

No. 843,914.

PATENTED FEB. 12, 1907.

B. C. STICKNEY.  
TYPE WRITING MACHINE.  
APPLICATION FILED SEPT. 8, 1903.

2 SHEETS—SHEET 1.

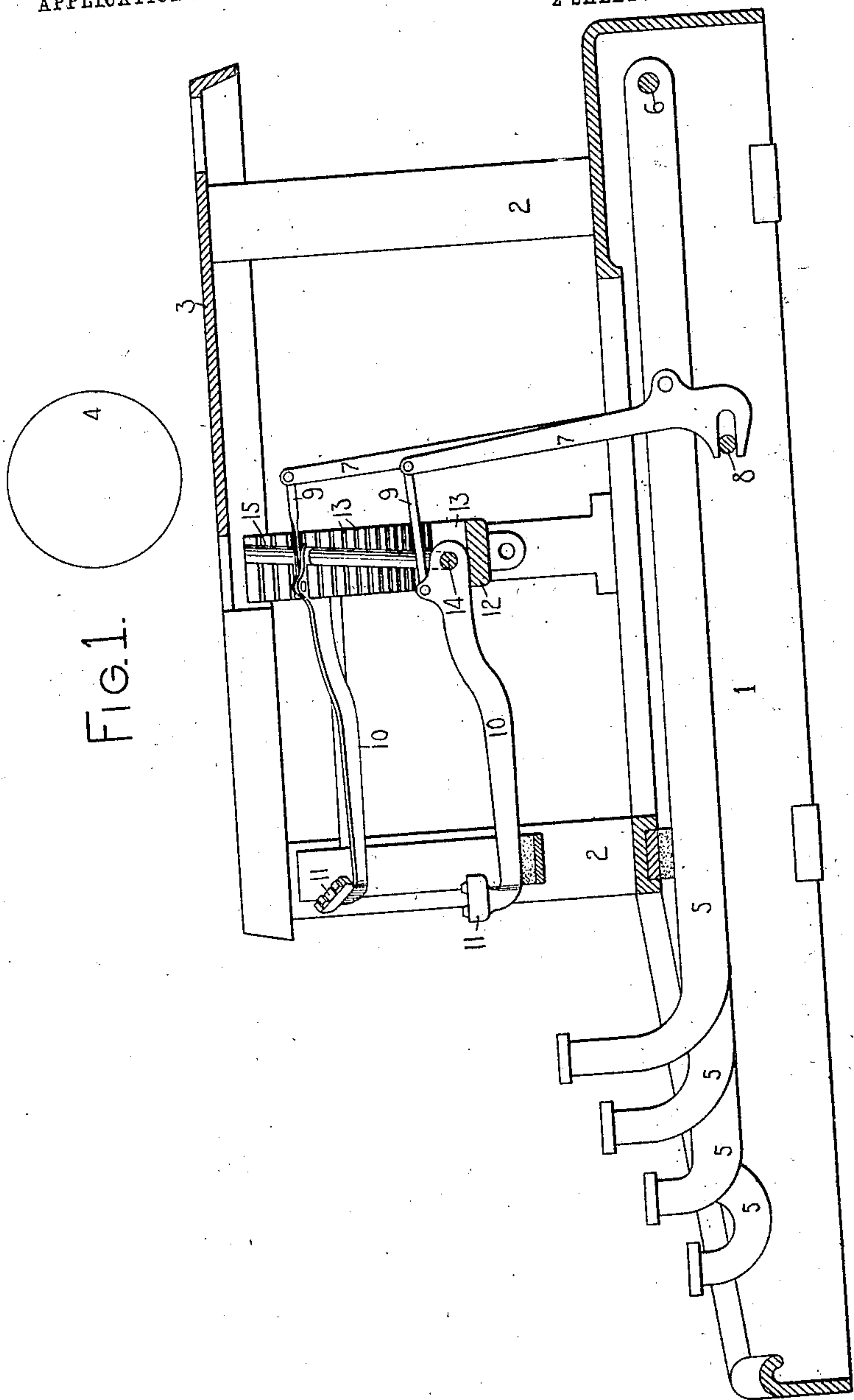


FIG. 1.

WITNESSES:

*K. V. Donovan.*

*E. M. Wells*

INVENTOR.

*Burnham C. Stickney*

by *James F. Felt*

HIS ATTORNEY

No. 843,914.

B. C. STICKNEY.  
TYPE WRITING MACHINE.  
APPLICATION FILED SEPT. 8, 1903.

PATENTED FEB. 12, 1907.

2 SHEETS—SHEET 2.

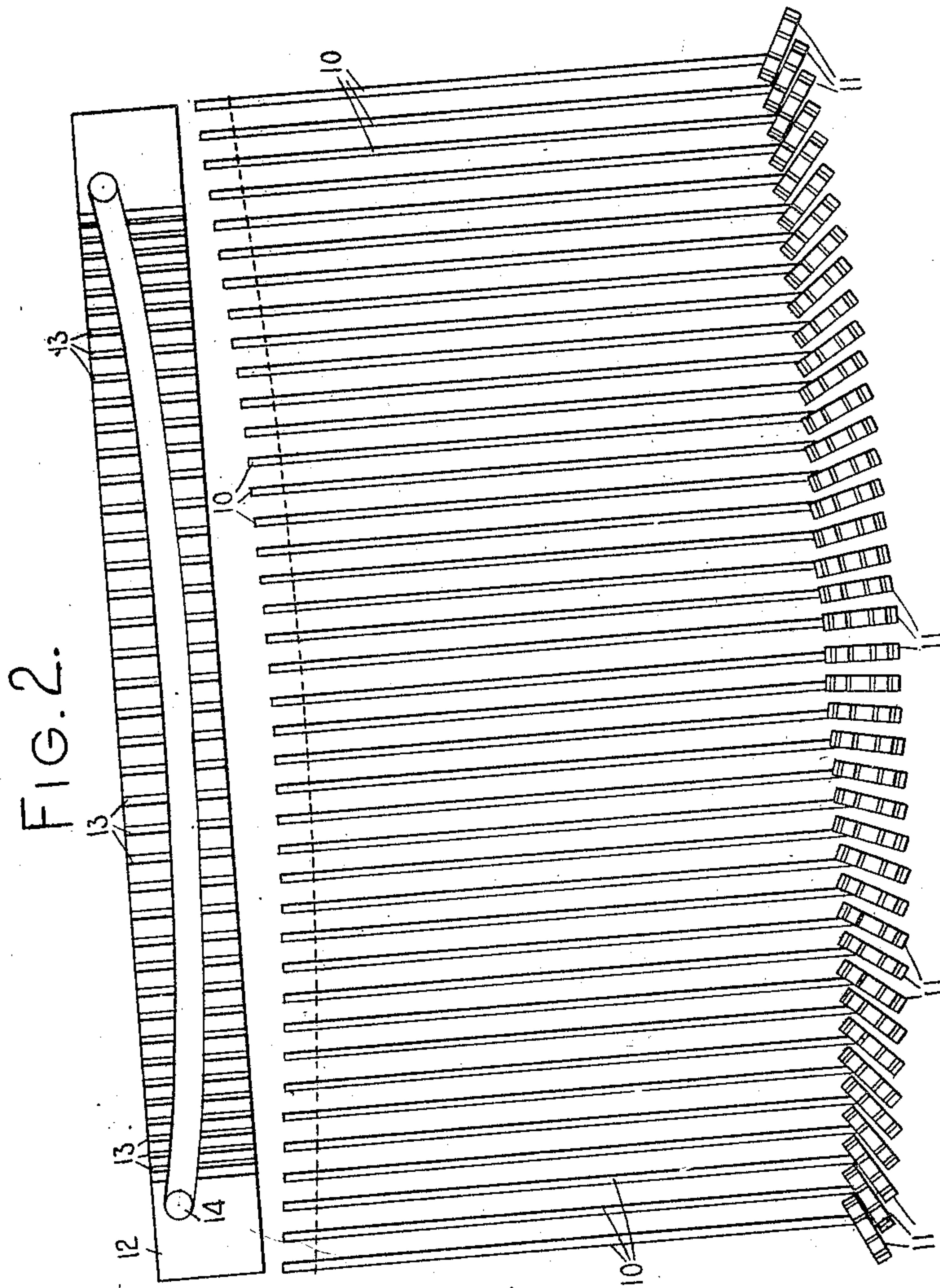


FIG. 2.

FIG. 3.

WITNESSES:

K. V. Donovan.

E. M. Wells.

INVENTOR:

Burham C. Stickney

by Jacob Feld

HIS ATTORNEY



# UNITED STATES PATENT OFFICE.

BURNHAM C. STICKNEY, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO  
UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A COR-  
PORATION OF NEW JERSEY.

## TYPE-WRITING MACHINE.

No. 843,914.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed September 8, 1903. Serial No. 172,358.

*To all whom it may concern:*

Be it known that I, BURNHAM C. STICKNEY, a citizen of the United States, and resident of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the manner of mounting the type-bars of type-writing machines. In some machines, and particularly those of the front-strike variety, where it is usual to employ multiple types and to mount all of the type-bars in less than half a circle the types are crowded close together, particularly at the sides of the system, where the types lie crosswise of the bars. It has accordingly been found necessary to separate the type-bars by far greater intervals at the sides than at the center of the system; but this is objectionable because by extending the arc occupied by the type-bars it becomes necessary to increase the angles of the types to the type-bars still further, thereby not only consuming more room, but also making it more difficult to guide the types by the usual means at the printing-point.

The object of my invention is to provide more room and better clearance for the types at the sides of the system without unduly extending the type-bar arc.

In the drawings forming part of this specification, Figure 1 is a central longitudinal vertical section of a front-strike writing-machine embodying my present improvements. Fig. 2 is a plan of a slotted type-bar segment. Fig. 3 is a projection showing the relative spacing and grouping of the type-bars and types.

In the several views like parts are identified by like signs.

In the type of machines illustrated the base 1 supports corner-posts 2, surmounted by a top plate 3, over which runs a carriage bearing a platen 4. Key-levers 5 extend from front to rear of the base and are fulcrumed upon a rod 6. Upstanding sublevers 7 are pivoted intermediate of their ends upon the key-levers and below the same engage a fulcrum-rod 8, while at their upper ends they are connected by links 9 to a system of rearwardly-striking radial type-bars 10, each carrying a multiple type 11, comprising

usually an upper-case and a lower-case letter. The type-bars are mounted in a segment 12, 55 having radial slots 13, in which work the type-bar hubs. The type-bars are pivoted upon a curved fulcrum-rod 14, which is seated in a curved slot 15, formed or provided in the segment. It will be understood that 60 by depressing the key-levers the sublevers are rocked forwardly and through the links pull the type-bars up to print.

It will be observed that the curved fulcrum-rod 14 is skewed, whereby the type-bars are 65 pivoted in a skewed arc, the ends of the arc being inclined upwardly and rearwardly, and hence away from the type-bar system. The type ends of the bars lie in a correspondingly-skewed arc, as will be understood from Fig. 70 3, the ends of the type-arc inclining inwardly or toward the type-bar system. The types lie at gradually-increasing angles to the type-bars beginning at the center of the system and overlap one another at the sides of the 75 system. Each type is also slightly staggered with relation to the next type by reason of the skewing of the type-bar fulcrum-rod, or, in other words, each type at the sides of the system lies a trifle in rear of the adjoining in- 80 ner type, whereby clearance is secured between the types, and the necessity of the usual excessive spacing between the type-bars at the sides of the system is avoided.

It will be observed that the angles of the 85 types and bars are such that by drawing the outer type-bar rearwardly a trifle as much clearance between the types can be secured as could be had in the usual way by providing a great lateral separation of the type- 90 bars. Thus a great advantage is gained by skewing the type-arc so as to draw each type back a little from the preceding type. As will be understood from Fig. 3, the type-bars may not only be spaced with approximate 95 evenness throughout the system, but they may consequently be mounted within a shorter arc than when the arc is not skewed.

The construction may also be defined as a series of segmentally-arranged type-bars that 100 are horizontally or substantially horizontally disposed when at rest and the pivotal centers of which are situated in an inclined plane that extends upwardly and rearwardly from the pivotal centers of the type-bars at the 105 center of the system or that the horizontally-



disposed type-bars have their pivotal centers arranged at progressively greater distances from a vertical plane coincident with the front face of the platen as the center of the system of type-bars is approached.

Preferably the type-bars are of approximately equal length, although my invention is not limited thereto.

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

1. In a type-writing machine, the combination with a system of type-bars, of a segment having slots in which the hubs of said type-bars work, and a curved fulcrum-rod upon which said type-bars are pivoted; said rod being skewed relatively to the direction of the slots, with the ends of the rod directed away from the type-bar system.

2. In a front-strike writing-machine, the combination with a system of rearwardly-striking radial type-bars, of a segment having radial slots in which said type-bars work, and a curved skewed fulcrum-rod on which said type-bars are pivoted; said rod lying in a groove provided in said segment, said groove and rod being inclined rearwardly from the bottom to the upper portion of the segment; and each type-bar being provided with a multiple type.

3. In a front-strike writing-machine, the combination with a system of rearwardly-striking radial type-bars, of a segment having radial slots in which said type-bars work, and a curved skewed fulcrum-rod upon which said type-bars are pivoted; said rod lying in a groove provided in said segment, said groove and rod being inclined rearwardly from the bottom to the upper portion of the segment; each type-bar being provided with a multiple type, and said type-bars being approximately equal in length, and being mounted at approximately equal intervals throughout the system.

4. In a type-writing machine, a system of radially-arranged type-bars, and a curved, skewed pivot-wire on which said type-bars are pivoted.

5. In a type-writing machine, a system of radially-arranged type-bars, and a curved,

skewed pivot-wire on which said type-bars are pivoted, the type ends of said bars lying in skewed positions corresponding to the skew of the pivot-wire.

6. In a type-writing machine, the combination of a system of radial type-bars; a curved, skewed pivot-wire on which said type-bars are pivoted; and a multiple type upon the end of each type-bar, said types lying at gradually-increasing angles to the type-bars from the center to the sides of the system, and overlapping one another at the sides of the system and each type being slightly staggered with relation to the next.

7. In a type-writing machine, the combination of a system of type-bars of approximately equal length; a curved pivot-wire formed as a skewed arc and on which said type-bars are pivoted, the ends of said arc being inclined away from the type-bar system, and the type ends of the bars lying in a correspondingly-skewed arc whose ends incline toward the type-bar system; and a multiple type upon the end of each bar, said types lying at gradually-increasing angles to the type-bars from the center to the sides of the system, and overlapping one another at the sides of the system, each being slightly staggered with relation to the next by reason of the skewing of the pivot-wire.

8. In a front-strike writing-machine, the combination of a system of rearwardly-striking radial type-bars; a type-bar segment with radial slots therein in which said type-bars work; a skewed wire contained in a groove in the segment and on which said type-bars are pivoted, each type-bar carrying a multiple type, the types lying at gradually-increasing angles to the type-bars from the center to the sides of the system, and overlapping one another at the sides of the system.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York, this 5th day of September, A. D. 1903.

BURNHAM C. STICKNEY.

Witnesses:

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