

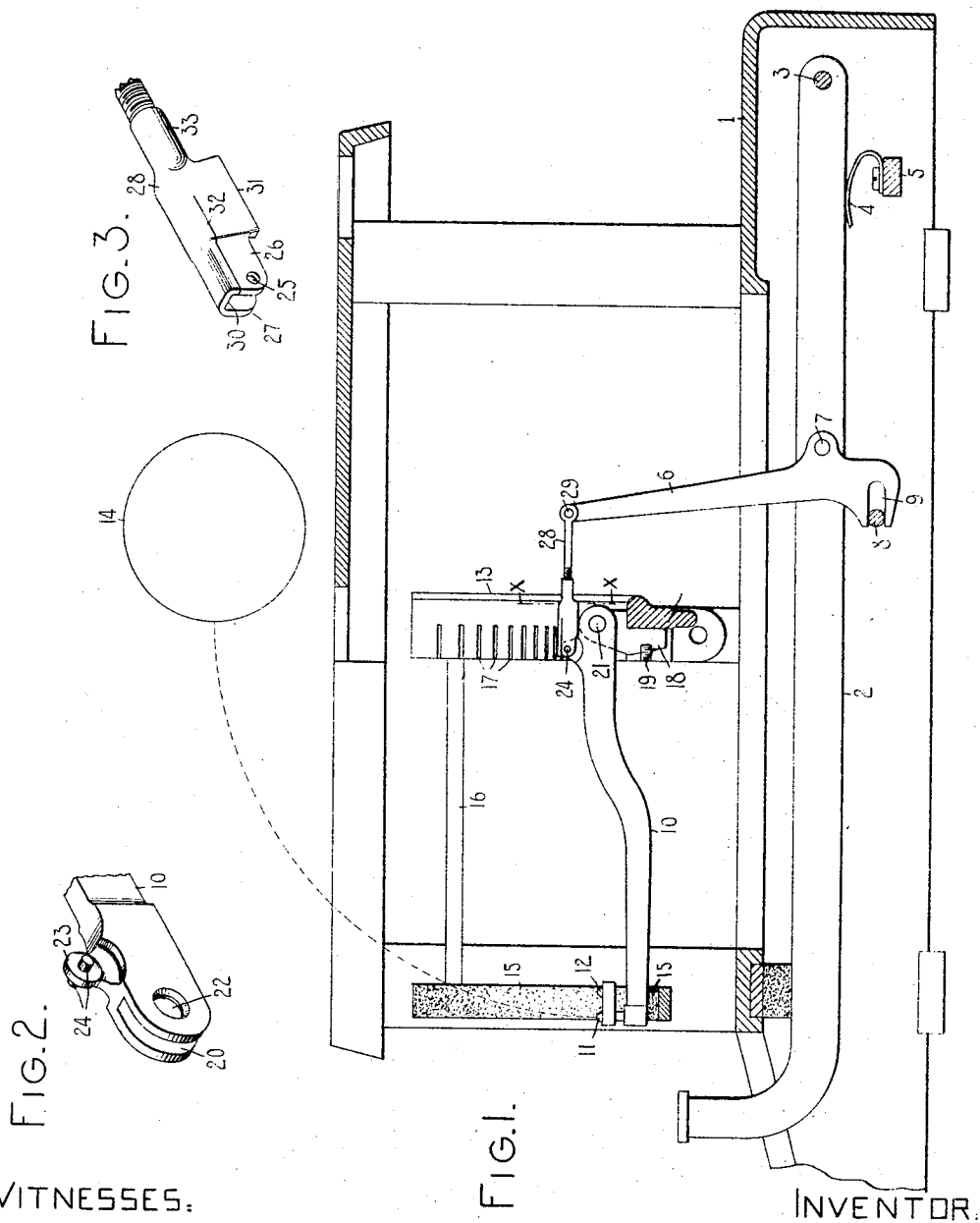
No. 764,935.

PATENTED JULY 12, 1904.

J. FELBEL.
TYPE WRITING MACHINE.
APPLICATION FILED APR. 14, 1904.

NO MODEL.

2 SHEETS—SHEET 1



WITNESSES:

E. M. Wells
M. F. Hammer

FIG. 1.

INVENTOR.

Jacob Felbel

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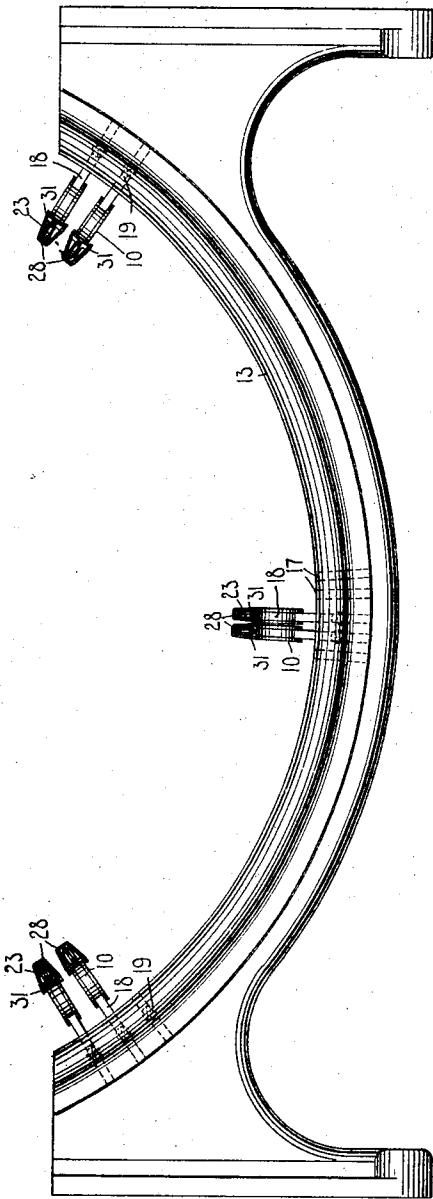
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2 SHEETS—SHEET 2.

FIG. 4.



WITNESSES.

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INVENTOR.

Jacob 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.

SPECIFICATION forming part of Letters Patent No. 764,935, dated July 12, 1904.

Application filed April 14, 1904. Serial No. 203,216. (No model.)

To all whom it may concern:

Be it known that I, JACOB FELBEL, a citizen of the United States, and a resident of the borough of Manhattan, city of New York, in the
5 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 type-writing machines, and has for its object to provide such
10 machines with a type-action in which the bearings of the type-bars are protected from dust and falling dirt.

My invention is applicable to any sort of
15 type-writing machines in which type-bars are employed, but more especially to front-strike machines, because in them the type-bars are pivoted below the platen and their bearings are in the path of dirt falling from the platen
20 when erasures are made.

My invention consists in certain parts, features of construction, and combinations of devices, which will be fully set forth herein and particularly pointed out in the claims.

25 In the accompanying drawings I have shown my invention applied to a Monarch typewriter.

In said drawings, Figure 1 is a view in vertical longitudinal section of so much of a type-writing machine as is necessary to illustrate my
30 invention. Fig. 2 is a perspective view of the heel or pivotal end of a type-bar. Fig. 3 is a perspective view of one end of a link which operates a type-bar; and Fig. 4 is a rear view of the segment on which the type-bars are mounted, the operating-links being shown in section on the line *x x* of Fig. 1.

Referring to the drawings, 1 designates the frame of the machine. The key-levers 2 are
40 pivoted on a rod 3 and are pressed upward by springs 4, secured to a cross-bar 5. Sublevers 6 are pivoted at 7 to the key-levers 2, below which is mounted a fixed rod 8, which passes through slots 9, formed in the lower
45 portions of the several sublevers 6. The construction is such that when a key-lever is depressed the upper end of its sublever is moved toward the back of the machine. Each of the type-bars 10 carries at its free end a type-

head having two types 11 and 12, and all of
50 said type-bars are pivotally mounted on a segment 13 in such manner that when any of them is operated the type 11 will strike the platen 14 at the printing-point, which is on the front face of the platen. The segment 13
55 is adapted to be elevated to cause the type 12 to strike the platen by means of a case-shift device, which is not here shown. The free ends of the type-bars normally rest on a segmental pad 15, which is supported by rods 16,
60 projecting forward from the segment 13. Said segment 13 has cut in the front face thereof a series of substantially radial slots 17, in each of which is mounted a type-bar hanger 18. Each of the slots 17 is formed with a
65 threaded round hole of a diameter greater than the width of the slot, and into this hole is passed a set-screw 19, the end of which engages the hanger and retains it in place. The
70 heel of the type-bar is bifurcated or formed with a slot, as shown at 20 in Fig. 2, to receive the projecting end of the hanger 18, to which it is pivoted, as by a pivot-pin 21, which passes through a hole 22 in the type-bar and a corresponding hole in the hanger.
75 The walls of the slot 20 and the flat surfaces of the hanger 18 are side bearing-surfaces which guide the type-bar as it swings about its pivot 21.

Each of the type-bars 10 is formed on its
80 upper side with an ear 23, which is provided with a pivot-pin 24, the ends of which project into openings 25 in jaws 26 and 27 of a type-bar-operating link 28, the rear end of which is pivoted at 29 to the sublever 6. This pivot-pin 24 is above and forward of the pivot 21 of the type-bar. The links 28 are provided with or are so formed and arranged as to constitute hoods or covers adapted to shield the
85 bearings of the type-bars from falling dirt. To this end a part 30 of each link extends across the space between the jaws 26 and 27, and at that part of the link which lies over the bearings the jaws are preferably spread apart and widened in the direction of the segment, forming on each side of the link a sort
90 of apron, as shown at 31.

In machines of the kind herein described as

usually constructed the type-bars are not spaced uniform distances apart, but are graduated in this respect, the distances between successive type-bars being least in the case of those bars near the center of the segment and greatest in those near the ends of the segment, as shown in Fig. 4. The different bearings obviously stand at different angles, and the several type-bars are pivoted to swing in different planes, having different inclinations to the vertical. As shown in Fig. 4, the several links are slightly modified in accordance with the differences in the arrangement of their respective type-bars. In those cases where the type-bar bearings are inclined to the vertical and where the distances between successive type-bars are great enough to allow of such construction the aprons 31 extend past the upper edges of the type-bars and a short distance down their sides; but near the center of the segment, where the bearings are nearly vertical and where the bars stand close together, the aprons 31 are narrower and less widely spread, and their lower edges may stand over the upper edges of the forks of the type-bars. In each link the aprons are spread as widely apart as the spacing of the type-bars will admit of or as is necessary in order that a part of the link or cover may lie vertically over the bearing, so as to catch and deflect any falling dirt which might otherwise find its way into the bearing. It will be observed that the link protects not only the type-bar bearing, but also its own pivotal connection with the type-bar.

As shown in the drawings, each of the links 28 is made of two pieces, the forward one consisting of sheet metal bent into an inverted-U shape, the top of the U forming a roof and the sides of the U forming the jaws 26 and 27 and the aprons 31. The metal is split back from the end, as shown at 32, so as to allow of the jaws being sprung apart to clear the end of the pin 24 to connect or to disconnect the joint between the link and the type-bar in assembling the machine or making repairs. The rear end of the sheet-metal piece is bent into a tube 33, Fig. 3, and into this tube the rear end piece of the link is threaded. This screw connection affords an adjustment of the link as to length and also allows the forward end of each link to be turned to an angle to correspond to that of its type-bar, which is important, inasmuch as the type-bars all lie at different angles.

So far as I am aware it is broadly new to utilize any type-bar-operating member as a means for protecting the type-bar bearing from dirt. It is also broadly new to provide each type-bar with any sort of individual movable dust-guard for its bearing, which dust-guard is not part of the type-bar itself.

Various changes and modifications may be made without departing from the gist of my invention.

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

1. In a type-writing machine, the combination with a type-bar, of a member for operating said type-bar, said member being movable relatively to said type-bar and being in position to protect the bearing of the type-bar from falling dirt.

2. In a type-writing machine, the combination with a type-bar, of means for actuating said type-bar, which actuating means is provided with a hood or cover to protect the bearing of the type-bar from dirt.

3. In a type-writing machine, the combination with a type-bar, of a member which is pivoted thereto and which constitutes a hood or cover to protect the bearing of said type-bar from dirt.

4. In a type-writing machine, the combination with a type-bar, of an operating-link therefor provided with a hood or cover to protect the bearing of said type-bar from dirt.

5. In a front-strike type-writing machine, the combination of a platen; a type-bar pivotally mounted below said platen; and an operating member for said type-bar which is provided with a hood or cover which extends over the bearing of the type-bar to protect said bearing from falling dirt.

6. In a front-strike type-writing machine, the combination of a platen; a series of type-bars, each pivotally mounted below the platen and each having a slot at its pivotal end; a hanger for each of said type-bars extending into the slot thereof; and an operating-link for each type-bar, each of said links being arranged to cover the end of its type-bar to prevent dirt from falling into the slot.

7. In a front-strike type-writing machine, the combination of a platen; a type-bar pivotally mounted below said platen; and an operating-link pivotally connected to said type-bar and having two jaws spaced apart and embracing a portion of said type-bar; and a part extending across the space between said jaws, whereby said link is adapted to protect the bearing of said type-bar from falling dirt.

8. In a front-strike type-writing machine, the combination of a platen; a type-bar pivotally mounted below said platen; and an operating-link pivotally connected to said type-bar; said link having two jaws spaced apart and embracing a portion of said type-bar, and a part extending across the space between said jaws, whereby said link is adapted to protect the bearing of the type-bar from dirt, and one of said jaws being disconnected from said part for a distance sufficient to allow the jaws to be sprung apart in order to assemble the pivotal connection between the type-bar and the link.

9. In a front-strike type-writing machine, the combination of a platen; a series of type-bars pivotally mounted approximately in the arc of a circle below said platen; and operat-

ing-links for the several type-bars, each of said links being adapted to protect the bearing of its type-bar from falling dirt.

10. In a front-strike type-writing machine, the combination of a platen; a series of type-bars pivotally mounted below said platen to swing in different planes; and operating-links for the several type-bars, each link having a part thereof disposed vertically above the bearing of its type-bar, whereby said bearing is protected from falling dirt.

11. In a type-writing machine, the combination of a series of type-bars and a series of individual hoods or covers adapted to protect the bearings of the several type-bars from dirt, each cover being movable relatively to its type-bar.

12. In a type-writing machine, the combination of a type-bar; and an actuating-link for said type-bar having two jaws which embrace a part of said type-bar and are pivoted thereto and are adapted to be sprung apart; said link as a whole being so formed and disposed as to shield the bearing of the type-bar from falling dirt.

13. In a type-writing machine, the combination of a series of type-bars mounted to swing in different planes; a series of levers for actuating said type-bars; and a series of links connecting said levers to said type-bars, each of said links having two parts, one of which is connected to an actuating-lever, and the other of which is pivoted to the type-bar and is so formed and disposed as to shield the bearing of said type-bar from dirt, the two parts of said link being adjustable the one with reference to the other, so that the end of the link which is connected to the type-bar may be turned into a plane corresponding to that in which the particular type-bar swings.

14. In a front-strike type-writing machine, the combination with the platen, of a series of type-bars pivotally mounted in an arc below said platen so that they swing in different planes; and a series of actuating-links for said type-bars having one or more aprons 31, so formed and disposed as to lie vertically over the bearing of a type-bar.

15. In a front-strike type-writing machine, the combination with the platen, of a series of type-bars pivotally mounted in an arc below said platen so that they swing in different planes; and a series of actuating-links for said type-bars, those links that are connected to

type-bars which swing in nearly-vertical planes, being so formed as to shield the bearings of their type-bars from dirt, and those links that are connected to type-bars which swing in planes more inclined to the vertical being differently formed, so as to shield the bearings of such type-bars from dirt.

16. In a type-writing machine, the combination with a type-bar having a pivotal bearing, of an actuating-link which is pivoted to said type-bar and which is so formed and disposed as to act as a shield to protect from dirt the pivotal bearing of the type-bar and also its own pivotal connection with the type-bar.

17. In a type-writing machine, the combination of a type-bar; a lever for operating said type-bar; and a link connecting said lever and type-bar, that end of said link which is connected to the type-bar being formed of sheet metal bent into a U shape and split longitudinally to allow the sides or jaws thereof to be spread apart.

18. In a type-writing machine, the combination of a type-bar; a lever for operating said type-bar; and a link connecting said lever and type-bar, that end of said link which is connected to said type-bar being formed of sheet metal bent throughout part of its length into a U shape to shield the type-bar bearing from dirt, and split longitudinally to allow of the two sides or jaws being sprung apart, the other part of said piece of sheet metal being bent into a tube, and that end of said link which is connected to said lever being threaded into said tube.

19. In a front-strike type-writer, the combination of a pivotally-mounted type-bar, and a roofed operating-link therefor, the roof being arranged over the pivotal bearing and so as to protect the same from falling dirt.

20. In a front-strike type-writer, the combination of a pivotally-mounted type-bar, and an operating-link arranged above the plane of the type-bar, said link being connected to the type-bar forward of its pivot and provided with a dust-shield over the pivot.

Signed in the borough of Manhattan, city of New York, in the county of New York and State of New York, this 7th day of April, A. D. 1904.

JACOB FELBEL.

Witnesses:

E. M. WELLS,
M. F. HANNWEBER.