

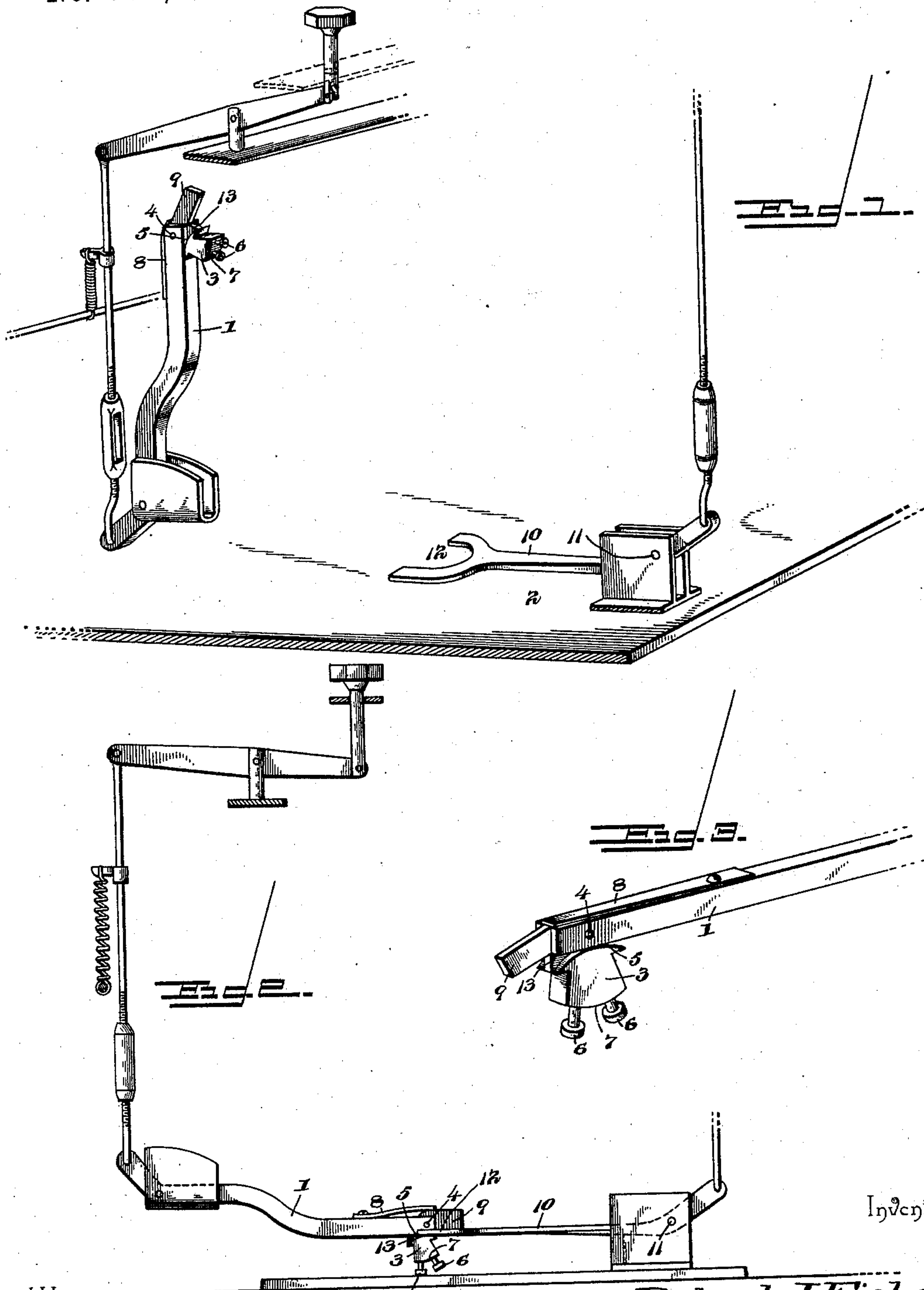
(No Model.)

2 Sheets—Sheet 1.

R. J. FISHER.
TYPE WRITING MACHINE.

No. 580,855.

Patented Apr. 20, 1897.



Inventor

Witnesses

E. H. Stewart
R. J. Fisher

By *his* Attorneys.

Robert J. Fisher

Chas. H. Co.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

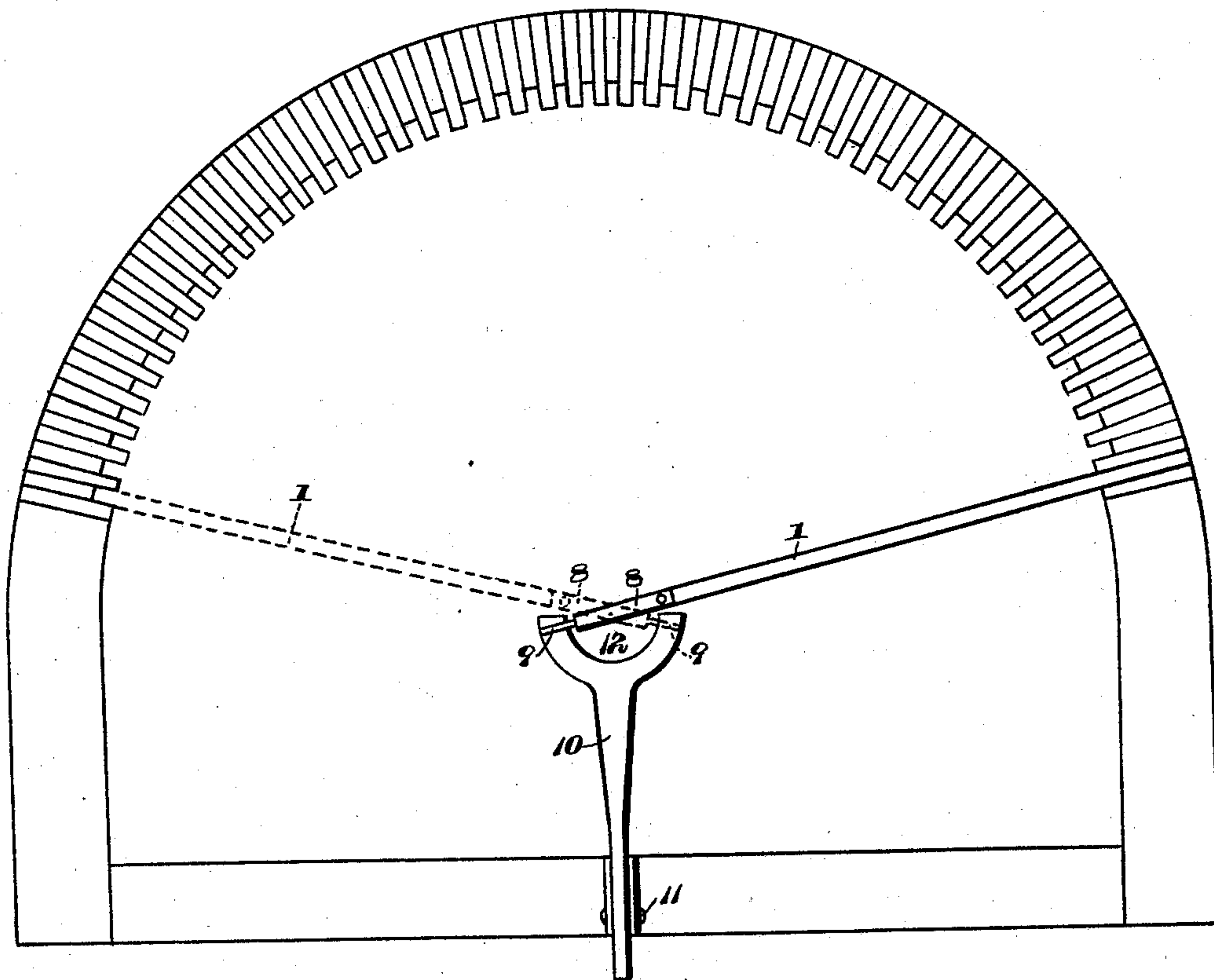
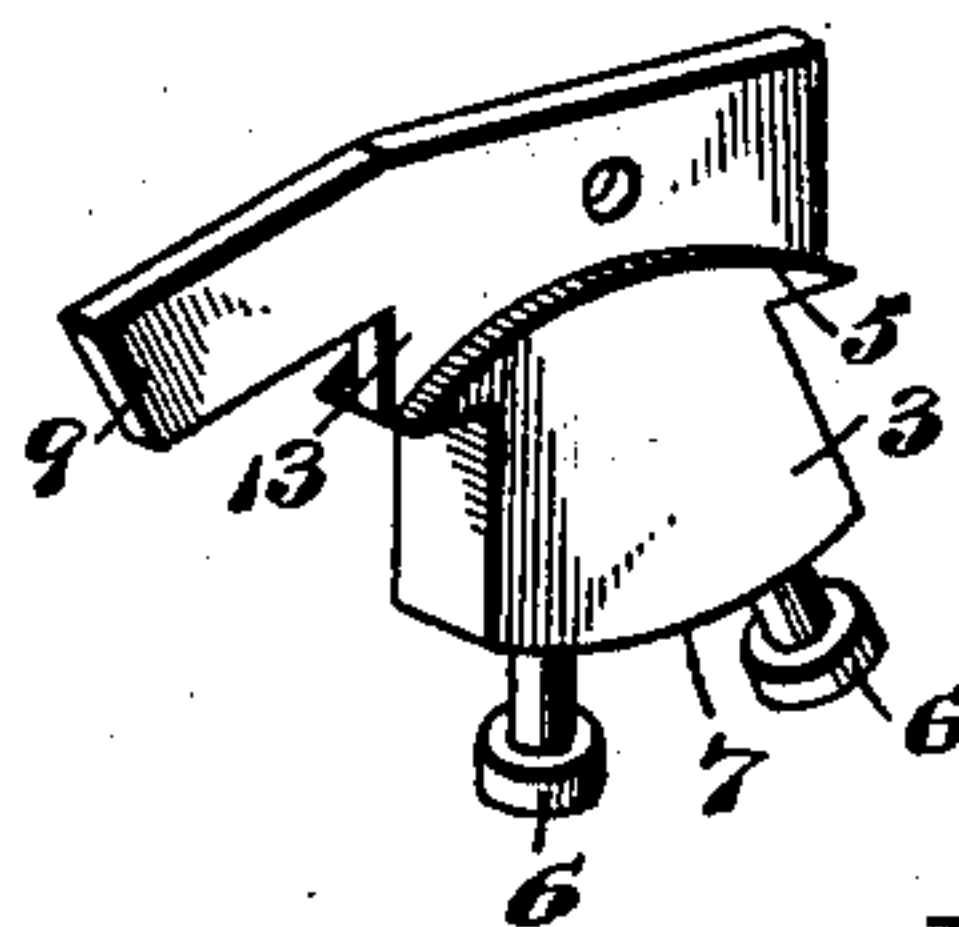


Fig. 5.



Inventor

Robert J. Fisher

By *his* Attorneys,

Chas. Snow & Co.

Witnesses

E. H. Stewart
E. J. [Signature]

UNITED STATES PATENT OFFICE.

ROBERT J. FISHER, OF ATHENS, TENNESSEE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 580,855, dated April 20, 1897.

Application filed April 12, 1895. Renewed May 19, 1896. Serial No. 592,228. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. FISHER, a citizen of the United States, residing at Athens, in the county of McMinn and State of Tennessee, have invented a new and useful Type-Writing Machine, of which the following is a specification.

My invention relates to type-writing machines, and particularly to printing mechanism therefor, the invention having reference to that class of printing mechanisms in which a plurality of type-faces are carried by a single type-head to provide for printing an upper and a lower case character by shifting the type-head.

The object of the invention is to simplify and improve the means for shifting the type-head to produce impressions of the different type-faces and accomplish such shifting movement with a minimum number of operating parts.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a type-bar and connections arranged in operative relation with a shifting arm. Fig. 2 is a side view of the same, showing the type-bar in the striking position and in engagement with the shifting arm. Fig. 3 is a detail view in perspective of the type-head and contiguous parts of the type-bar. Fig. 4 is a plan view in diagram of a type-bar-supporting ring similar to that shown in my former application, Serial No. 530,400, filed November 30, 1894, and showing a shifting arm embodying my invention arranged in the operative position therein. Fig. 5 is a detail view in perspective of the improved type-head detached.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a pivotal type-bar which may be mounted in any suitable manner, but which, in the construction illustrated, is arranged to strike downward upon an approximately horizontal platen, which is indicated at 2, and pivotally connected to the free end of this type-bar is the rocking type-head 3. This head, which is pivoted at 4, is provided

with a convex bearing-face 5, arranged in contact in all positions with the under surface of the type-bar, whereby the pivot is relieved of the jar and strain in operating the type-bar to avoid unnecessary wear and disarrangement of the parts of the mechanism. The type-head bears a plurality of type-faces 6, which are arranged upon the outer convex surface 7 of the type-head and are arranged at an angle to each other and in such positions that when one type-face is arranged to strike the platen the other is held out of contact.

A spring 8 is employed to hold the type-head in its normal position and return it to such position after displacement, said spring being secured to the upper or rear side of the type-bar and bearing upon the rear side of the type-head, and the type-head is provided with a projecting ear or lug 9, which when forced backward at its free end, or in opposition to the striking movement of the type-bar, moves the type-head from the position in which it is normally held by the spring to bring the second type-face into the printing position. The means which I employ for thus repressing or obstructing the movement of the lug or ear toward the platen is a shifting arm 10, mounted for pivotal movement at a point 11 and provided at its free end with a segmental or arc shaped plate 12. The type-heads are depressed through the space which is thus partially inclosed by the segmental or arc shaped plate, and the lugs or ears carried by the type-heads engage the plate and are thus stopped sufficiently to move the type-head against the tension of the return-spring and thereby bring the other type-face into the printing position.

Fig. 4 shows a plan view in diagram of a type-bar-supporting ring and a shifting arm arranged in operative position to engage a lug or ear of a type-head, the arc-shaped plate 12 of the shifting arm being concentric with the printing-point or the point at which the type-heads strike the printing plane, and said arc-shaped plate being disposed oppositely to the type-bar-supporting ring with the open sides of said plate and ring toward each other. This provides for the type-heads striking between the arms of the arc-shaped plate, with the lug or ear on the type-head engaging the plate in the manner hereinbefore described.

The means shown in Figs. 1 and 2 for operating the type-bar may be applied with equal facility to the shifting arm, whereby it may be thrown into operative position or allowed to remain in its normal position out of the path of the ears or lugs on the type-heads, as desired. It is deemed unnecessary to illustrate specifically the means for operating said shifting arm, as it will be obvious that any convenient connections with a key located in or near the keyboard of a machine may be adopted, according to the special construction of the machine to which the invention is applied.

In the construction illustrated the type-head is provided with a reduced tongue 13, which is arranged in the bifurcated extremity of the type-bar, but it is obvious that this construction may be varied without materially departing from the spirit of the invention, and it is equally obvious that various means for operating the type-bar and the shifting arm may be employed, those means referred to being sufficient, however, to illustrate a simple manner of imparting motion thereto.

It will be understood that a single shifting arm may be employed for all of the type-bars in a machine, and hence the segmental or arc shape of the plate carried by said arm whereby type-bars arranged at different angles may swing into the space within the segmental plate and cause the positive engagement of the lugs or ears on the type-heads with the plate.

The segmental shifting plate constitutes a movable stop adapted to be arranged in the paths of the lugs, ears, or projections carried by the plural-faced type-heads, said movable stop being adapted for engagement by the lugs or ears to shift or swing a type-head from its normal position with one type-face in printing position to bring another type-face into operative relation with the printing plane. A common stop for all of the type-bars is employed, all of the type-bars being grouped to strike at a common center or printing-point.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a type-writing machine, the combination with type-bars grouped to strike at a common printing-point and means for operating the same, of rocking, plural-faced, type-heads, yielding means for normally holding each type-head with one type-face in the printing position, a movable stop for temporary disposal in the path of projections on the type-heads, the engagement of one of said projections with the stop operating to swing the head against the tension of its yielding means to bring the other type-face

temporarily into the printing position, said head, when released, being immediately returned to its normal position by said yielding means, and operating means for the movable stop, substantially as specified.

2. In a type-writing machine, the combination with type-bars arranged in a segmental series and means for operating the same, of rocking plural-faced type-heads, yielding means for normally holding each type-head with one type-face in the printing position, a shifting arm having a plate for temporary disposal in the path of lugs or ears on the type-heads, the engagement of one of these lugs or ears with the plate operating to swing the head against the tension of the yielding means to bring the other type-face temporarily into printing position, said head, when released, being immediately returned to its normal position by said yielding means, and operating means for the shifting arm, substantially as specified.

3. In a type-writing machine, the combination with type-bars mounted on an arc-shaped supporting-ring and means for operating the same, of rocking plural-faced type-heads, springs for normally holding each type-head with one type-face in the printing position, a shifting arm having a segmental or arc shaped plate adapted for temporary disposal in the path of lugs on the type-heads with its open or concave side facing the open or concave side of the supporting-ring, the center from which the arc of said plate is struck being approximately coincidental with the center from which the arc of the supporting-ring is struck, and the engagement of one of said lugs or ears with the arc-shaped plate operating to swing the head against the tension of its operating-spring and bring the other type-face into the printing position, the head, when released, being returned to its normal position by its spring, and operating means for the shifting arm, substantially as specified.

4. In a type-writing machine, the combination with a type-bar, of a rocking type-head provided with a plurality of type-faces and having convexed shoulders to bear against the front face of the type-bar, whereby the pivot of the type-head is relieved of strain during the use of the mechanism, a spring for holding the type-head in its normal position, a lug or ear projecting outwardly from the type-head, a shifting arm having a segmental or arc shaped plate adapted to be arranged in the path of the lug or ear on the type-head, and means for operating the shifting arm, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT J. FISHER.

Witnesses:

JAMES G. FISHER,
BENJAMIN J. HORNSBY.