

(No Model.)

A. W. CASH.  
TYPE WRITING MACHINE.

No. 427,500.

Patented May 6, 1890.

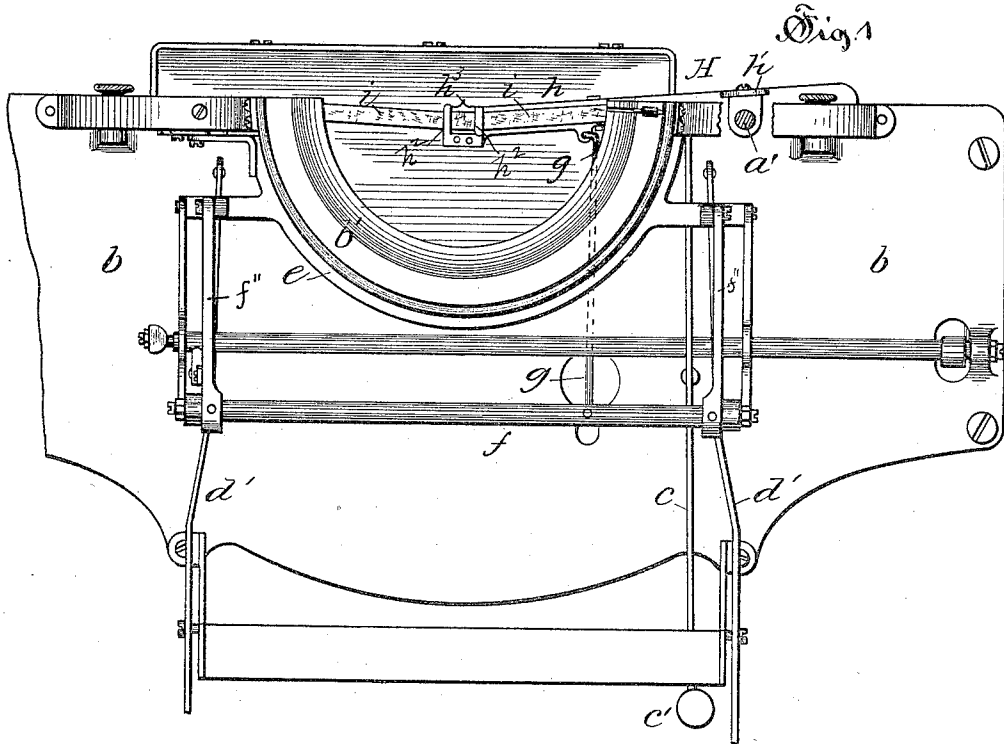


Fig. 1

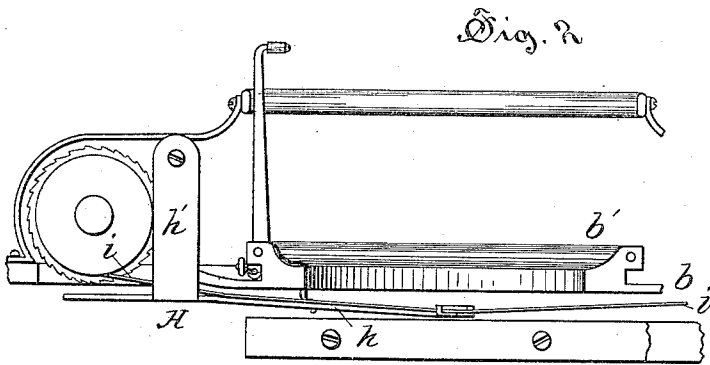


Fig. 2

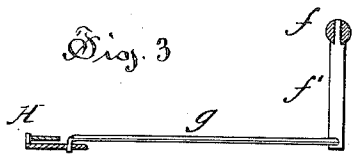


Fig. 3

Witnesses:

A. R. Williams.  
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# UNITED STATES PATENT OFFICE.

ARTHUR WISE CASH, OF BRIDGEPORT, ASSIGNOR TO THE TYPOGRAPHIC COMPANY, OF HARTFORD, CONNECTICUT.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 427,500, dated May 6, 1890.

Application filed November 28, 1888. Renewed March 28, 1890. Serial No. 345,632. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR WISE CASH, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My within-described improvement relates more particularly to a type-writing machine of the general construction shown and described in my patent of November 1, 1887, No. 372,602, in which a reciprocating ribbon-guide is employed to move the ribbon sidewise to cover and uncover the point upon which the type is caused to strike; and the object of my improvement is to provide a movable ribbon-guide that will move the ribbon sidewise with greater ease and accuracy and by simpler means than is shown in the patent above referred to.

My invention consists in the combination, with the frame of the machine, of a key-lever, the rock-bar, a rod connecting the said rock-bar with a swinging guide that is pivotally supported at one end on the frame and extends along the front of the machine in the direction in which the ribbon runs, and that bears on its outer end a ribbon-guide; and it further consists in details of the several parts of the apparatus and their combination, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a plan view of so much of a type-writing machine as is necessary to illustrate the location and method of operation of my improvement. Fig. 2 is a detail view, in rear elevation, of a part of a type-writing machine, showing my improved attachment and the directly-related parts. Fig. 3 is a detail view showing the rock-shaft, ribbon-guide, and connected parts.

In the accompanying drawings, the letter *b* denotes the top plate of the base or frame of the machine; *b'*, the type-base borne on the top plate *b*, that also supports the key-levers *c*, with the usual key *c'* and the space-bar. A bearer *e* extends across the inner ends of all

of the key-levers and of the space-bar lever *d'*, and is pivotally connected to the front ends of the arms *f''*, that are fast to a rock-bar *f*, that makes a partial rotation each time a key-lever or the space-bar is depressed. An arm *f'* extends downward from this rock-bar *f* through an opening in the top plate of the machine, and is connected by a rod *g* to the side of the ribbon-guide H. This ribbon-guide H consists, preferably, of an arm *h*, extending lengthwise of the ribbon, and a vertical arm *h'*, that is pivotally connected to the upright post *a'*, that extends between the top and the base of the frame of the typograph. This arm is held against vertical movement; but is pivoted to rock on the post.

On the outer end of the arm *h* is formed a ribbon-guide *h<sup>2</sup>*, that consists of loops or slots upon opposite sides of an opening. The ribbon *i* extends from the ribbon-reel downward along and overlying the guide-arm, and is threaded through the guide-loops. The outer edge of the guide bears an index *h<sup>3</sup>*, that indicates the exact position upon which the type will strike. The ribbon is wound from one reel to another across the machine in any usual and well-known manner.

By means of the device above described, when a key-lever is depressed the rock-bar is moved so as to throw the arm *f'* toward the key-base, and this moves the ribbon-guide connected to the arm by the rod, as already described, outward, and bears with it the ribbon into a position so that the type-bar that is operated by the depression of a key-lever strikes its type-face directly upon the inking-ribbon, and as soon as the pressure upon the key-lever is removed the latter is lifted, the rock-bar swung back, and the ribbon-guide swung back with it, uncovering the spot upon which the imprint has been made.

I claim as my invention—

1. In a type-writing machine, in combination with the frame, the key-lever pivoted to the frame, a rock-shaft in operative connection with the key-lever, the crank-arm fast to the rock-shaft and connected to the ribbon-guide, and the ribbon-guide pivotally supported on the frame of the machine, with an

arm extending lengthwise of the ribbon and terminating in a guide through which the ribbon is threaded, all substantially as described.

5 2. In a type-writing machine, in combination with the frame, the key-lever pivoted to the frame, the bearer overlying the key-lever and connected to a rock-shaft, a rock-shaft with the crank-arm and connecting-rod that  
10 unites the rock-bar and the ribbon-guide, and

the ribbon-guide pivotally supported on the frame of the machine, with an arm extending lengthwise of the ribbon and terminating in a guide through which the ribbon is threaded, all substantially as described.

ARTHUR WISE CASH.

Witnesses:

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