

**No. 702,457.**

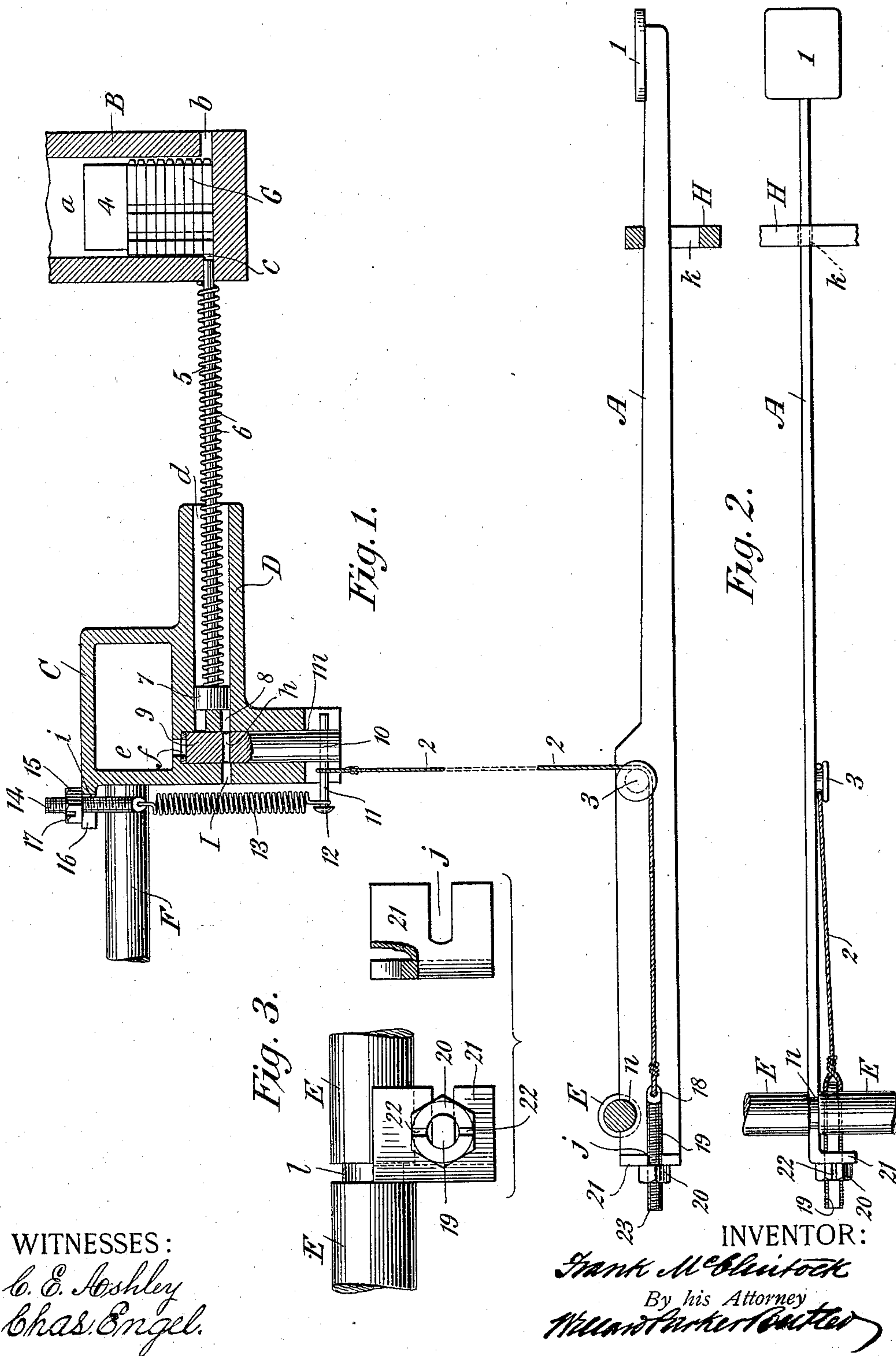
Patented June 17, 1902.

**F. McCLINTOCK.**

# KEY MECHANISM FOR TYPE SETTING MACHINES.

(Application filed May 12, 1900. Renewed Jan. 16, 1902.)

(No Model.)



WITNESSES :

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*By his Attorney*

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# UNITED STATES PATENT OFFICE.

FRANK McCLINTOCK, OF MOUNT VERNON, NEW YORK, ASSIGNOR, BY  
MESNE ASSIGNMENTS, TO EDWIN C. HOYT AND FELIX ROSEN, OF  
NEW YORK, N. Y.

## KEY MECHANISM FOR TYPE-SETTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 702,457, dated June 17, 1902.

Application filed May 12, 1900. Renewed January 16, 1902. Serial No. 90,063. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK McCLINTOCK, a citizen of the United States, and a resident of the city of Mount Vernon, in the county of Westchester, in the State of New York, have invented a new and useful Improvement in Key Mechanism for Type-Setting Machines, of which the following is a specification.

My invention relates to improvements in means for connecting the key-levers and the type-ejecting or releasing devices in key mechanisms for type-setting or linotype machines.

The improvement is primarily an improvement upon the method of connecting the key-levers shown as supplied to the key mechanism patented by me by Letters Patent issued to me on the 23d day of January, 1900, numbered 641,875, in which the depression of the key operates to open a valve, which in turn admits compressed air to operate the type-ejecting elements. The present improvement may, however, be used in connection with any other mechanism without regard to the particular construction or form thereof.

In key mechanisms of the character of that which is described in the aforesaid patent it is very desirable that the downward movement or stroke of all the keys should be as uniform and as short as possible and yet be sufficient to communicate the necessary movement to the connected ejecting devices. Direct connecting wires or rods, which consist of a single piece extending in a straight line from the keys to the ejecting devices, where they can be used, best meet these requirements. In the form of connections heretofore used adjustable turnbuckles have been employed for the purpose of lengthening or shortening the connecting-wires in order to secure the proper and uniform tension. This requires that the connecting-wires be composed of two or more shorter parts joined by these turnbuckles, which very much increases the work of assembling and properly adjusting the parts, and the wear at the many connecting points is much greater than when direct connecting-wires are used, thus necessitating a greater stroke of the key to insure

the same movement of the operative elements. These turnbuckles are necessarily so placed that they are inconvenient of access for the purpose of adjustment.

The object of my improvement is to provide flexible connecting-wires extending continuously from the key-levers to the ejecting devices and also to provide a conveniently-located adjusting-screw for readily and accurately altering the length of the connecting-wires.

The invention will be best understood by reference to the accompanying sheet of drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of the mechanism, showing the connection between the key and the ejecting mechanism; Fig. 2, a plan view of the key-lever; and Fig. 3 an enlarged detailed view of the rear end of a single key-lever, showing more clearly the adjusting-screw.

Similar reference characters refer to similar parts in each of the views.

In the drawings, *a* represents a single compartment of the type-case *B*, in which the type are held; *G*, a line of type in that compartment held by the follower-block 4; *C*, the compressed-air chamber; *D*, one of the cylinders, in which the piston 7, attached to the rod 5 of the type-ejecting mechanism, operates by means of the valve-rod 10; *F*, the pipe, through which the compressed air is supplied to the interior *e* of the chamber *c*, all of which elements are shown in the aforesaid earlier patent, the action of which will be readily understood therefrom and which play no part in the present invention.

*A* is one of a series of key-levers made of metal of the ordinary form, which, however, instead of being pivoted to the horizontal rod *E* are each provided at the extremities with a circular cut *n*, cut in the upper ledge of the key-lever *A* and arranged to fit in a corresponding cut *l* in the rod *E*. As a result of this construction the upward tension of the wire 2, which effects the connection between the key-lever and the discharging mechanism, is such that the key-lever *A* is securely held in contact with the rod *E*, and when the wire



is disconnected, in the manner hereinafter referred to, any one of the key-levers may be readily removed without disturbing the others, which would necessarily be the case if the key-levers were pivoted to the rod E. It will be observed that when the finger-plate 1 of the lever A is depressed the ejecting mechanism is actuated precisely in the same manner as shown and described in the aforesaid patent. In the present invention, however, the difficulties above set forth are overcome by constructing the inner ends of lever A in the manner particularly shown in the plan, Fig. 2. Here, as will be seen, the lever is carried out at the rear end beyond the rod E and is bent over so that its end 21 forms a right angle with the sides of the lever. The bent end of the lever is provided with a slotted opening *j*, through which passes a flat screw 19, which slides easily through the opening *j* on the flat faces 23 and 24. A screw-nut 20 is provided, screwing over the thread of the screw 19, so that it may be held in any desired position with reference to the bent end of the lever. A grooved stud 3 is provided, attached to the side of the lever, as shown in Figs. 1 and 2, and instead of the permanent wire connection between the lever and the valve-rod 10 a flexible wire cord 2 is provided, attached to the pin 11 of the valve-rod, as shown in Fig. 1, at one end and to an eye 18 in the screw 19 at the other end. The nut 20 may be turned upon the screw 19 by means of a fork inserted in the slots 22. In this way by turning the nut to the right or the left the tension of the cord 2 may be readily regulated from the rear end of the machine without disturbing or disconnecting

any of the parts of the machine. All of the levers in the machine are of the same construction, and as a result thereof it is possible to regulate the tension of each particular lever and effect independent adjustment without disturbing or disconnecting a single part of the machine. After the connecting-wire has been secured by means of the adjusting-screw at the correct length, if for any reason it should be desired to disconnect the key-lever and the wire, the screw, without disturbing the nut 20, can be slipped out through the open side of the slot *j* and again replaced without change of the adjustment.

I claim as my invention—

1. In combination with a key-lever, means for causing the operation of type-ejecting mechanism, a flexible connecting-wire whereby the movement of the key-lever is imparted to the type-ejecting mechanism, and means substantially as described, located at the rear end of the said key-lever for adjusting the length of the wire.

2. In combination, a key-lever notched at the inner end as shown, means for causing the operation of type-ejecting mechanism, a flexible connecting-wire, and flat adjusting-screw to which said wire is attached fitted in an open slot at the rear end of the key-lever for adjusting the length of the wire.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 10th day of May, 1900.

FRANK McCLINTOCK.

Witnesses:

WILLIAM B. CELIO,  
WILLARD PARKER BUTLER.