

No. 753,651.

PATENTED MAR. 1, 1904.

J. ALEXANDER.
TYPE WRITER ALINER.
APPLICATION FILED DEC. 29, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

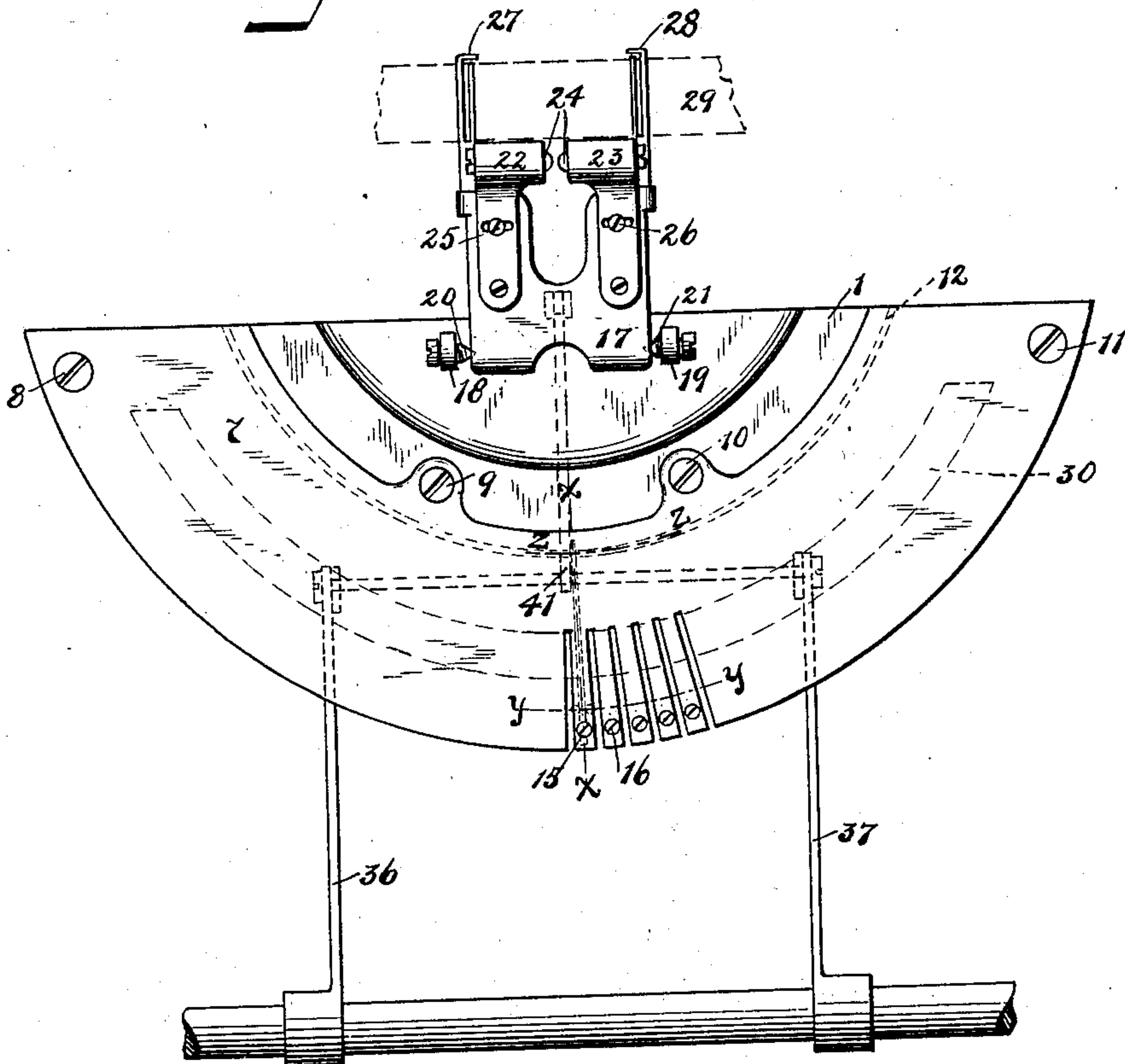
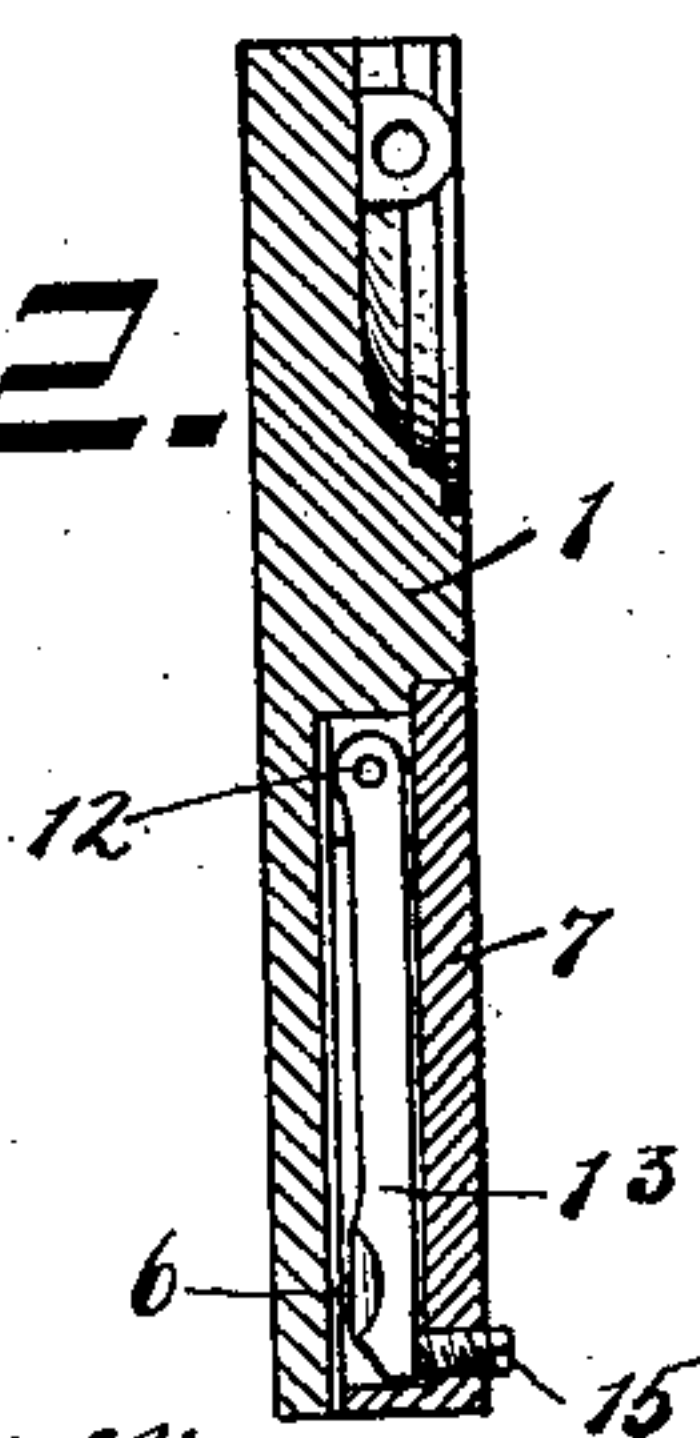


Fig. 2.

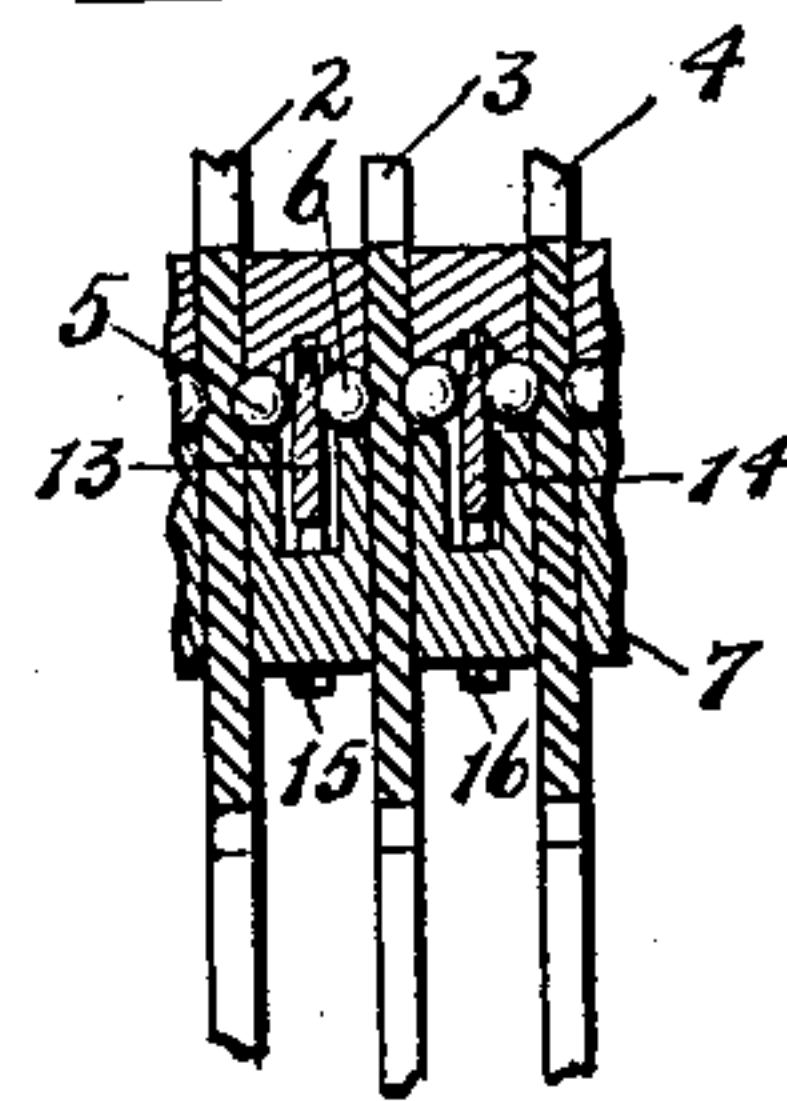


WITNESSES:

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Fig. 3.



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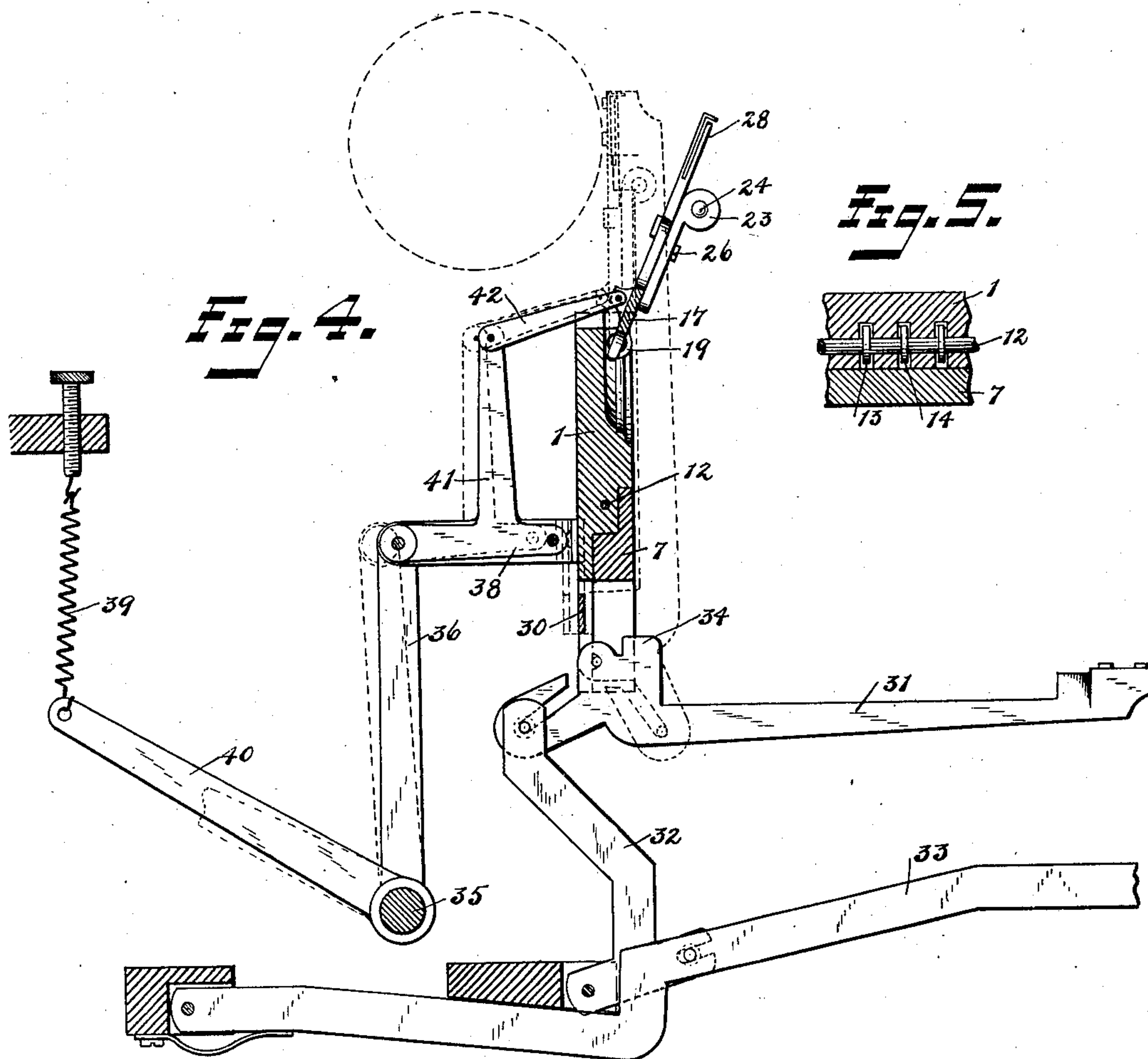
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JESSE ALEXANDER, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF
TO BERNARD CRONSON, REUBEN CRONSON, AND SOLOMON H. SIEGEL,
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TYPE-WRITER ALINER.

SPECIFICATION forming part of Letters Patent No. 753,651, dated March 1, 1904.

Application filed December 29, 1902. Serial No. 137,040. (No model.)

To all whom it may concern:

Be it known that I, JESSE ALEXANDER, a citizen of the United States, residing at Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Type-Writer Aliners, of which the following is a full, clear, and exact description.

My invention relates to improvements in type-writers, and particularly to those parts by means of which the alinement and adjustment of the type-bar mechanism are effected.

The object of this invention is to provide a construction for the mounting of the type-bar of machines of that class in which the writing is made to appear on a horizontal line before the operator. I have endeavored also to perfect the mechanism which guides the type-bar at or near the printing-point and to so construct it that it will not obscure the line of writing. In order to accomplish these objects, I have provided adjustable ball-bearings for the type-bars.

This invention also consists in guiding the type-bar as it approaches the printing position, so as to perfect the alinement. The mechanism by which this is accomplished is so constructed and mounted that it never obscures the printing-line except at the instant of printing. This alining mechanism also carries guides for the ribbon, so that the aliner and ribbon-guide is made to move toward and away from the platen at each stroke of the type-bar.

The more particular construction of these parts and the obvious advantages of it will be apparent more particularly from inspection of the accompanying drawings.

Figure 1 is a front elevation of the parts of a type-writer embodying the improvements of my invention. Fig. 2 is a fragmentary cross-section of the type-bar-mounting plate, taken on the plane of line *xx* of Fig. 1. Fig. 3 is a relatively enlarged fragmentary cross-section taken on the curved plane of the arc *yy* of Fig. 1. Fig. 4 is a cross-section and side elevation of parts of a type-writer embodying my invention, together with a key and type-bar construction. Fig. 5 is a view

similar to Fig. 3, taken on the curved plane of the arc *zz* of Fig. 1.

In the drawings, 1 is what I will call the "type-bar plate," which carries the bearings for a series of type-bars and which also is adapted to provide supports for the alining and ribbon-guide mechanism.

2, 3, and 4 (seen particularly in Fig. 3) are type-bars which are supported by the ball-bearings 5 6, &c. These balls rest in slight depressions in the type-bar plate 1 adjacent to the slotted portions which are provided for the type-bar.

7 is a cover-plate which is secured to the type-bar plate 1 by means of screws 8, 9, 10, and 11.

12 is a pivot-rod passing through the type-bar plate 1 and affording a pivotal bearing for the adjusting-blades 13 14, &c., which are provided in the space intermediate of the ball-bearings 5 6, &c.

15 16, &c., are adjusting-screws which are provided to correspond with the adjusting-blades 13 14, &c. The back edge of each adjusting-blade is preferably slightly recessed at that portion which is adapted to pass between the ball-bearings 5 and 6 in order to more pivotally and perfectly coact with the same. To tighten or loosen the bearings of a type-bar, it will therefore be seen to be merely necessary to move one of the adjacent adjusting-screws either forward or backward, as desired. Since the adjusting-screw 15 contacts with the back of the adjusting-blade 13 at a point beyond the point of contact with the ball-bearings, it will be seen that a considerable spring effect is obtained in the blade, so that a slight yielding support is thus given to the ball-bearings. A type-bar may be very readily and quickly removed by simply releasing the adjusting-screws of the blades on one or both sides of the type-bar, at which time the pressure of the ball-bearings being released the type-bar may be withdrawn. Slight depressions are formed in both sides of the type-bar at this pivotal point to coact with its corresponding bearings, as seen in Fig. 4. For access to the entire series of bearings of

the type-bars the cover-plate 7 should be removed after the machine has been turned up into a position such that the type-bar plate is in a horizontal plane. It will at this time be
 5 seen that the ball-bearings rest in their proper recesses in the type-bar plate 1. Any one of the adjusting-blades 13 14, &c., may then be lifted out for the purpose of reaching the corresponding bearings.

10 17 is a guide-carrying block which is pivotally mounted at the top of the type-bar plate by means of lugs 18 and 19 and the adjusting-pivots 20 and 21.

22 and 23 are guide-posts pivotally and adjustably secured to the block 17, so as to have a movement toward or away from each other. In the space between these guide-posts 22 and 23 are the guide-balls 24, by means of which each type as it approaches the printing position is properly guided to a perfect alinement.
 20

25 and 26 are securing-screws which take into the block 17 and coact with the slotted portions of the guide-posts 22 and 23.

27 and 28 are guide-fingers through which
 25 the ribbon 29 passes.

30 is what is termed the "universal bar," which is mounted to the rear of the type-bar plate 1 and in a position to be operated by any one of the series of type-bars, as indicated in
 30 Fig. 4, where 31 is the type-bar and 32 is an intermediate link connecting it to the key-bar 33, by means of which it is operated. The striking of the heel 34 of the type-bar 31 against the universal bar 30 will drive it to the rear.

35 35 is a universal rock-shaft connected with the universal bar 30 by means of levers 36 and 37 and bar 38.

39 is a spring attached to the arm 40 from the universal shaft 35, by means of which the
 40 universal shaft and other parts coöperating therewith are returned to their normal positions after the type-bar is released.

41 is a member which is attached to and operates with the bar 38 when the universal bar
 45 30 moves. 42 is a link attached to the upper end of this member 41, which at its forward end is pivoted to the guide-block 17. It will thus be seen from inspection of Fig. 4 that when a type-bar strikes against the universal
 50 bar and moves it to the rear at the same time the guide-block 17 will also be moved to the rear and thrown into the position shown in dotted lines. Thus at the instant of printing of the type-bar against the platen the guide-
 55 block 17 and the guide-balls 24 will be in their proper positions to afford accurate alinement for the type-bar. When the type-bar is released, the block 17 and the ribbon-guides 27 and 28 will be dropped forward again to such
 60 a position that the printed characters will be immediately seen by the operator.

The construction not only provides a movable alining mechanism for the type-bar at the printing position, but also a movable guide
 65 for the ribbon at this point.

The advantages of the simplicity of this construction will be apparent.

The ribbon movement is described and claimed in an accompanying application.

What I claim is—

1. A type-writer alining and adjusting mechanism including a type-bar plate, a series of type-bars, ball-bearings for said type-bars, and means for adjusting the bearings for two type-bars simultaneously.

2. A type-writer construction including a type-bar plate, a series of type-bars mounted therein, ball-bearings for said type-bars, one ball being situated on each side of a type-bar and resting in a recess therein, adjusting-screws and means coacting therewith for adjusting the bearings of said type-bars, said balls being arranged opposite to each other on the opposite sides of the type-bar and in pivotal alinement.

3. A construction of the character described comprising a type-bar plate, a series of type-bars mounted therein, ball-bearings for said type-bars, adjusting-blades coacting with said bearings, a single pivot-rod for a plurality of blades, and means for adjusting the position of said blades.

4. A construction of the character described comprising a type-bar plate, a series of type-bars mounted therein, ball-bearings for said type-bars, pivotally-mounted adjusting-blades for said bearings, and means for adjusting the position of said blades.

5. A construction of the character described including a series of type-bars, ball-bearings therefor, pivotally-mounted adjusting-blades for said bearings, adjusting-screws for said blades, the said bearings being situated between the points of support of said blades and the adjusting-screws.

6. A construction of the character described including a vertically-positioned type-bar plate, a series of type-bars mounted therein, ball-bearings for said type-bars, one ball being situated on each side of a type-bar and resting in a recess therein, means for adjusting said bearings, a cover-plate for said bearings, and means for securing said cover-plate to said type-bar plate.

7. A type-writer construction including a type-bar plate, a series of type-bars, ball-bearings for said type-bars, a cover-plate secured to said type-bar plate, adjusting means for said bearings, adjusting-screws passing through said cover-plate and coacting with said adjusting means.

8. A type-writer construction including the type-bar plate, a series of type-bars mounted therein, ball-bearings for said type-bars, pivoted adjusting-blades for said bearings, a cover-plate, a series of adjusting-screws passing through said cover-plate and adapted to coact with said adjusting-screws.

9. An alining mechanism including a vertical type-bar plate, a semicircular universal bar

at the rear thereof, a pivoted guide-block, alining devices carried by said block, a link between said block and said universal bar so that the guide-block is operated directly by the type-bar action, and a spring for holding said parts.

10. A construction of the character described comprising a vertical type-bar plate, type and key bar mechanism, a universal bar mounted at the rear of said plate, a universal shaft; a spring coacting therewith, a guide-block pivoted to said type-bar plate, alining devices carried by said block, a connection between said universal bar and said block to operate with said universal bar.

11. A type-writer construction of the character described including a substantially ver-

tical and semicircular type-bar plate, a series of type-bars mounted therein, ball-bearings for said type-bars, a spring-adjusting means for said ball-bearings and adjusting-screws coacting therewith.

12. A combination in a type-writer construction of a substantially vertical and semicircular type-bar plate, type-bars mounted therein, ball-bearings for said type-bars, pivoted adjusting-blades for said bearings, one blade serving to adjust the bearings of two type-bars, adjusting-screws coacting with said blades beyond the bearings.

JESSE ALEXANDER.

Witnesses:

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P. S. ALLYN.