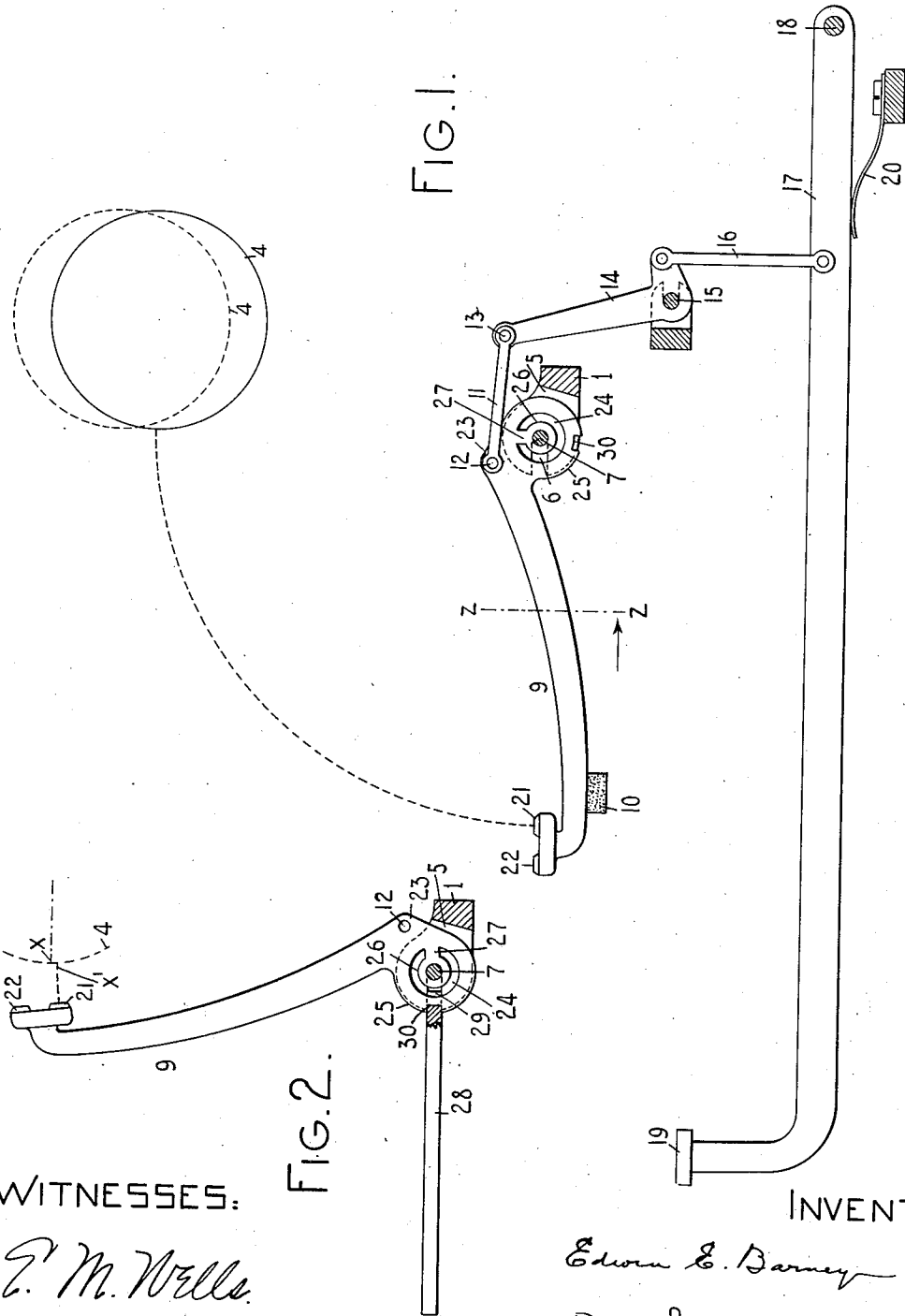


1,064,421.

Patented June 10, 1913.

2 SHEETS—SHEET 1.



WITNESSES:

E. M. Wells
M. W. Pool

INVENTOR:

Edwin E. Barney
By Jacob Felbel

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E. E. BARNEY.
TYPE WRITING MACHINE.
APPLICATION FILED APR. 1, 1912.

Patented June 10, 1913.

2 SHEETS—SHEET 2.

1,064,421.

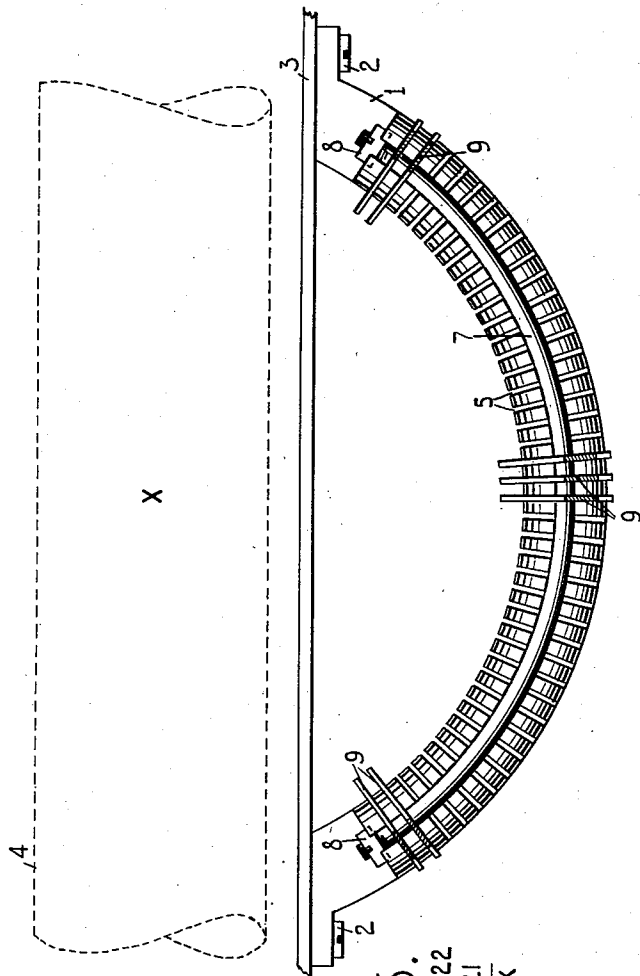


FIG. 3.

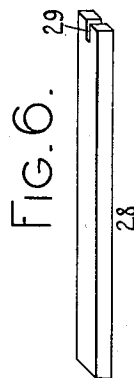


FIG. 6.

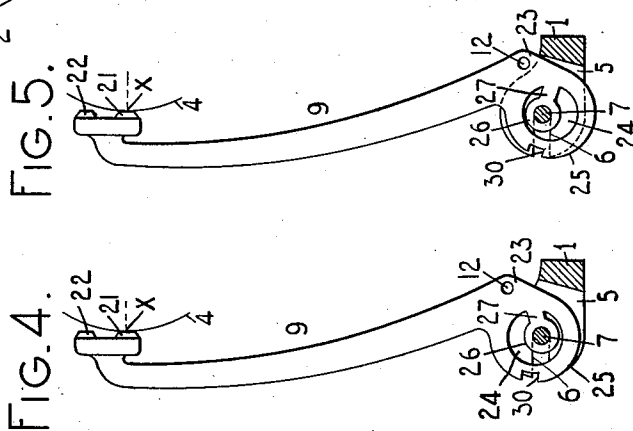


FIG. 5.

FIG. 4.

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UNITED STATES PATENT OFFICE.

EDWIN E. BARNEY, OF MARCELLUS, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO REMINGTON TYPEWRITER COMPANY, OF ILION, NEW YORK, A CORPORATION
OF NEW YORK.

TYPE-WRITING MACHINE.

1,064,421.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed April 1, 1912. Serial No. 687,617.

To all whom it may concern:

Be it known that I, EDWIN E. BARNEY, citizen of the United States, and resident of Marcellus, in the county of Onondaga 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 type bars for writing machines and particularly to an improved construction for facilitating the adjustment of the type bars whereby the types may be properly aligned.

My invention is particularly applicable to that style of typewriting machines wherein the set of type bars are mounted on a common support or fulcrum wire.

In carrying out my invention I provide type bars each having integral pivot portions between which and the body portion of the type bar a relative movement may be effected without removing the type bar from its support, this relative movement being facilitated by the employment of a locking tool which coöperates both with the type bars individually and also with their support, and enables the length of the bar to be permanently varied so as to alter the relationship between the type or types thereon and the printing point on the platen.

To the above and other ends my invention consists in the features of construction, combinations of devices and arrangements of parts hereinafter described and particularly pointed out in the claims.

One form of my invention is illustrated in the accompanying drawings wherein—

Figure 1 is a side elevation partly in section illustrating a type bar embodying my invention, the support for said type bar and its actuating devices. Fig. 2 is a corresponding view of said type bar in a different position showing the locking device or tool applied thereto. Fig. 3 is a fragmentary front elevation partly in section of a type bar segment or support with several type bars mounted thereon, the section being taken on a vertical plane indicated by the dotted line z in Fig. 1. Figs. 4 and 5 are side elevations partly in section illustrating type bars after adjustment, the alteration in the bars being exaggerated for clearness of illustration. Fig. 6 is a de-

tached perspective view of a part or element hereinafter referred to as a locking tool or adjusting device.

The nature of my invention is such that it may be adapted to various styles of typewriting machines. In the accompanying drawings I have illustrated a conventional type bar support or segment 1 for front-strike typewriting machines, said segment being secured by screws 2 to the top plate 3 of the machine frame. The platen 4 is diagrammatically illustrated as shiftable, and the segment as fixed, but this relationship may be reversed, that is, the segment may be shiftable and the platen non-shiftable; or neither of the elements need be shiftable so far as the purposes of my invention are concerned. The segmental type bar support is formed with a series of slots 5 which are radial with respect to the printing point indicated at x in Fig. 3 and in other views. At its front the segment is formed with an arcuate slot-way 6 whose center is the printing point. Seated at the rear of this slot-way is a segmental pivotal support or wire 7 which is common to all of the type bars. This wire may be secured to the type bar segment in any suitable way. As illustrated the ends of the wire are threaded and receive locking nuts 8 which when screwed in, seat themselves in depressions in the ends of the bearing portions of the segment 1, thereby detachably securing the wire 7 in place. Pivoted on the fulcrum wire 7 and seated in the slots 5 are type bars each designated as a whole by the numeral 9 and which will be hereinafter more particularly described. Any suitable key-controlled actuating devices for moving the type bars from their normal positions of rest, at which time their free end portions are supported by a type bar rest 10, may be employed. As illustrated in the drawings, each set of type bar actuating devices comprises a link 11 which is pivotally connected at 12 with a type bar. The link extends rearward and is connected at 13 with the upwardly extending arm of a bell crank 14, fixedly pivoted at 15 and having a rearwardly extending arm which is connected by a link 16 with a key lever 17 fulcrumed at the rear at 18 and terminating at its forward end portion in a key 19,

each key lever being provided with a restoring spring 20.

The type bars extend forward from the pivot wire 7 and their free end portions are provided with lower and upper-case types 21 and 22. By depressing a key 19 the associate actuating devices are operated, causing the type bar to swing to the printing point and the lower case type 21 to co-operate with the platen. By shifting the platen to the dotted line position in Fig. 1, which may be accomplished in any suitable way, the upper-case type 22 is rendered operative.

In the present instance the type bars are or may be made of sheet metal. The rear or pivot end portion of the bar is enlarged and generally circular as indicated at 23. This portion is cut or formed with a C-shaped slot 24 which is initially or normally concentric with the axis around which the type bar swings. The pivotal portion of the bar is thus divided into two concentric eyes 25 and 26 separated from each other by the width of the slot 24 and connected by a narrow connecting portion or neck 27. The neck is preferably compressed to reduce its thickness, so that when subsequently adjusting the bar any bulging of the neck which may result from bending it, will not cause the bar to bind in its bearing slot 5. The portion 26 forms a bearing eye, this portion having a bearing hole in it through which the pivot wire 7 passes. This bearing eye 26 is preferably integral with the body portion of the bar by which it is surrounded and with which it is connected by the neck portion 27. The construction is such that the bar may be readily varied in length by altering the relationship between the bearing eye portion 26 and the body of the bar, this being effected by relatively moving the two parts so as permanently to alter their relationship.

To facilitate the relative movement between the body of the bar and its bearing eye, I preferably employ an adjusting device or locking tool which is shown detached in Fig. 6 and in use in Fig. 2. Said device is designated as a whole by the numeral 28. It is bar-like in form and should be rectangular in cross section at least at its engaging end, the thickness thereat being such that it may be slipped readily into the slot 6. The tool is provided at its engaging end with a transverse notch 29 which is of a width sufficient to accommodate one of the type bars at its pivotal end portion 23, the type bars being formed at the sides of the pivots opposite from the necks 27 with notches or slots 30 wide enough to receive the adjusting or locking tool.

The use of the tool in connection with my novel type bar may be briefly explained. It will be understood that in assembling the

set or series of type bars in the machine they are entered in their respective radial slots 5 and the pivot wire 7 is then introduced in place, passing from one end of the segment to the other and through the bearing holes in the type bars which are thereby threaded on the pivot wire. Then said wire is secured in place by the locking nuts 8. The distance between the pivotal axis of the type bars and the types on said bars may slightly vary in different cases so that one bar may be a trifle too long and another a trifle too short; and it is necessary to render the bars uniform in respect of length so that the types may properly aline for printing purposes. In the present case in adjusting a type bar it is swung toward the platen until the types are in proximity thereto as shown in Fig. 2. This brings the notoch 30 in the type bar in register with the slot 6 in the type bar segment and permits the locking tool 28 to be introduced into the slots 6 and 30, the notch 29 in the tool engaging or embracing the portion 25 of the type bar back of the notch 30 therein. As will be understood from Fig. 2 the tool thus locks the portion 25 of the bar in the vicinity of the notch 30 in rigid relationship with the segment 1. Suppose as indicated at Fig. 2 the bar is a trifle short so that its lower case type would strike below the printing point x , as at x' . It is in such case desirable to lengthen the bar or increase the distance between its pivotal axis and the types by a distance corresponding to the distance between the point x' and the printing point x , which distance is purposely exaggerated in Fig. 2 for clearness of illustration. In such case the adjuster grasps the bar near its type end and forces it slightly away from the platen. The bearing eye 26 is at all times held from movement transverse of the pivot wire by the pivot wire itself, and since the front of the part 25 is held at this time, the bar cannot turn on its pivotal axis so as to permit the type end to swing away from the platen under the forcing operation of the adjuster without a distortion of the metal of which said bar is composed. The result will be that the relationship between the bearing eye 26 of the bar and the part by which it is surrounded will be permanently changed, such change being indicated in the present instance in Fig. 4, which shows the lower case type at the printing point after the bar of Fig. 2 has been properly lengthened and the adjusting tool withdrawn to permit free swinging of the lengthened bar. It will be observed that as a result of the adjusting operation the body of the bar has, as a whole, moved with respect to the bearing eye 26, this movement being upward or toward the printing point and, as illustrated, being the result of a change or distortion of the neck portion 27.

In Fig. 4 the change is somewhat exaggerated so that it may be more clearly understood. In the case of a bar which is a trifle too long the locking tool is applied as in Fig. 2 and the type end of the bar is then forced slightly toward the platen so as to shorten the distance between the type and the pivotal axis of the bar. This forcing will result in a distortion of the bar such as is illustrated on an exaggerated scale in Fig. 5. Of course, as a result of the adjusting operations, the change in the shape of the bar may not in all cases be as regular as that illustrated in Figs. 4 and 5 and may occur at different places; but it will be obvious that by reason of the novel construction of the pivotal or enlarged end portion of the bars, the effective length of the bars may be varied, that is, a permanent alteration is facilitated whereby the bars may be individually lengthened or shortened without removing them from their common pivot 7 and without disturbing any of the bars except the one which is under adjustment. It will further be understood that my invention provides for correcting imperfections in alinement due to variations in the length of the type bars. Of course, imperfections of alinement due to other causes are to be changed in other ways than by altering the lengths of the bars.

Various changes may be made without departing from the spirit and scope of my invention.

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

1. A type bar for typewriting machines having a pivot portion comprising two eye portions one surrounding the other and adapted for relative adjustment, and the outer eye portion being provided with means for facilitating such adjustment.

2. A type bar for typewriting machines having a pivot portion comprising two substantially concentric eye portions adapted for relative adjustment, and the outer eye portion being formed with a notch for facilitating such adjustment.

3. A type bar for typewriting machines having a pivot portion comprising two eye portions, one within the other, and a narrow connecting neck capable of distortion to vary the effective length of the type bar.

4. A type bar for typewriting machines having a pivot portion provided with a bearing eye, said bearing eye and the pivot portion surrounding the same being relatively movable with respect to each other.

5. A type bar for typewriting machines having a pivot portion integral with the bar but relatively movable with respect to the body portion of the bar by which body portion said pivot portion is surrounded.

6. In a typewriting machine, the combination of a type bar support, a type bar pro-

vided with an integral bearing eye connected by a neck with the body of the bar which surrounds said bearing eye, and means co-operative with the type bar support and with the type bar at the opposite side of the type bar pivot from said neck to lock the type bar rigidly to its support.

7. In a typewriting machine, the combination of a type bar support, a type bar having a pivot portion integral with the body of the bar, said pivot portion and the body portion of the bar by which it is surrounded being capable of relative movement, and means for facilitating said relative movement.

8. In a typewriting machine, the combination of a slotted type bar support; a type bar having a portion seated in the slot in said support, said portion comprising a bearing eye and a connecting neck; and means for facilitating relative movement between said bearing eye and the body of the bar whereby the bar may be lengthened or shortened at will.

9. In a typewriting machine, the combination of a curved type bar support provided with a radial slot; a pivot wire on said support; a type bar seated in said slot and having an integral bearing eye engaging said pivot wire and a neck connecting said bearing eye with the body of the bar; and means for facilitating relative movement between said bearing eye and the body of the bar whereby the bar may be lengthened or shortened at will.

10. In a typewriting machine, the combination of a slotted type bar support, a type bar seated in a slot in said support and pivoted thereon, the seated portion being provided with a curved slot, and means for facilitating relative movement between the portions of the bar at opposite sides of the slot whereby the bar may be lengthened or shortened at will.

11. In a typewriting machine, the combination of a segmental type bar support provided with a series of radial slots, a pivot wire on said support, and type bars seated in said slots and each provided with an integral bearing eye engaging said pivot wire and a neck connecting said bearing eye with the body of the bar, the relationship between the bearing eye and the body of each type bar being alterable to vary the length of the bar independently of all of the other bars and while the pivot wire remains in place.

12. In a typewriting machine, the combination of a segmental type bar support provided with a series of radial slots, a pivot wire on said support, type bars seated in said slots and each provided with an integral bearing eye engaging said pivot wire and a neck connecting said bearing eye with the body of the bar, and means for facilitating relative movement between each bearing eye

and its associate type bar body whereby the bar may be lengthened or shortened at will independently of the other type bars and while the pivot wire remains in place on the
5 segment.

13. In a typewriting machine, the combination of a segmental type bar support provided with a series of radial slots and also with a curved slot having its center at the
10 printing point, a segmental pivot wire on said support, type bars seated in said slots and provided with bearing eyes pivoted on said wire and with necks connecting the
15 bearing eyes with the bodies of the type bars, each type bar having a notch, and a device coöperative with the curved slot in the segment and with the notched portion
20 of the type bar to facilitate relative movement between the body of the bar and its bearing eye whereby the length of the bar may be altered at will.

14. In a typewriting machine, the combination of a type bar support, a set of type
25 bars thereon, actuating devices for said type bars, and means coöperative individually with the type bars for locking them independently of each other in fixed relationship with said support.

15. In a typewriting machine, the combination of a type bar support, a type bar
30 thereon, and a detachable locking tool for positively locking the type bar in fixed relationship with its support.

16. In a typewriting machine, the combination of a type bar support, a plurality of
35 type bars thereon, and a tool coöperative with said type bars one at a time and with said support for positively locking the type

bars individually in fixed relationship with said support.

17. In a typewriting machine, the combination of a type bar support provided with
40 a slot, a type bar mounted thereon and provided with a slot, type bar actuating devices, and a tool having a portion adapted to fit
45 into and coöperate with said slots when they are in register to lock the type bar positively to said support.

18. In a typewriting machine, the combination of a type bar support, a type bar piv-
50 oted thereon, the pivoted portion of the type bar and the body portion thereof being relatively movable, and means coöperating with
55 the body portion of the bar to fix it at one point with respect to the type bar support, whereby the operator, by applying power to
the type end of the bar may permanently vary the relationship between the body of
the type bar and its pivotal portion.

19. In a typewriting machine, the combination of a type bar support, a type bar piv-
60 oted thereon, the body of the typebar and its pivotal portion being relatively movable, and means for facilitating such relative
65 movement while the type bar remains pivoted on said support, whereby the relationship between the body of the bar and its
pivotal portion may be permanently altered.

Signed at Syracuse, in the county of Onondaga and State of New York, this 29th
70 day of March, A. D. 1912.

EDWIN E. BARNEY.

Witnesses:

GEORGE MUNRO FORREST,
W. W. BRAND.