

C. H. SHEPARD.  
TYPE WRITING MACHINE.  
APPLICATION FILED MAY 18, 1903.

951,848.

Patented Mar. 15, 1910.

Fig. 2.

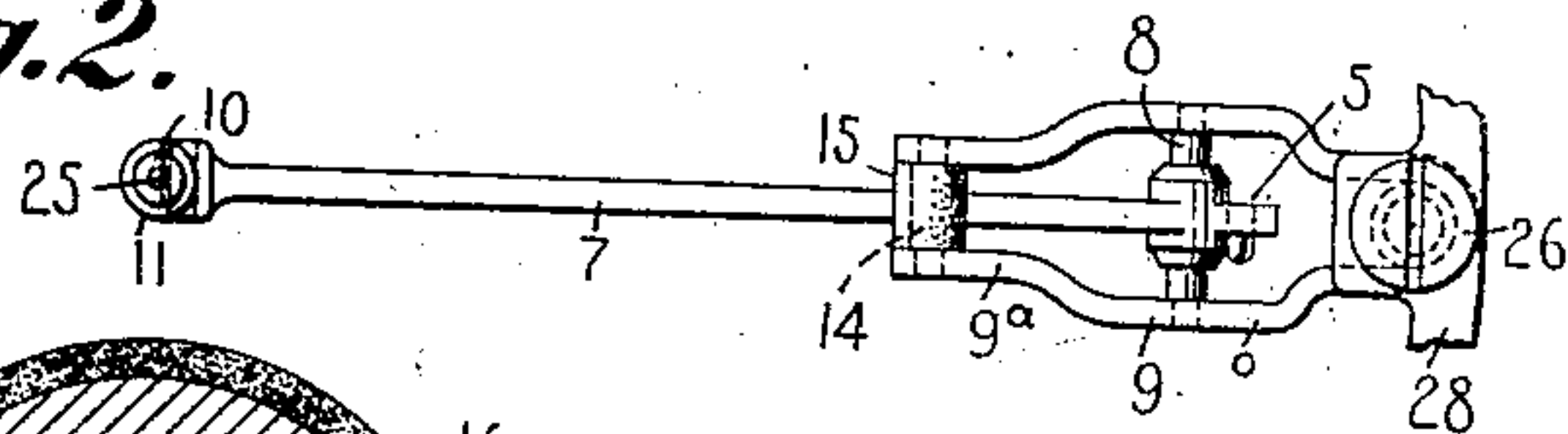


Fig. 5.

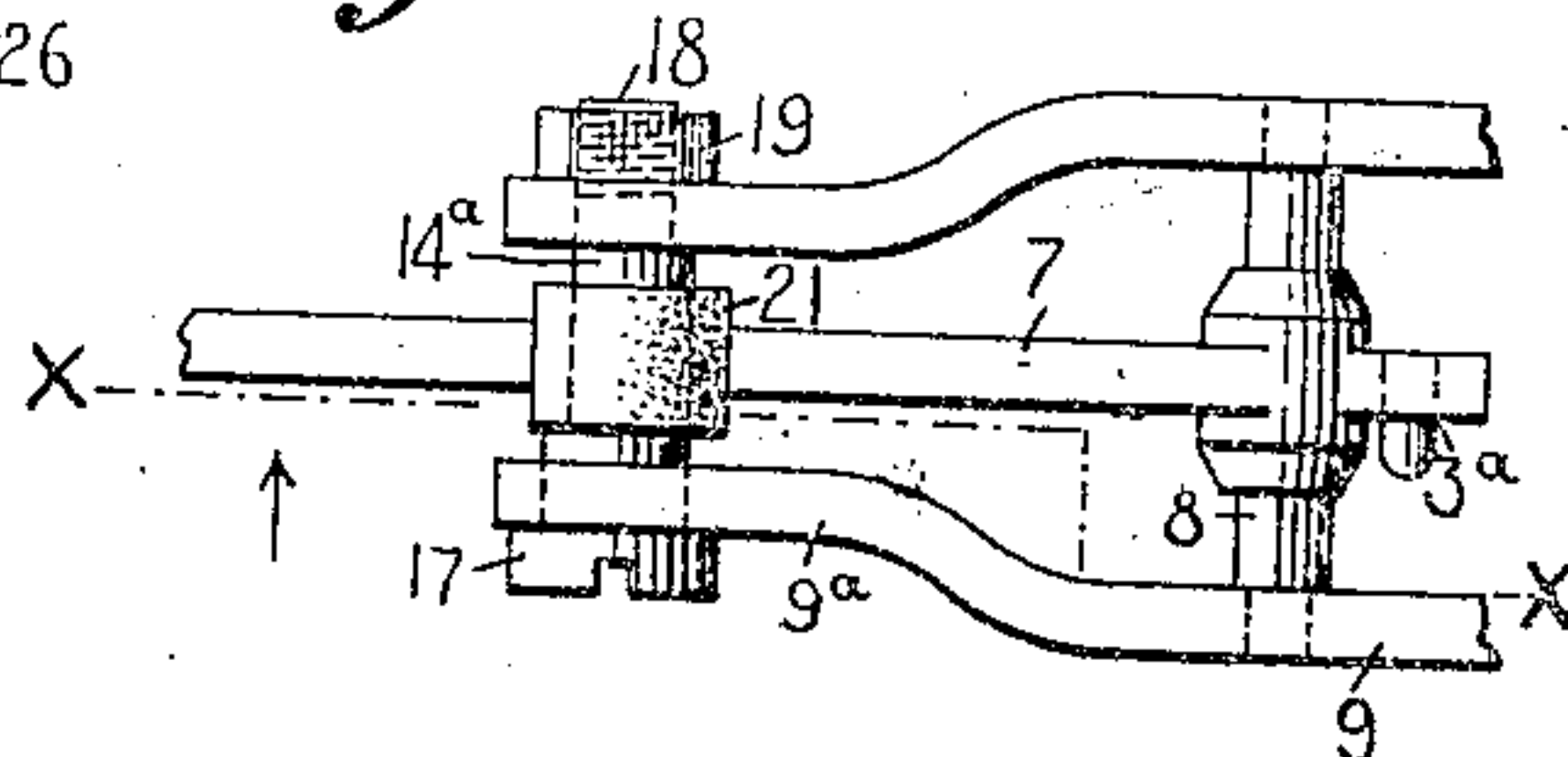


Fig. 1.

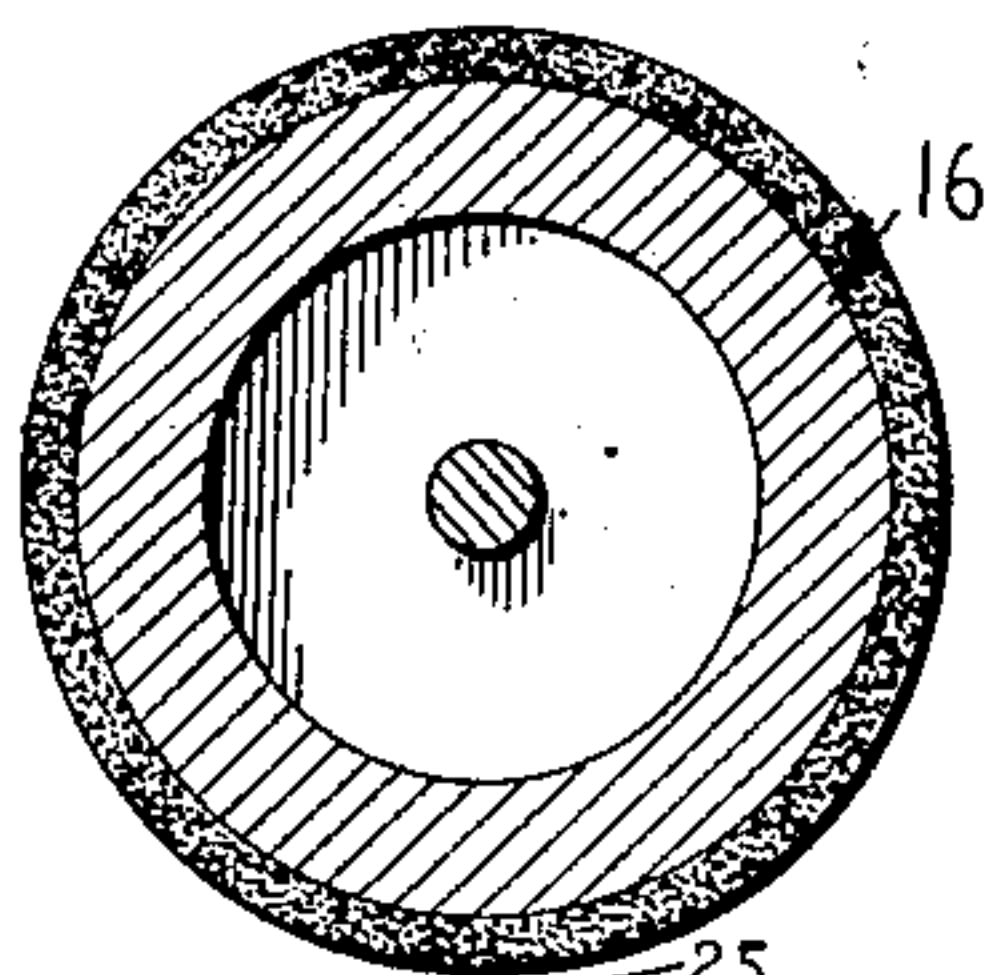


Fig. 6.

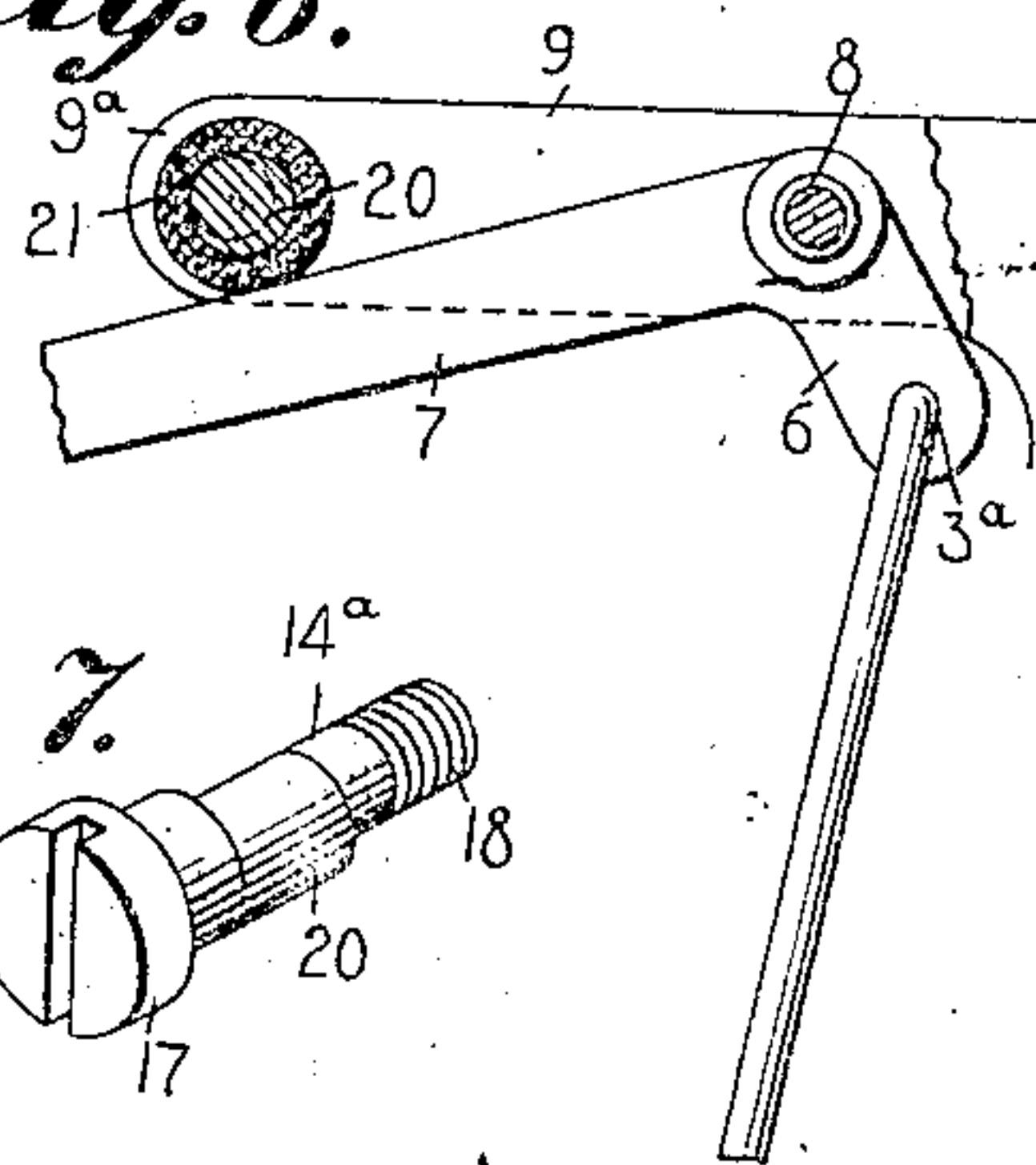


Fig. 3.

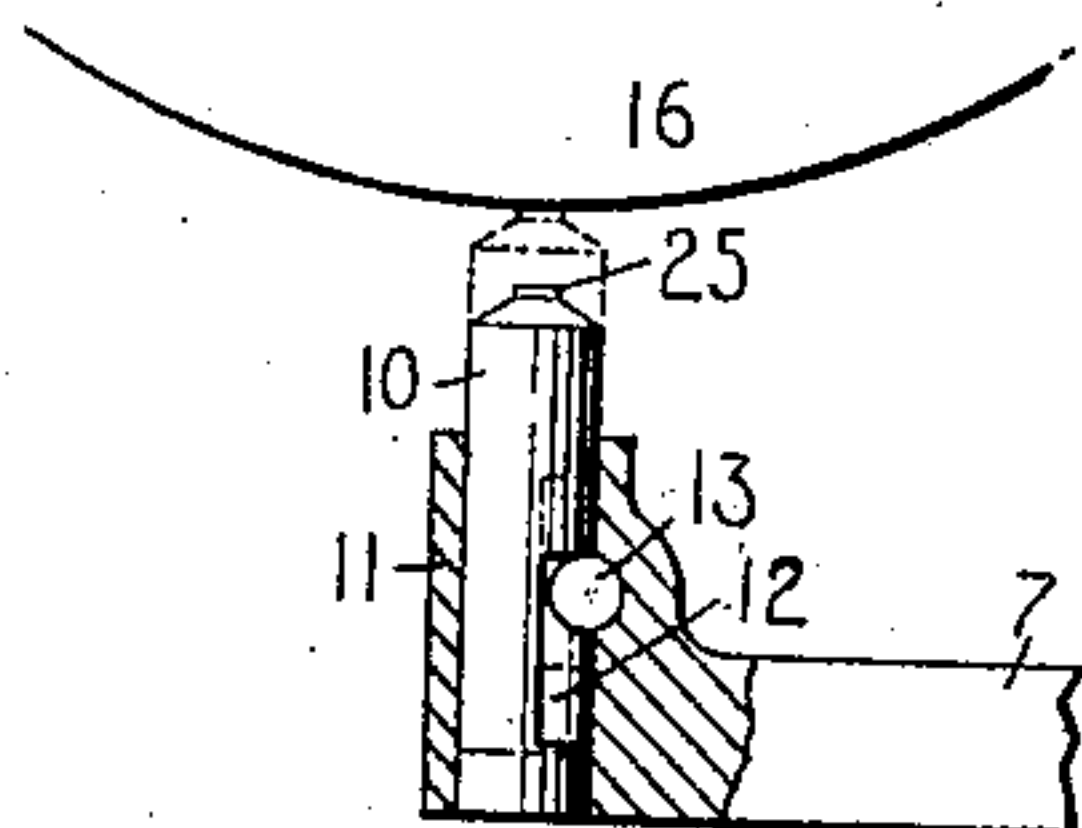


Fig. 7.

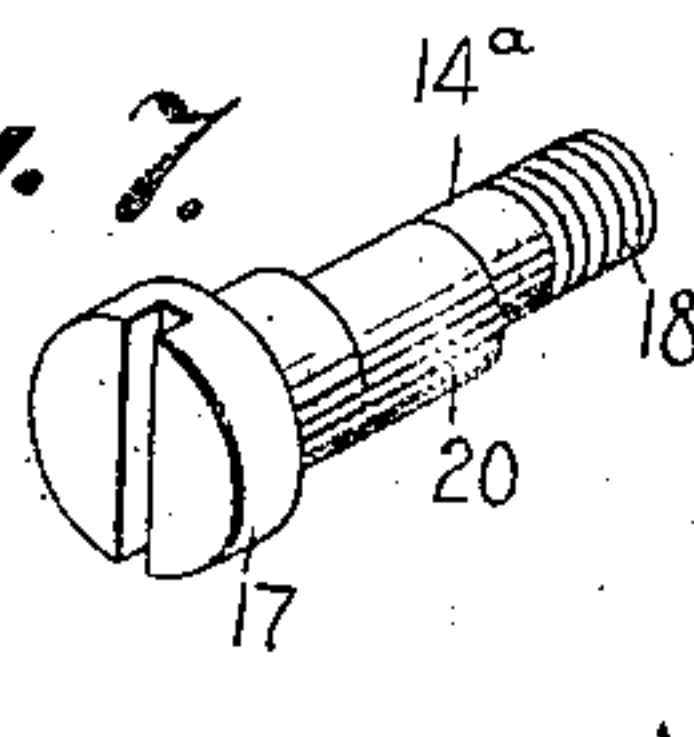


Fig. 8.

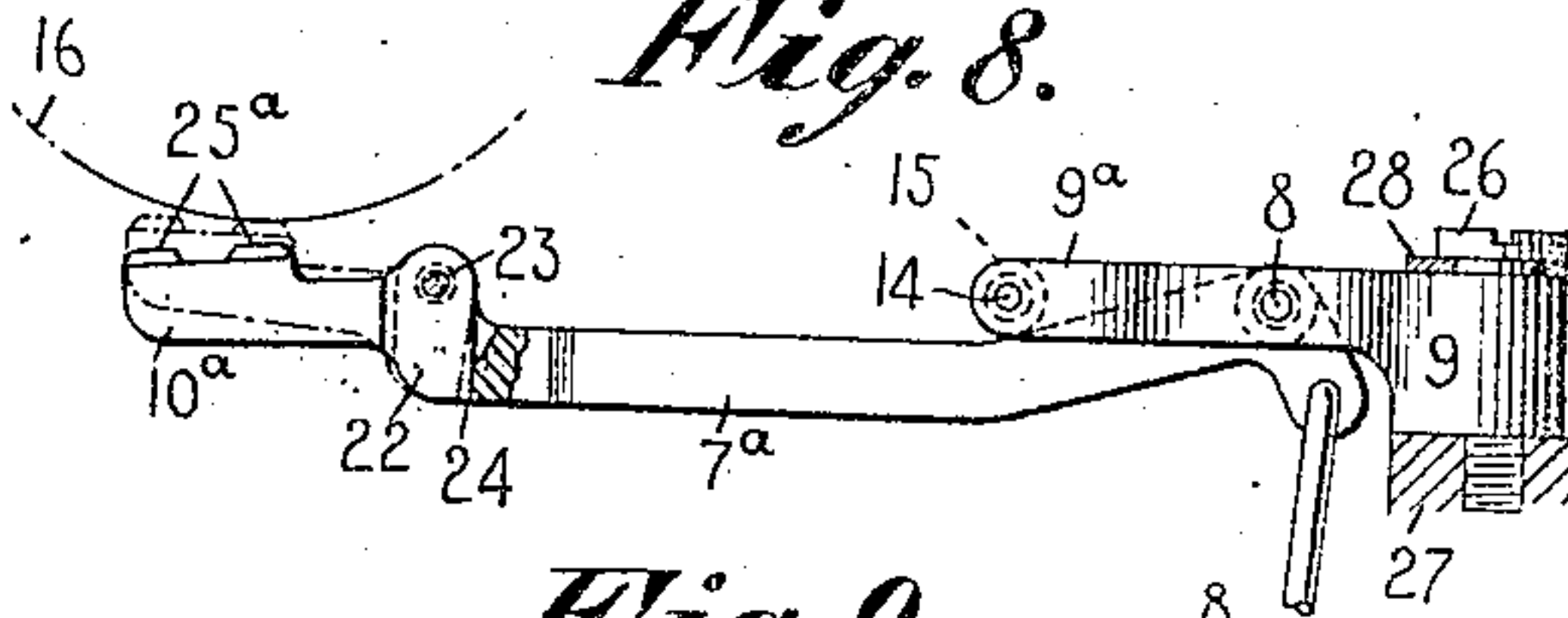


Fig. 4.

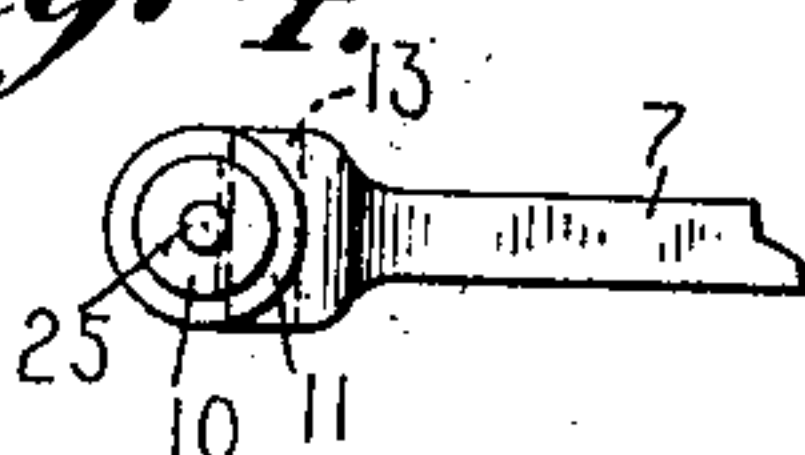
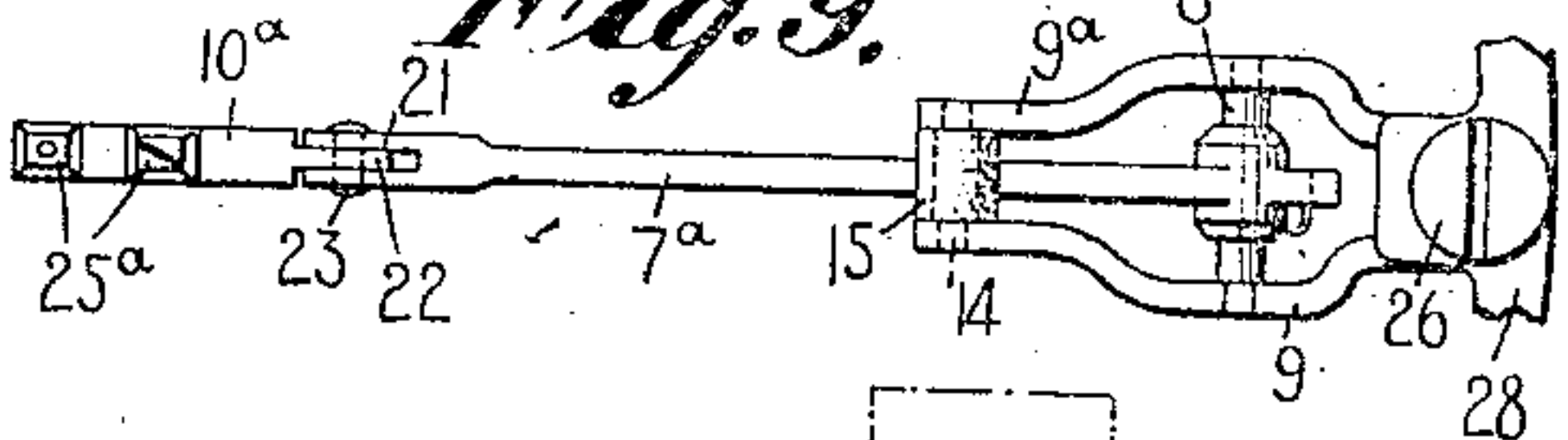


Fig. 9.



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# UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

951,848.

Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed May 18, 1903. Serial No. 157,675.

*To all whom it may concern:*

Be it known that I, CHARLES H. SHEPARD, citizen of the United States, and resident of the borough of Brooklyn, city of New York, in the county of Kings 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 typewriting machines and more particularly to the type actions thereof, and the object of said invention is to provide a simple and efficient type action wherein the full force or pressure of the finger on the key will not be positively applied to the type in making an impression.

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

In the accompanying drawings wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a fragmentary sectional elevation of a sufficient number of parts of a typewriting machine to illustrate my invention. Fig. 2 is a detail plan view of one of the type bars and hangers, the type bar being shown in a printing position. Fig. 3 is a fragmentary detail sectional view showing the outer or free end of the type bar, the view being on an enlarged scale. Fig. 4 is a plan view of the same. Fig. 5 is a fragmentary detail plan view on an enlarged scale of a modified form of construction. Fig. 6 is a vertical sectional view of the same taken on the line  $x-x$  of Fig. 5. Fig. 7 is a detail perspective view on an enlarged scale of the spindle or abutment shown in Figs. 5 and 6. Fig. 8 is a fragmentary detail side elevation partly in section of a modified form of type bar embodying my invention. Fig. 9 is a plan view of the same.

Key levers 1 of any suitable construction are provided with finger keys 2, and suitable connecting links 3 are pivoted at 4 to straps 5, each of which surrounds its associated key lever. Each of the links 3 in the present instance is shown as a two-part link, such as those ordinarily employed in the No. 6 Remington machine and the upper end of each link is connected at 3<sup>a</sup> to a crank arm 6

of a type bar or printing instrumentality that comprises two members: one, a body portion 7 that is pivoted by its trunnions 8 to a hanger 9, and the other a type carrying member 10. In the construction shown in Figs. 1, 2, 3 and 4, the body portion of the type bar is provided at its free end with a bearing portion or socket 11 that extends at substantially right angles to the lengths of the body portion of the bar and receives the loosely disposed type carrying member or block 10 therein. The type carrying member is recessed at 12, and a pin 13 extends through the bearing portion of the bar and into the recess so as to limit the movement of the type carrying member relatively to the body portion of the bar, and prevent it from turning in its bearing.

Each yoke-like type bar hanger 9 has the side arms thereof extended toward the printing point so as to form supporting arms 9<sup>a</sup> for a stop or abutment 14 which is in the nature of a spindle that extends between the supporting portions or arms 9<sup>a</sup> of each hanger and constitutes a connection between them and which projects into the path of the body portion 7 of the associated type bar, in the movement of a bar to the printing position, as clearly represented in Fig. 1. Each spindle 14 is preferably sheathed as indicated at 15 with a pad of comparatively soft substance such as leather, felt or the like, to receive the impact of the body portion of the bar in its movement to the printing position and thus avoid the objectionable noise which would occur by an impact of the bar directly against the metallic spindles 14 in the movements of the bars to the printing position. From an examination of Figs. 1 and 3 it will be understood that the disposition of each abutment 14 is such that the body portion 7 of the associated type bar reaches contact therewith, or with the sheath on said abutment, before the type arrives at the printing position or contacts with a platen 16, or the paper thereon. The momentum of the type bar in moving to the printing position is, however, sufficient to enable the type carrying member to slide in its bearing, thus bringing the face of the type to the printing point after the body portion 7 of the bar has been arrested by its abutment 14. It will therefore be seen



that the printing stroke is effected by a movement of the type carrying member after the other member has been stopped or arrested, and that the full force or pressure of the finger on the key will not and cannot be positively applied to the type.

While the various type bars throughout the system may be constructed in accordance with my invention, it should be understood that the invention is particularly valuable for those type bars which carry the types of the punctuation marks such as the period and comma inasmuch as the types for these marks or characters are liable to puncture the paper in the ordinary operation of the machine, and by my invention the liability of the sheet being punctured, is overcome. The invention, however, is also of value when applied to all of the type bars of the system inasmuch as it enables the type carrying member of each bar to recede rapidly from the printing point independently of the body portion of the bar after the impression is made, and positively prevents the operator from holding the type at the printing point by a long, following and lingering stroke upon the key, thereby avoiding a blurring of the imprint and providing a clearer and better character of work.

In the construction represented in Figs. 5 and 6 the spindle or abutment 14<sup>a</sup> is provided with a head 17 and a screw-threaded end 18. This spindle is loosely seated in bearings in the arms or supports 9<sup>a</sup> of its hanger; with the head 17 on the outer side of one arm 9<sup>a</sup> and a screw-threaded end projecting beyond the other support 9<sup>a</sup> where it coöperates with a nut 19 which, when screwed tight, exerts a pressure to maintain the spindle in the position to which it is turned. An eccentric 20 is formed on each spindle intermediate of the ends thereof and this eccentric is sheathed as indicated at 21 with a pad of comparatively soft material such as felt or leather, against which the body portion 7 of the associated type bar is adapted to strike. It will be understood that by turning the spindle, different portions of the eccentric 20, which constitutes the abutment, will be interposed in the path of the body portion of the type bar in its printing movement; that the point of arrest of the body portion of the bar may thus be varied, and the force of impact of the type carrying member may in a degree be regulated. The adjustment of the eccentric 20 likewise compensates for wear between the abutment and the body portion of the type bar at the point of impact between the two.

In the construction illustrated in Figs. 8 and 9, a modified form of type bar is shown wherein the body portion 7<sup>a</sup> is bifurcated at its free end, as indicated at 21, and receives

within the bifurcation a portion 22 of the type carrying member. A pivot 23 extends through the two members to pivotally unite them and to form a knuckle joint that enables the type carrying member 10<sup>a</sup> to swing to the printing position after the body portion 7<sup>a</sup> of the bar has been arrested by its coöperating abutment. The tongue or portion 22 of the type carrying member is adapted to contact with the end wall of the bifurcated portion 21 of the bar, as indicated at 24, so as to limit the movement of the type carrying member in one direction with relation to the body portion of the bar. It will be observed that in Figs. 1, 2, 3 and 4 a single type 25 is shown on each type carrying member, whereas in the construction illustrated in Figs. 8 and 9, two types 25<sup>a</sup> are employed on each bar. Each of the type hangers may be of any suitable construction and may be secured by a screw 26, the threaded end of which is received in a threaded opening in the top plate 27 of the machine; the head of each screw bearing upon a plate 28 that coöperates with one or more hangers and bears upon the upper edge thereof to maintain the hangers in their adjusted positions. In both constructions shown, it will be seen that the type block or type carrying member has a limited movement relatively to the body portion of the bar in the general direction of movement of the bar and at substantially right angles to the length thereof, to complete the printing stroke solely by momentum after the body of the bar has been arrested.

From the broad aspect of my invention it is immaterial by what portion of the machine the abutment which coöperates with each type bar is carried, and it is immaterial what the construction of this abutment is, so long as it arrests the body portion of the type bar before the type carrying member thereof reaches the printing point.

It should be understood that various changes may be made without departing from the spirit of my invention.

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

1. In a typewriting machine, the combination of a key actuated printing instrumentality comprising two relatively movable members, one of which carries the type, and means for arresting the other member before the type reaches the printing point and allowing the type carrying member to continue its movement in the same direction.

2. In a typewriting machine, the combination of a key actuated printing instrumentality comprising two relatively movable members, one of which carries the type, means for arresting the other member before the type reaches the printing point, and means for adjusting said arresting means.



3. In a typewriting machine, the combination of a platen, and a key actuated type bar that has a movable type block which continues to move toward the platen after the type bar has been arrested.

4. In a typewriting machine, the combination of a platen, a type bar having a relatively movable type carrying member, means for actuating said type bar, and means for arresting the type bar before the type reaches the printing point.

5. In a typewriting machine, the combination of a platen, a type bar having a relatively movable type carrying member, means for actuating said type bar, an abutment interposed in the path of the bar for arresting it before the type reaches the printing point, and means for adjusting said abutment.

6. In a typewriting machine, the combination of a platen, a type bar, a loosely disposed type carrying member that is carried by the type bar and has a limited movement relative thereto in the general direction of the movement of the bar, means for actuating said type bar, and means for arresting the type bar before the type reaches the printing point.

7. In a typewriting machine, the combination of a platen, a type bar, a loosely disposed type carrying member that is carried by the type bar and has a limited movement relative thereto in a direction at substantially right angles to the length of said bar, a key for actuating said bar, and means for arresting the bar before the type reaches the printing point.

8. In a typewriting machine, the combination of a platen, a key actuated type bar having a bearing at substantially right angles to the length of said bar, a type carrying member that is adapted to slide in said bearing, and means for arresting the type bar before the type reaches the platen.

9. In a typewriting machine, the combination of a platen, a type bar, a loosely disposed type carrying member that is carried by the type bar and has a limited movement relative thereto in the general direction of the movement of the bar, means for actuating said type bar, means for arresting the type bar before the type reaches the printing point, and means for adjusting said arresting means.

10. In a typewriting machine, the combination of a platen, a type bar, a loosely disposed type carrying member that is carried by the type bar and has a limited movement relative thereto in a direction at substantially right angles to the length of said bar, a key for actuating said bar, an abutment for arresting the bar before the type reaches the printing point, and means for adjusting said abutment.

11. In a typewriting machine, the combination of a type bar, a type bar hanger, a type carrying member that is carried by and has a movement relative to said bar, and an abutment carried by said type bar hanger and with which the type bar contacts before the type reaches the printing point.

12. In a typewriting machine, the combination of a key actuated type bar having a bearing therein, a loosely disposed type carrying member adapted to slide freely in said bearing, and means for limiting the movement of the type carrying member in its bearing.

13. In a typewriting machine, a pivoted key actuated type carrier having a bearing therein, a type carrying member that is adapted to slide in said bearing, and means for preventing said type carrying member from turning in its bearing.

14. In a typewriting machine, a swinging type carrier having a bearing therein, a type carrying member that is adapted to slide in said bearing, means for preventing said type carrying member from turning in its bearing, and means for arresting the type carrier before the type reaches the printing point.

15. In a typewriting machine, a swinging type carrier having a bearing therein, a type carrying member that is adapted to slide in said bearing, said type carrying member being recessed, and a pin that extends into said recess and prevents the member from turning on the type carrier but affords a relative sliding movement thereof.

16. In a typewriting machine, a pivoted type bar having a bearing therein that extends at substantially right angles to the length of the bar, a loosely disposed type carrying member that is adapted to slide in said bearing for a limited distance, means for swinging said type bar on its pivot, and means for arresting the type bar before the type reaches the printing point.

17. A series of type bars, each comprising a body portion and an independently movable type portion, an individual hanger for each type bar, and means carried by each hanger for arresting the associated body portion before the type reaches the printing point.

18. A series of type bars, each having an independently movable type, an individual hanger for each type bar, means carried by each hanger for arresting the associated type bar before the type reaches the printing point, and means for affording an independent adjustment of the arresting means for each type bar.

19. In a typewriting machine, the combination of a series of type bars, each having a type that is adapted to move relatively thereto, an independent hanger for each type bar, and an abutment carried by each



hanger and which is adapted to arrest the type bar before the type reaches the printing point.

20. In a typewriting machine, the combination of a series of type bars, each having a type that is adapted to move relatively to its bar, an independent hanger for each type bar, an abutment carried by each hanger and which is adapted to arrest the type bar before the type reaches the printing point, and means for adjusting each abutment.

21. The combination of a type bar having a type movable relatively to the body of the bar, a hanger therefor comprising side arms between which the type bar is pivoted, and an abutment that extends between said arms and into the path of the type bar and which is adapted to arrest the type bar before the type reaches the printing point.

22. The combination of a type bar having a type movable relatively to the body of the bar, a hanger therefor comprising side arms between which the type bar is pivoted, an abutment that extends between said arms and into the path of the type bar and which is adapted to arrest the type bar before the type reaches the printing point, and a pad carried by said abutment and against which the type bar is adapted to strike.

23. The combination of a type bar having a type movable relatively to the body of the bar, a hanger therefor comprising side arms between which the type bar is pivoted, and an abutment that extends between said arms and into the path of the type bar and which is adapted to arrest the type bar before the type reaches the printing point, a pad carried by said abutment and against which the type bar is adapted to strike, and means for adjusting said abutment.

24. The combination of a type bar having a type carrying member that is adapted to move relatively to the body of the bar, a hanger for said type bar, said hanger comprising side arms between which the type bar is pivoted, and an abutment that extends between said arms and into the path of the type bar and which is adapted to arrest the type bar before the type reaches the printing point.

25. The combination of a type bar having a type movable relatively to the body of the bar, a hanger therefor comprising side arms between which the type bar is pivoted, and an adjustable eccentric carried by and extending between the arms of said hanger and into the path of the type bar, and constituting an abutment that is adapted to arrest the type bar before the type reaches the printing point.

26. In a typewriting machine, the combination of a type bar having a type movable relatively to the body of the bar, a hanger therefor, said hanger comprising side arms

between which the type bar is pivoted, and a spindle that connects and extends between said arms, and constitutes an abutment against which the type bar is adapted to contact before the type reaches the printing point.

27. In a typewriting machine, the combination of a type bar having a type movable relatively to the body of the bar, a hanger therefor, said hanger comprising side arms between which the type bar is pivoted, a spindle that connects and extends between said arms, an eccentric on said spindle that constitutes an abutment against which the type bar is adapted to contact before the type reaches the printing point, and means for affording a turning of the spindle on said hanger arms.

28. In a typewriting machine, the combination of a type bar having a type movable relatively to the body of the bar, a hanger therefor, said hanger comprising side arms between which the type bar is pivoted, and a spindle that is connected to and extends between said arms, and constitutes an abutment against which the type bar is adapted to contact before the type reaches the printing point, said spindle being sheathed with a comparatively soft material to receive the impact of the type bar.

29. In a typewriting machine, the combination of a type bar having a type movable relatively to the body of the bar, a hanger therefor, said hanger comprising side arms between which the type bar is pivoted, a spindle that is connected to and extends between said arms, an eccentric on said spindle, said eccentric being sheathed with a comparatively soft material that constitutes a pad against which the type bar is adapted to contact before the type reaches the printing point, and means for affording a turning of the spindle on said hanger arms.

30. In a typewriting machine, the combination of a key actuated type bar having a bearing socket extending at substantially right angles to the length thereof, a loosely disposed type carrying member that is contained and adapted to slide freely within said socket, and means for limiting the movement of said member relatively to the bar.

31. In a typewriting machine, the combination of a pivoted type bar having a bearing socket extending at substantially right angles to the length thereof, a loosely disposed type carrying member that is contained and adapted to slide within said socket, said member having a recess therein, and a pin carried by the socket and extending into said recess for limiting the movement of the said member in its socket.

32. In a typewriting machine, the combination of a platen, a key actuated type bar

having a type carrying member which is free to move toward the platen by its momentum independently of and at substantially right angles to the type bar during the printing stroke and before the type reaches the platen and after the type bar has been arrested.

Signed at the borough of Manhattan, city

of New York, in the county of New York and State of New York this 15th day of May A. D. 1903.

CHARLES H. SHEPARD.

Witnesses:

KATHERINE V. DONOVAN,  
E. M. WELLS.