(No Model.)

L. B. HARKNESS & C. E. QUAIFE.

TYPE BAR FOR TYPE WRITING MACHINES.

No. 422,775. Patented Mar. 4, 1890.

Fig. 1.

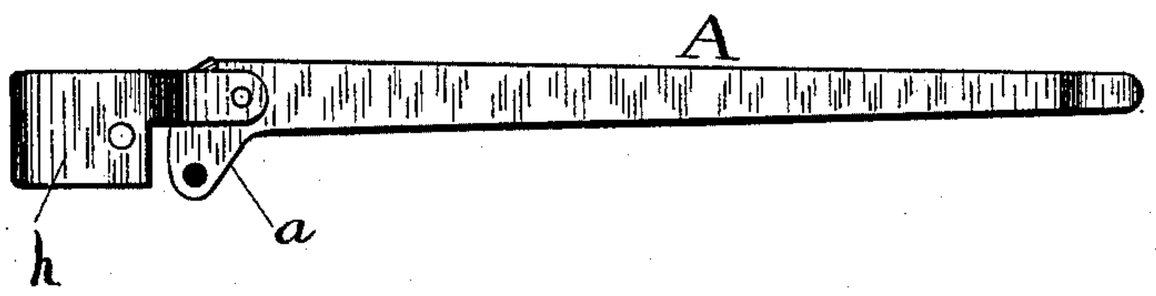


Fig. 2.

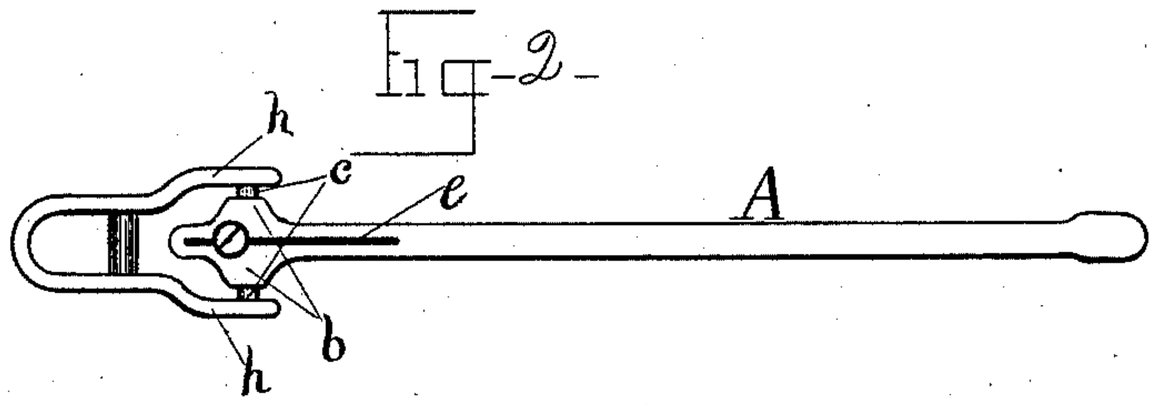


Fig. 3.

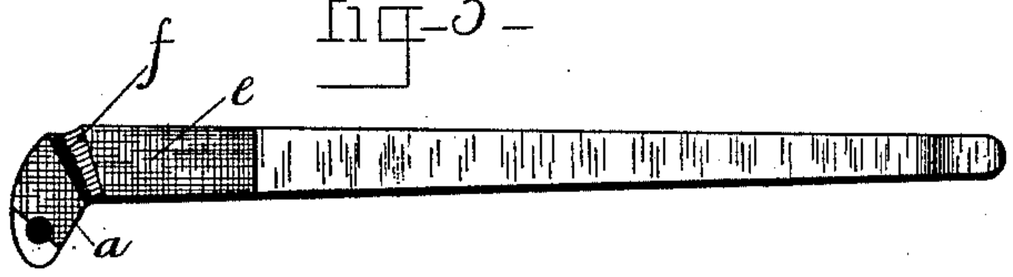
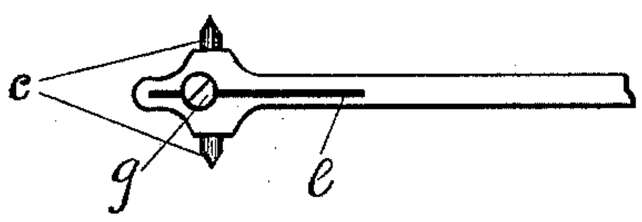


Fig. 4.

Fig. 5.



Witnesses
N. H. Fay
J. D. Fay

Inventors
L. B. Harkness and C. E. Quaife
By their Attorney
Thos. P. Hall

UNITED STATES PATENT OFFICE.

LISLE B. HARKNESS AND CHARLES E. QUAIFE, OF CLEVELAND, OHIO, ASSIGNORS, BY MESNE ASSIGNMENTS, TO SAID HARKNESS.

TYPE-BAR FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 422,775, dated March 4, 1890.

Application filed September 6, 1888. Renewed February 1, 1890. Serial No. 338,846. (No model.)

To all whom it may concern:

Be it known that we, LISLE B. HARKNESS and CHARLES E. QUAIFE, citizens of the United States, and residents of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Type-Bars for Type-Writing Machines, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

Our invention consists in a device for taking up the lost motion in type-writer bars.

It is well known that in type-writers employing type-bars, like the Remington machine, the bar, where journaled in the hanger, wears and becomes loosened, and, as a result, when operated upon throws to one side or the other out of true alignment. It is to take up this play or lost motion that our device is designed. We employ a bar slotted for a short distance on either side of its pivotal point or point of journaling, and thread into said slot a conical screw. As the screw is turned up, it is evident that the side walls of the slot are forced outwardly and the conical pivots or journals of the bar caused to engage closely with the hanger in which they are journaled, and all lost motion is thus obviated.

The utility and simplicity of the device and the ease and certainty with which it may be operated are apparent at a glance. It may readily be applied to any machine now in use, all that is required being to form the slot in the bar by sawing through the latter or otherwise cutting the same. An opening is then tapped out for the conical screw and the latter inserted in the said opening.

Referring to the drawings, Figure 1 is a side elevation view of the hanger and bar. Fig. 2 is a plan view of the hanger and bar. Fig. 3 is a side view of the hanger, one side wall of the slot being sectioned away. Fig. 4 is a detail view of the conical screw. Fig. 5 is a detail view of the type-bar, showing the pivots.

A is a type-bar provided at its rear end with the angular portion *a*. The shoulders *b* project from either side of said bar, and the pivotal lugs or journals *c*, the extremities of which are of conical form, project outwardly from the two shoulders, with which they are respectively integral. A central longitudinal slot *e* is cut entirely through the bar on its rear portion from its lower to its upper face by means of a circular saw or in other appropriate way, said slot extending close to but not through the rear transverse end of said bar. A conical-shaped opening *f* is then tapped in the bar at the shoulders, the slot forming the center of said opening, and into this opening is turned the conical screw *g*. When the journals *c* wear loose in the hanger *h* and the operation of the bar is no longer true and accurate, the screw may be turned into its socket, causing the walls *b* of the slot on either side of the same to be crowded outwardly, thus forcing the journals *c* into close bearing contact with the hanger and doing away with all lost motion. The office of said screw is really that of a spreader, and it may be so designated.

The foregoing description and accompanying drawings set forth in detail mechanism in embodiment of our invention. Change may be made therein provided the principles of construction respectively recited in the following claims are employed.

We therefore particularly point out and distinctly claim as our invention—

1. The combination of a type-bar provided with journals and a longitudinal slot, a hanger in which said journals have bearing, the opposite side walls of said slot having, respectively, semi-conical depressions provided with screw-threads, and a conical screw having threaded engagement with the screw-threads of said conical depressions in said side walls of said slot and adapted to increase the width of said slot, substantially as set forth.

2. The combination of a type-bar provided

with conical journals and a central longitudinal slot, said slot terminating short of the rear transverse end of said bar and having one of its side walls provided with a transverse opening, a hanger in which said journals have bearing, and a conical screw fitting in said opening in the side wall and adapted to force apart the longitudinal side walls of said slot, substantially as set forth.

In testimony that we claim the foregoing to be our invention we have hereunto set our hands this 3d day of September, A. D. 1888.

LISLE B. HARKNESS.
CHARLES E. QUAIFE.

Witnesses:
THOS. B. HALL,
J. B. FAY.