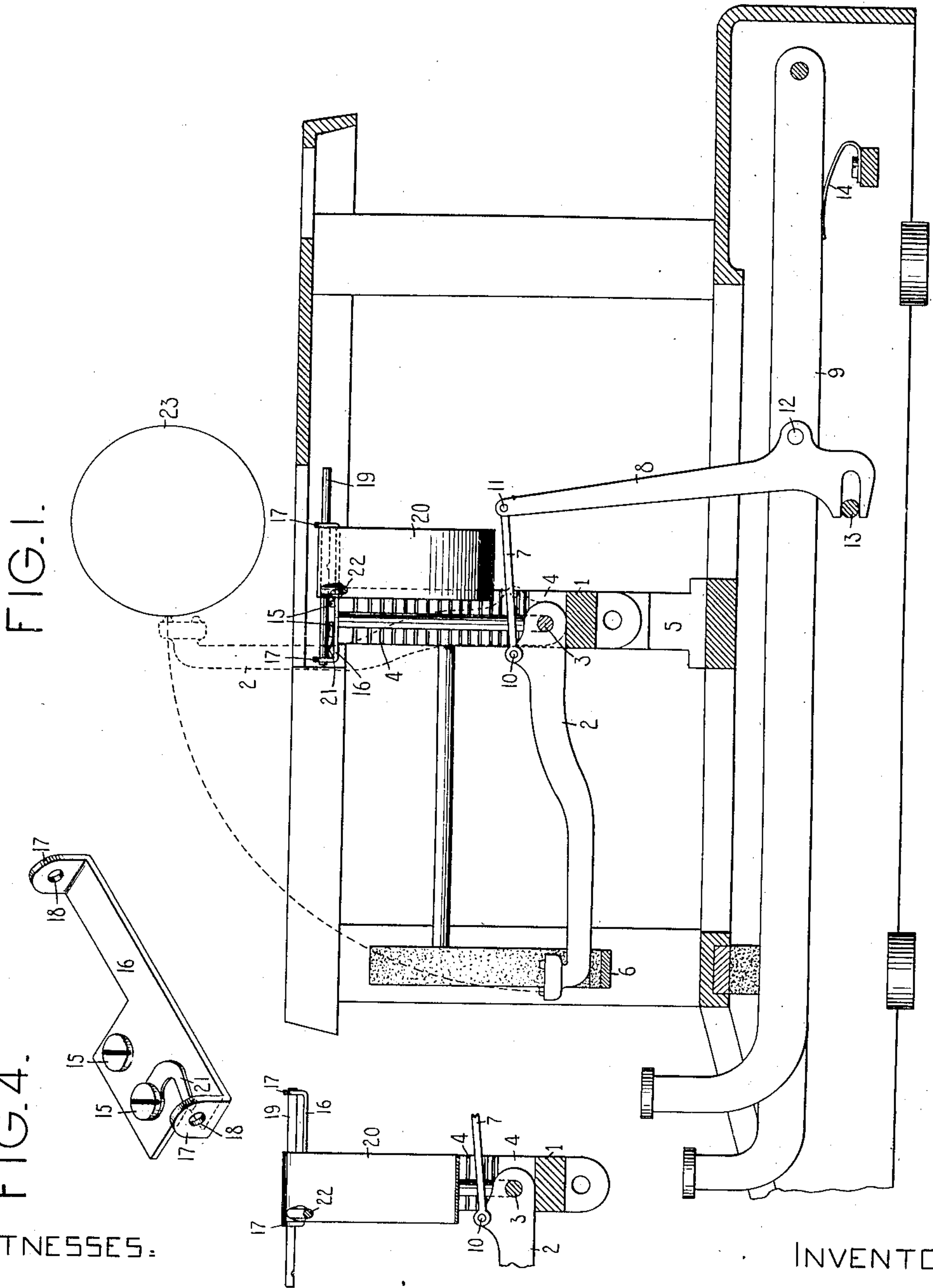


No. 882,104.

PATENTED MAR. 17, 1908.

J. FELBEL.  
TYPE WRITING MACHINE.  
APPLICATION FILED MAR. 16, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

*K. V. Donovan*  
*E. M. Wells*

FIG. 3.

INVENTOR.

*Jacob Felbel*

No. 882,104.

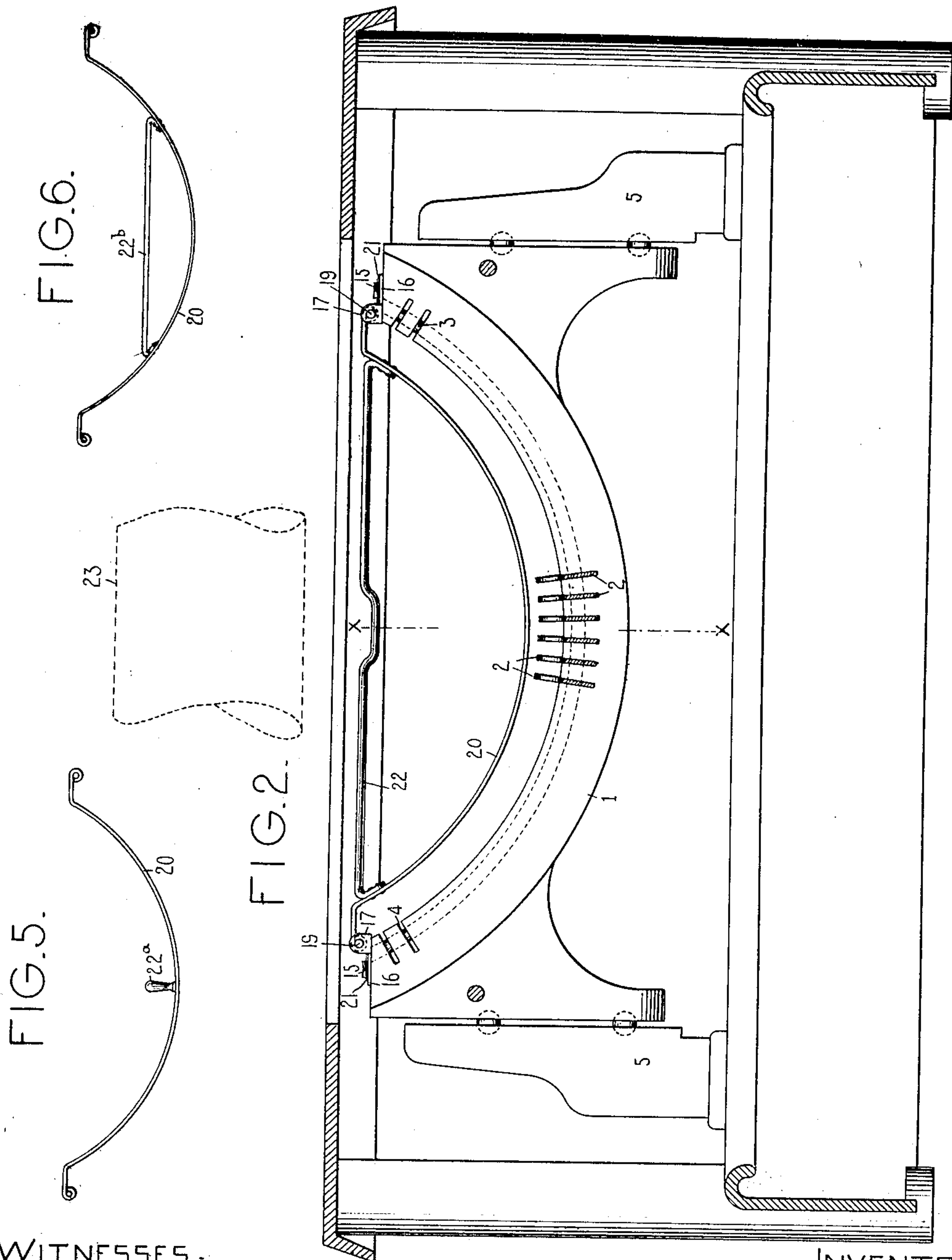
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WITNESSES:

K. V. Donovan  
E. M. Wells.

INVENTOR.

*James Felbel*



# UNITED STATES PATENT OFFICE.

JACOB FELBEL, OF NEW YORK, N. Y., ASSIGNOR TO UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## TYPE-WRITING MACHINE.

No. 882,104.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed March 16, 1904. Serial No. 198,456.

*To all whom it may concern:*

Be it known that I, JACOB FELBEL, a citizen of the United States, and resident of the borough of Manhattan, city of New York, in the county of New York 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 dust shields or covers for the type bar bearings of writing machines, and more particularly to that kind of machines known as front strike or visible typewriters.

The main object of my invention is to provide a simple and efficient construction of dust shield; and my invention consists in the various features of construction, arrangements and combinations of parts, all as will be hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a vertical central longitudinal section of a front strike typewriting machine embodying my improvements, various parts of such machine being omitted as unessential and for the sake of simplifying the drawings. Fig. 2 is a front elevation of the machine, partly in section, but omitting the key levers and certain other devices shown in Fig. 1. Fig. 3 is a vertical cross section taken on the line  $x-x$  of Fig. 2, but with the dust shield in operative position. Fig. 4 is an enlarged detail perspective view of one of the brackets or supports for the dust shield. Fig. 5 is a front elevation, on a reduced scale, of the dust shield detached and illustrating a different form of handle from that shown in Figs. 1 and 2; and Fig. 6 is a view similar to Fig. 5, showing still another form of handle.

In the various views, the same part will be found designated by the same numeral of reference.

1 represents the type bar segment or support which may be arranged perpendicularly to the base of the machine or at an angle thereto.

2 are the type bars, shown herein as pivotally mounted upon a continuous fulcrum wire 3, seated in a groove in the concave face of the segment or support, the latter being slotted transversely and radially as at 4 for the accommodation of the pivot ends or hubs of the type bars. Of course, in lieu of mounting the type bars upon a continuous

fulcrum wire as shown, each type bar may have an individual pivot and hanger, as is well known in this style of machines, the kind or construction of type bar bearing being immaterial in so far as my present invention is concerned. In the machine shown, the segment 1 is mounted to shift upwardly in ball bearing guides and is supported by brackets 5 forming part of such guides, but this construction is unessential, as the segment or support may be of the nonshifting type.

The free ends of the type bars may be supported by a segmental rest or basket 6, and the type bars may each be swung upwardly and rearwardly to printing position by means of a link 7, a bell crank 8 and a key lever 9. The forward end of the link 7 is pivotally attached at 10 to the type bar and the rear end of said link is pivotally attached to the bell crank at 11. The bell crank is pivoted at 12 directly to the key lever and the lower end of the bell crank is slotted to bear upon a transverse fulcrum bar or abutment 13, all as is well known in the art. The key lever may be provided with a returning spring 14 and, if desired, the type bar may likewise be provided with a separate returning spring.

At each end of the segment or support 1 is secured, by screws 15, a bracket 16 having upturned ears 17 perforated at 18 to receive and support a cylindrical slide or bar 19 of greater length than the distance between said ears.

20 represents the dust shield or cover and from an examination of Fig. 2, it will be observed that this is of segmental form and concentric with the upper face of the segment or support 1, and that it is formed on a radius shorter than the latter and hence occupies a position above the same. This dust shield is preferably made of sheet metal and attached at its ends to the slide bars 19 and at about the middle portions of said bars. The ends of the dust shield may be attached to these bars by any suitable means. I have shown said ends as simply bent around so as to tightly embrace said bars, but of course they may be soldered, riveted or otherwise secured. Each bracket 16 may be provided with a leaf spring 21 to bear against the underside of the bar and hold it and the dust shield with sufficient friction in any position to which they may be adjusted.

In Fig. 2 there is a bar 22 extending across from one end of the dust shield to the other



and fastened thereto by rivets. This bar 22 is preferably arranged substantially in the plane of the slide bars 19, and is provided for the purpose of enabling the operator to move the dust shield back and forth easily and conveniently.

When in normal position the dust shield rests or is stationary under the platen 23 and in rear of the pivotal bearings of the type bars, as represented in Fig. 1, and so as to be out of the way of the type bars when they swing upwardly and rearwardly to print on the platen. The front face of the platen is in line or substantially in line with the vertical plane in which the type bar bearings are arranged and hence in the normal position of the dust shield the type bar bearings would be exposed to the falling dust or particles resulting from the making of erasures on the face of the platen. The same thing would be true if the segment were set at a slight forward inclination to the face of the platen instead of vertically as shown; but as will be seen, the dust shield is adapted to be drawn forward towards the operator and to a position to cover the type bar bearings and protect the same from particles falling from the platen during the making of erasures, such particles then falling upon the shield or pan and from which they may be brushed rearwardly or forwardly at any desired time.

In practice, the operator when about to make erasures will pull the dust shield forward by means of the hand piece or hand bar to the position shown at Fig. 3, thus protecting the bearings, and upon completion of the work of erasing, the operator will push the dust shield rearwardly again to the normal position shown in Fig. 1, thus removing it from the paths of the type bars and enabling them to make their full printing strokes.

In Fig. 5 the hand piece is shown in the form of a centrally arranged knob or handle 22<sup>a</sup> and in Fig. 6, in the form of a cross bar 22<sup>b</sup> but arranged near the bottom of the shield.

The dust shield is wholly disconnected from the type bars and their actuating mechanism and is movable independently thereof and thus no weight or additional work is added to the printing keys to effect a movement of the dust shield. Any suitable means may be provided for moving the shield from its normal position of rest to its operative, protecting position and back again.

Many changes may be made in details of construction and arrangements of parts without departing from the gist of my invention, as defined in the following claims.

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

1. In a front strike typewriting machine, a dust shield mounted in the machine and normally removed from over the type bar bearings but adapted to be moved on its support to a position between the type bar

bearings and the printing line, to cover said bearings when erasures are to be made.

2. In a front strike typewriting machine, a movably mounted dust shield normally at rest and arranged out of the paths of travel of the type bars but adapted, when erasures are to be made, to be moved on its support to a position between the type bar bearings and the printing line to protect the type bar bearings.

3. In a front strike typewriting machine, a dust shield which covers the type bar bearings when erasures are made but which when the type bars are actuated occupies a position of rest in rear of said type bar bearings.

4. In a front strike typewriting machine, a movably-supported dust shield arranged to be adjusted by hand to either of two positions in the machine, one to cover the type bar bearings and the other to uncover them.

5. In a front strike typewriting machine, a dust shield arranged normally in rear of the type bar bearings and provided with means for moving it forwardly over said type bar bearings.

6. In a front strike typewriting machine, the combination of a platen, segmentally arranged type bars having their bearings arranged substantially under the front face of the platen, and a segmental dust shield resting normally in the rear of said type bar bearings and adapted to be drawn forward over said bearings when erasures are to be made.

7. In a typewriting machine, the combination of a type bar, means for actuating said type bar, a dust shield normally at rest in inoperative position when the type bars are actuated, and means independent of the type bar and its actuating means for moving the said shield to operative position.

8. In a visible typewriting machine, the combination of a series of segmentally arranged type bars, means for actuating said type bars, a segmental dust shield adapted to cover the pivotal bearings of the type bars, and means for moving the dust shield independently of the actuation of the type bar means.

9. In a typewriting machine, a dust shield that is movably mounted in the machine and is directly movable to and from operative position by hand.

10. In a typewriting machine, the combination with a type bar and its actuating mechanism of a dust shield that is movable directly to and from operative position by hand and independently of the type bar and its actuating mechanism, and means for maintaining the dust shield in the position to which it is moved.

11. In a typewriting machine, the combination with a type bar and its actuating means, of a dust shield disconnected therefrom movably mounted in the machine and



movable to and from the operative position independently of the type bar or its actuating means.

12. In a typewriting machine, the combination of a series of segmentally arranged type bars, a segmental dust shield that is adapted to cover the pivotal bearings of said type bars, and a finger piece connected directly to said shield for moving it to and from operative position.

13. In a typewriting machine, the combination of a series of type bars, a dust shield, ways on which said shield is adapted to slide, and a finger piece connected to said shield and by which it is moved on said ways into and out of operative position.

14. In a front strike typewriting machine, the combination of a series of segmentally arranged pivoted type bars, actuating means therefor, a segmental dust shield that is adapted to extend over the pivotal bearings of the type bars, ways on which said shield is adapted to slide fore and aft of the machine and into and out of operative position, and a finger piece connected to said dust shield and by means of which it is moved independently of the type bar and its actuating means.

15. In a typewriting machine, the combination of a series of segmentally arranged type bars, and a segmental movable dust shield having a finger piece directly connected thereto, said finger piece being intermediate the ends of the shield for moving it.

16. In a typewriting machine, the combination

of a series of segmentally arranged type bars, a segmental movable dust shield, and a piece that extends from one side to the other of said dust shield and which constitutes a finger piece for moving the shield.

17. In a typewriting machine, the combination of a type bar segment, a series of type bars carried thereby, actuating means for said type bars, a dust shield movably mounted on said segment and normally at rest in inoperative position when the type bars are in action, and means independent of the type bars and their actuating means and connections for moving said shield to and from operative position.

18. In a typewriting machine, the combination of a series of type bars, a movable dust shield, and a spring catch for holding the shield in either of the two positions to which it may be moved.

19. In a typewriting machine, the combination with a type bar and actuating mechanism therefor, of a dust shield entirely disconnected from the type bar and its actuating mechanism and from any of the parts controlled thereby, and which is movable by hand to and from operative position.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York, this fifteenth day of March, A. D. 1904.

JACOB FELBEL.

Witnesses:

K. V. DONOVAN,  
E. M. WELLS.