(No Model.)

A. W. STEIGER.

TYPE WRITING MACHINE.

No. 411,623. Patented Sept. 24, 1889.

Fig. 1.

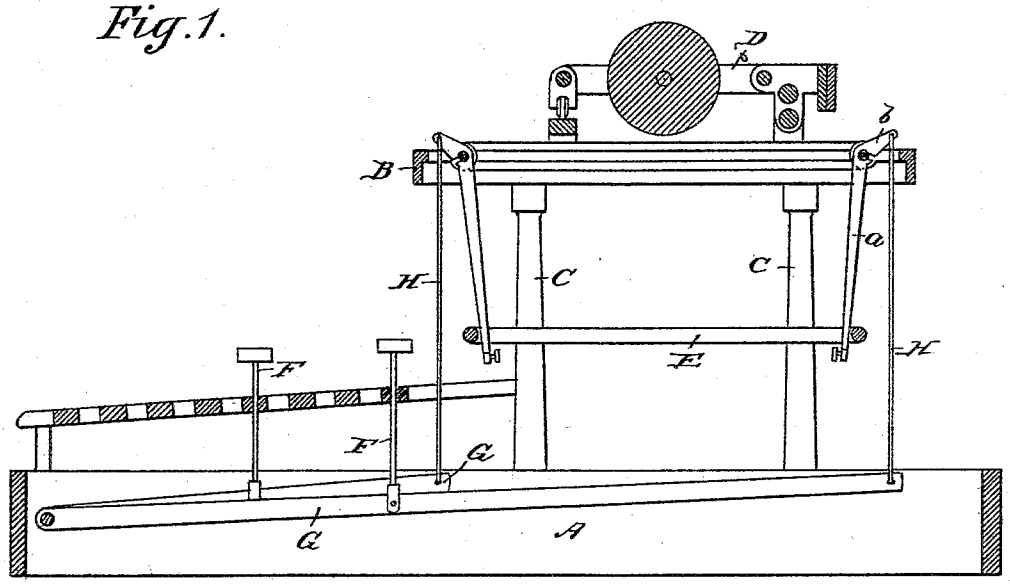


Fig. 2.

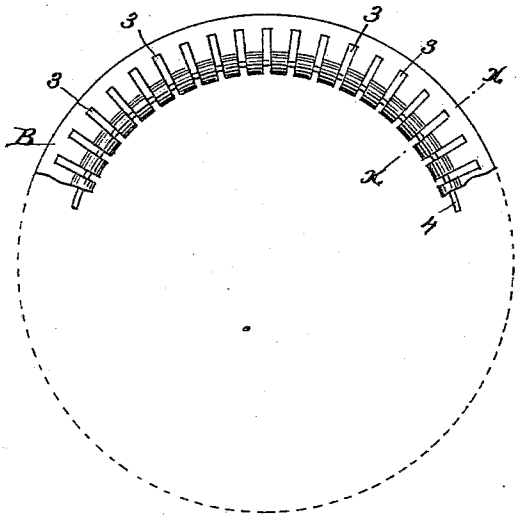


Fig. 4.

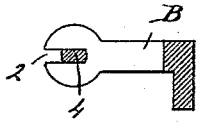


Fig. 5.

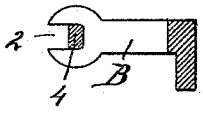


Fig. 3.

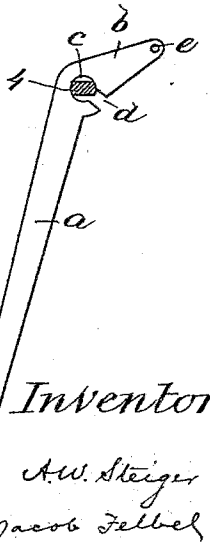
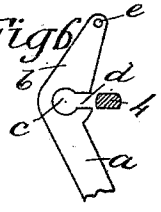


Fig. 6.



Attest:

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UNITED STATES PATENT OFFICE.

ANDREW W. STEIGER, OF NEW YORK, N. Y., ASSIGNOR TO THE YOST WRITING MACHINE COMPANY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 411,623, dated September 24, 1889.

Application filed March 31, 1888. Serial No. 269,048. (No model.)

To all whom it may concern:

Be it known that I, ANDREW W. STEIGER, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to a mode of assembling the type bars or levers of type-writing machines, and has for its main objects to provide a construction whereby the usual individual hangers are dispensed with, thus economizing greatly in cost, and whereby the type-bars may be speedily assembled in position and without liability of accidental displacement during transportation or use of the machine.

To these main ends my invention consists in the features of construction and combinations of devices hereinafter more fully described, and particularly set forth in the appended claims.

In the accompanying drawings, Figure 1 is a vertical section of a type-writing machine embodying my invention. Fig. 2 is a partial plan of the type-ring and type-bar fulcrum-ring. Fig. 3 is a side view of a type-bar mounted upon the fulcrum-ring, the latter being shown in section. Fig. 4 is a vertical section taken at the line *x x* of Fig. 2. Fig. 5 shows in similar section a modification of the invention. Fig. 6 is a sectional elevation to illustrate the mode of assembling the type-bars.

In the several views the same part will be found designated by the same letter or numeral of reference.

A represents the bed or frame of the machine, and B the type-ring or top plate, supported by posts or pillars C C; D, the usual hinged paper-carriage; E, the type rest or basket; F, the finger-keys; G, the key-levers, and H the connecting-rods attached at their lower ends to the key-levers.

The type-ring or circular top plate B is formed or provided on its inner side with an annular groove 2, and is milled or slotted out vertically and radially, as seen at 3 3, for purposes to be presently explained.

4 represents a fulcrum-ring, preferably flattened on two of its sides, which is inserted within the groove 2 of the top plate for the purpose of supporting the type-bars. Each type-bar is preferably constructed or bent to form two arms *a* and *b*, and at the junction of said arms is made with a circular opening or bearing *c* and with a lateral opening or passage-way *d* communicating therewith, and of less width than the diameter of the opening or bearing. At the extremity of the arm *b* is provided a perforation *e*, for attachment of the upper end of the connecting-rod.

The assembling of the type-bars is performed in the following manner: The fulcrum-ring 4 having been arranged within the horizontal groove or slot 2 in the type-ring, each type-bar is turned out of a working position, as shown at Fig. 6, until the sides of the opening or passage-way *d* come in line or parallel with the flat sides of the fulcrum-ring. The type-bar is then slipped into one of the slots 3 and upon the fulcrum-ring until the latter enters the circular opening *c*, which is made of a diameter equal to or slightly in excess of the width of the fulcrum-ring. The hands being then removed from the type-bar, gravity will operate to carry the same to a position where the passage-way *d* is out of line with the fulcrum-ring, when the type-bar will be securely journaled in place. The sides of the fulcrum-ring upon which the type-bar takes a bearing are rounded or curved to correspond with the curvature of the opening *c*, so as to obtain a smooth and durable working joint.

In practice I assemble all of the type-bars before securing the type rest or basket in position.

By my improvement I am not only enabled to save the great expense of hangers and screws heretofore employed for supporting the type-bars, but am enabled to assemble all of the type-bars in a most expeditious manner and in such a way that during transportation or use of the machine there is no possibility of any type-bar becoming detached from the fulcrum-ring or pivotal support.

In operation the type-bars are vibrated to do the printing in the usual manner, and

hence no description thereof appears to be necessary for those skilled in the art.

In the modification shown at Fig. 5 the groove 2 is enlarged and the fulcrum-ring set therein edgewise.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination of a type-ring provided with a horizontal groove and internal vertical slots radiating from the center of said ring, a fulcrum-ring or pivotal support within said groove, and type carriers or levers having each an eye or bearing and a lateral slot or passage-way leading thereto from the exterior of the lever, substantially as set forth.

2. In a type-writing machine, the combination of a type-ring provided with a groove and internal vertical slots radiating from the center of said ring, a fulcrum-ring or pivotal support within said groove and having two flat sides, and type carriers or levers having each an eye or circular bearing and a lateral slot or passage-way leading thereto of less width than the diameter of the eye or circular bearing, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 16th day of December, A. D. 1887.

ANDREW W. STEIGER.

Witnesses:
JACOB FELBEL,
GEO. W. WEIFFENBACH.