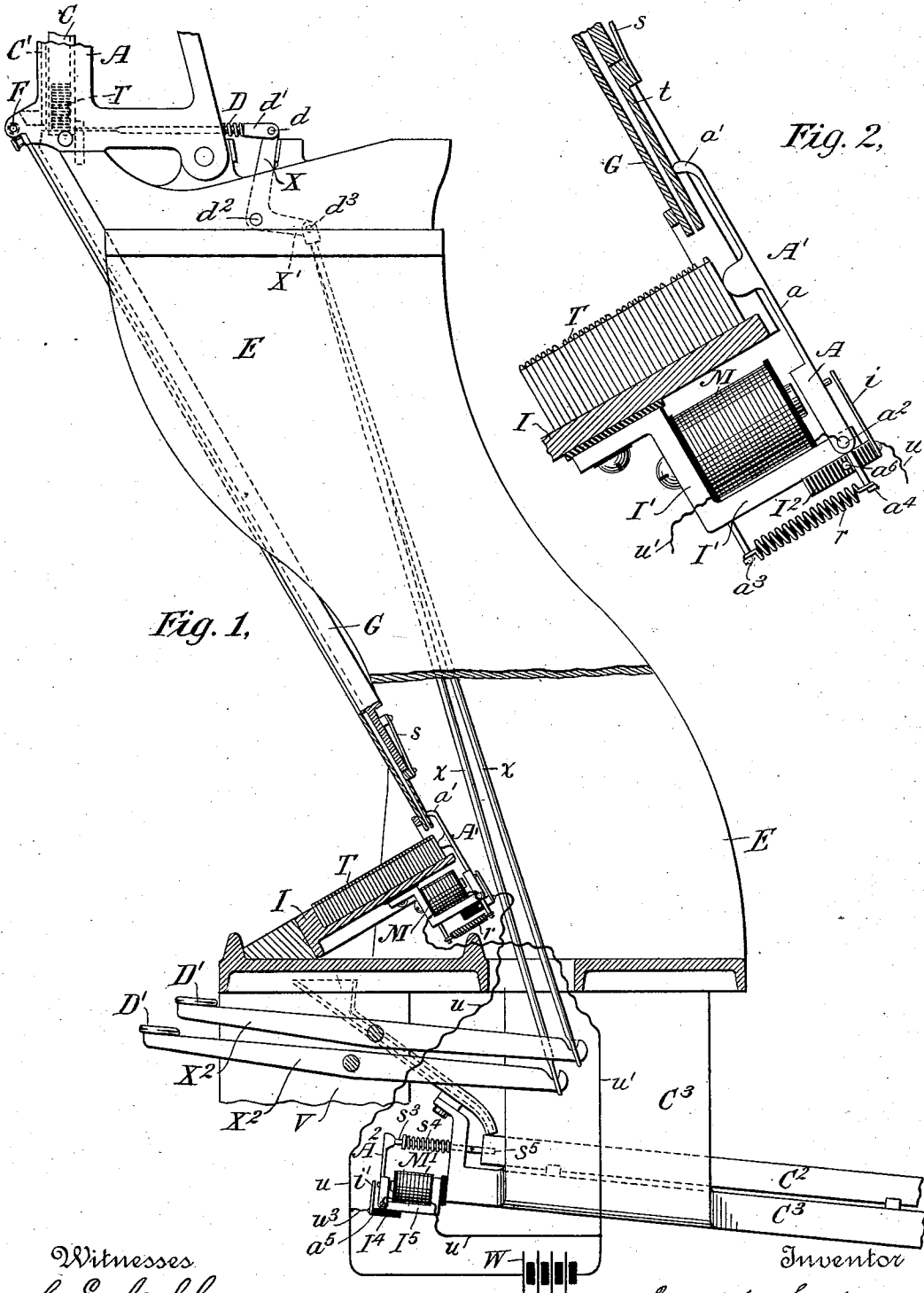


(No Model.)

J. SACHS.
ELECTRIC TYPE SETTING MACHINE.

No. 567,256.

Patented Sept. 8, 1896.



Witnesses
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JOSEPH SACHS, OF NEW YORK, N. Y.

ELECTRIC TYPE-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 567,256, dated September 8, 1896.

Application filed December 24, 1894. Serial No. 532,767. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SACHS, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented new and useful Improvements in Electric Type-Setting Machines, of which the following is a specification.

My invention relates to an improvement in apparatus for facilitating the discharge and assembling of type from type-setting machinery.

The invention is primarily applicable to that class of type-setting machinery in which a vertical case is used, resting upon a cradle, standing upon a supporting-bar and containing the type in channels, and from which the type is removed by the insertion of a type-plunger operated by the depression of a key, and in which the type on being released passes by gravity down a suitable groove or channel in the back plate of the machine and drops into a raceway, where it is assembled.

The object of the present invention is to provide devices for facilitating the discharge of the type from the grooves by overcoming the momentum of the type and friction in the groove and for facilitating the assembling of the type in the raceway, and for pushing the spaces ahead after removal from the raceway, by means of devices which are operated by an electromagnetic current.

The invention will be best understood by reference to the accompanying sheet of drawings, in which—

Figure 1 is a vertical section of a portion of a type-setting machine, showing the back plate and the assembling-race, showing the invention applied thereto; and Fig. 2, an enlarged view of the present invention.

Similar letters refer to similar parts throughout both the views.

In the drawings, A is the type-case; G, the type-channel; I, the raceway; E, the frame of the machine; D, the plunger, which terminates in the head d' , pivoted at d to a bell-crank $X X'$, which is pivoted at d^2 in the frame of the machine. The extremity of the arm X' in the bell-crank $X X'$ is pivoted at d^3 to a rod x , which in turn is connected to the levers $X^2 X^3$, which terminate at their outer extremity in the ordinary finger-pieces D D'.

The grooves in the back plate converge at the bottom and terminate just above the raceway I in a triangular gate t , Fig. 2, which is loosely held in position by a spring s , as shown in the drawings.

For the purpose of pushing the type as it emerges from the plate G into the raceway, a pusher A, of the shape shown, is provided, which is connected with a rod a to the armature A of a suitable electromagnet M, supported below the raceway by means of a frame I, which forms part of the magnetic circuit and to which the armature of the magnet is pivoted at the point a^2 , as shown in Fig. 2. Below the frame a block of insulating material I^2 is fastened, and at the end of this block of insulating material nearest to the armature of the electromagnet is fastened a spring-contact, which is in contact with the contact-point on the armature of the electromagnet when the armature is farthest from the pole of the magnet. At the lower end of the armature is a small arm a^4 , to the end of which a spring r is attached, connected to an arm a^3 , rigidly attached to the frame I' , so that the armature is normally held away from the pole of the magnet and the contact-point thereof in contact with the interrupter i . As shown in Fig. 2, the magnet has just attracted the armature and broken the contact between the interrupter and the armature.

The rod is carried beyond the pusher A' and bent in, as shown, to the point a' , so as to push against the gate t . This arm, however, may be connected to the gate instead of simply loosely pushing against it.

One end of the coil of the electromagnet M is connected to one pole of a battery W, or electric generator of suitable character, and the other terminal of the coil of the electromagnet M is connected to the armature A, and from thence to the contact-point on the armature to the interrupter i , which in turn is connected to the other pole of the battery W, thereby forming a complete circuit.

The operation of the device is as follows: When the current is sent through the electromagnet, the magnet is energized, attracting its armature, but as soon as attracted the circuit is broken at the interrupter and thereby a vibratory movement of the armature and

its parts is caused in the same manner as the vibration of the armature of an electric bell. In this way, by the continuous vibration of the armature, the triangular gate at the bottom of the raceway is kept in slight vibration, and the pusher, which also vibrates, is continuously pushing the types ahead as they leave the gate, the object of the gate being simply to break the fall of the type by slightly catching them as they leave the slides in the upper raceway.

For the purpose of facilitating the removal of the spaces which from time to time have to be removed from the type assembled in the raceway, and while they are being justified, a supplemental raceway C², supported upon the frame C³, is provided, into which the space-chute discharges. A plunger s³ is provided, passing through the extremity of the frame-work C³ into the supplemental raceway C² and terminating at the point s⁵. A spring s⁴ surrounds the plunger s³, which is in turn attached to an armature A² of an electromagnet M', which is arranged upon a frame I⁵, similar to the frame I'.

I⁴ is a block of insulating material, and i' is an interrupter.

The electromagnet M' is connected to the battery by a circuit substantially similar to that above described, and, by the continuous vibration of the armature A², the pusher s³ is vibrated forward and withdrawn by the action of the spring, and the spaces, as they enter the supplemental raceway C³, are continuously pushed forward in line. Both of these devices can be kept continuously operating or can be arranged to operate separately and independently.

In some cases it may not be deemed desirable to vibrate the gate at the lower extremity of the back plate. In such cases the upper arm a' of the armature A may be cut off and the

type-pusher A alone operated by the magnet. The upper arm a' may also be in the form of a spring of suitable construction, or, in fact, any other form of device on the armature may be used that will accomplish the same result, and any other suitable form of electromagnet and interrupter may be used.

I claim as my invention—

1. In a type-setting machine, the combination substantially as above set forth, with the back plate at the point where the type-channels converge, of a gate arranged to be vibrated; an electromagnet, placed in a suitable circuit; an armature on the magnet, which continuously vibrates the vibrating gate, when the magnet is energized, and an interrupter in the circuit, whereby a continuous vibratory movement is given to the armature and the gate vibrated.

2. In a type-setting machine, the combination with the raceway and the back plate, of a vibrating gate placed at the lower extremity of the back plate; an electromagnet placed in a suitable circuit, an armature to said electromagnet, an interrupter in the circuit, a pusher which pushes the type as it emerges from the gate into the raceway, means for causing the gate to vibrate in connection with the pusher on the armature; and devices for withdrawing the armature, whereby the armature continually causes the pusher and the gate to vibrate, and the type, upon being discharged, to be continuously pushed forward into the raceway.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 21st day of December, 1894.

JOSEPH SACHS.

Witnesses:

WILLARD PARKER BUTLER,
T. LUDLOW CHRYSTIE.