

1,382,789.

4 SHEETS—SHEET 1.



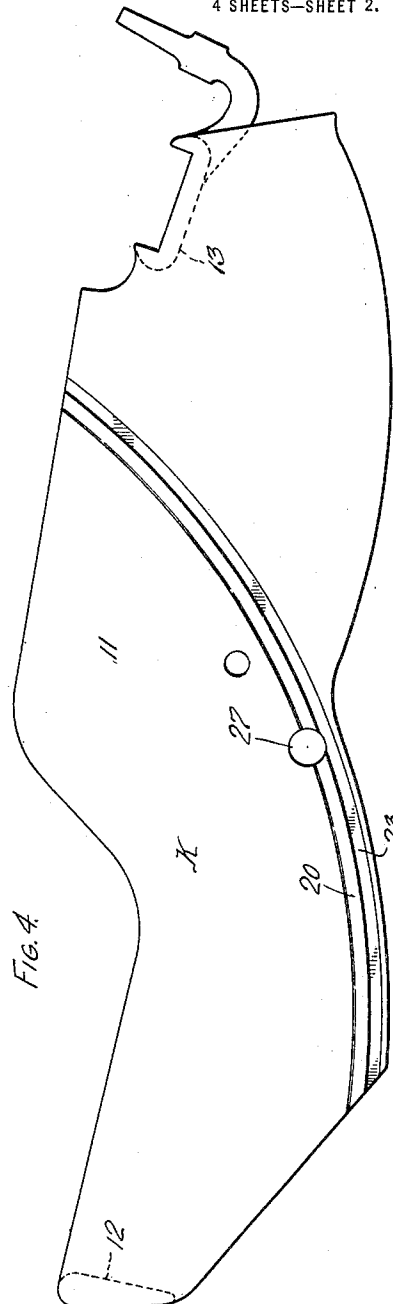
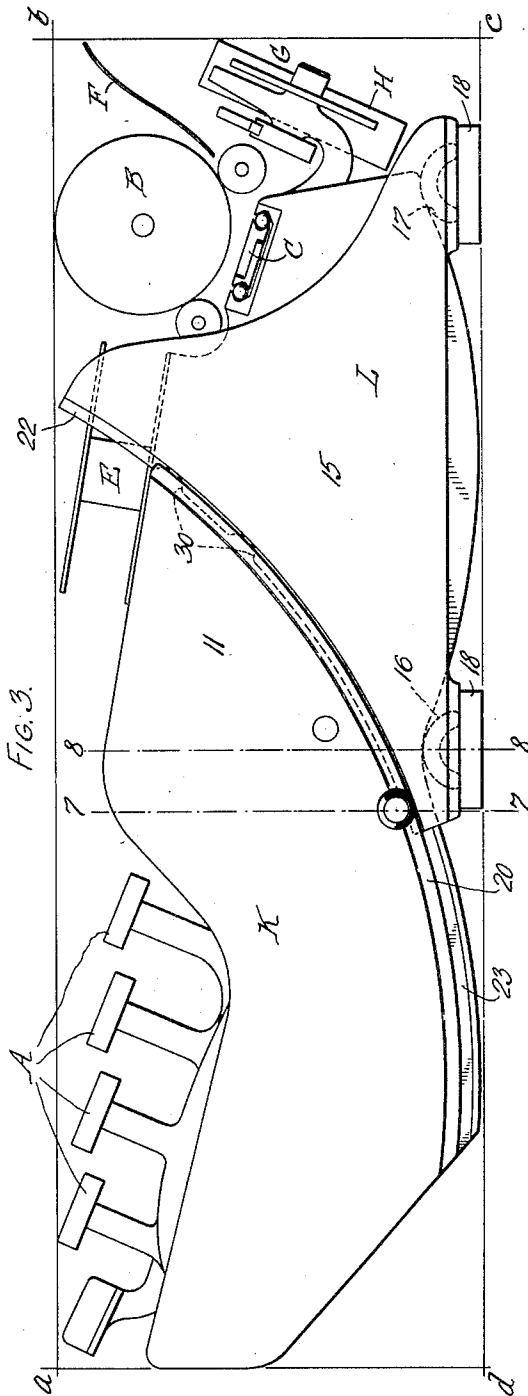
Emmit G. Latta.
By Wilhelm Parker.

ATTORNEYS.

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Patented June 28, 1921.

4 SHEETS—SHEET 2.



INVENTOR.
Emmit F. Latta.
 By *Hillebrand & Parker.*

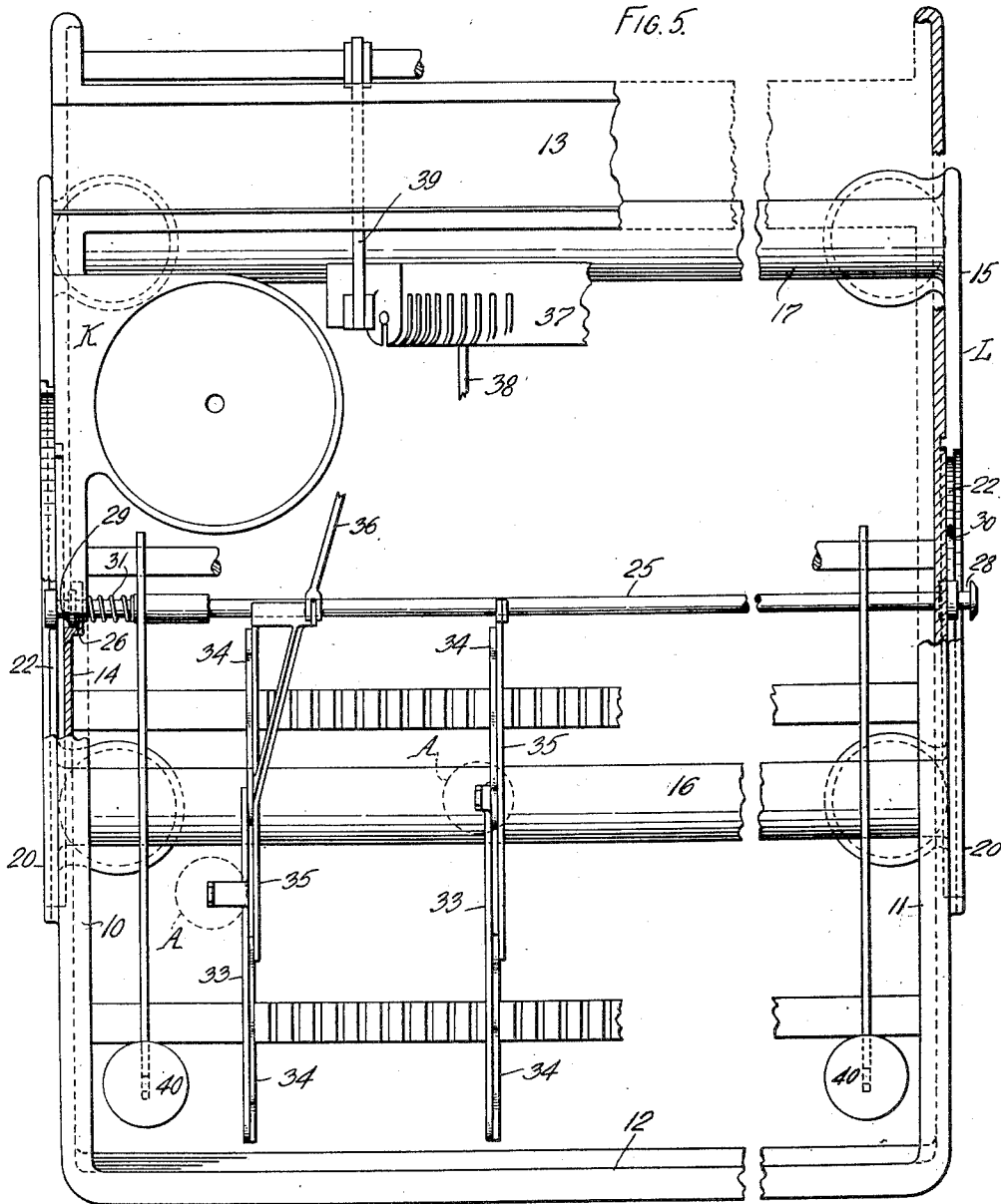
ATTORNEYS.

E. G. LATTA.
 TYPEWRITING MACHINE.
 APPLICATION FILED MAY 1, 1918.

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4 SHEETS—SHEET 3.



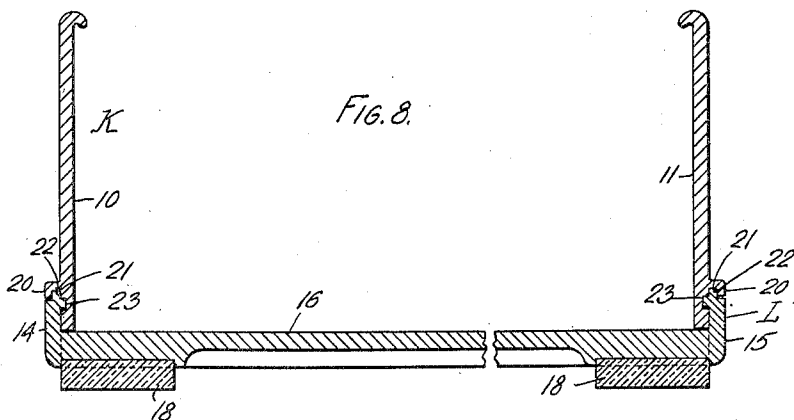
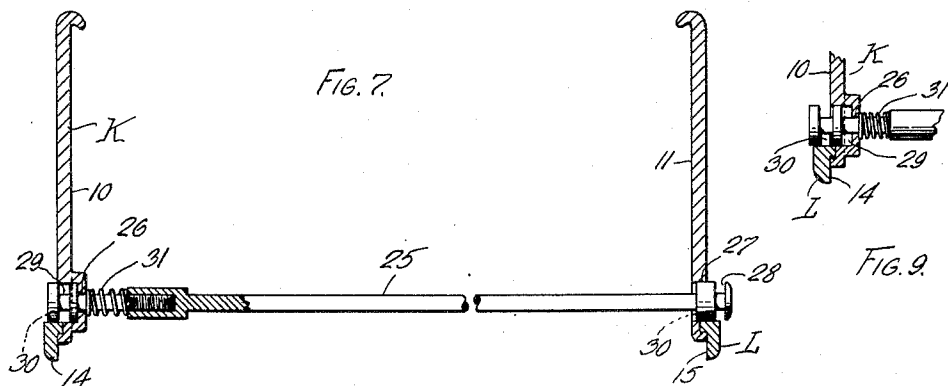
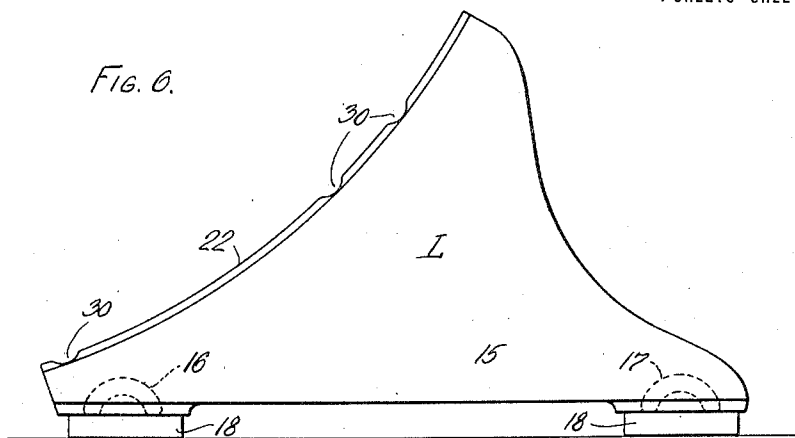
INVENTOR.
 Emmet G. Latta.
 By Hilke & Parker.
 ATTORNEYS.

E. G. LATTA.
TYPEWRITING MACHINE.
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4 SHEETS—SHEET 4.



INVENTOR.
Emmit G. Latta,
by William H. Parker.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

EMMIT G. LATTA, OF SYRACUSE, NEW YORK.

TYPEWRITING-MACHINE.

1,382,789.

Specification of Letters Patent. Patented June 28, 1921.

Application filed May 1, 1918. Serial No. 231,800.

To all whom it may concern:

Be it known that I, EMMIT G. LATTA, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Typewriting-Machines, of which the following is a specification.

This invention relates to improvements in portable typewriting machines of the kind having frames composed of parts which are relatively movable for collapsing the machine into a more compact form of convenience in shipping and carrying the machine from place to place.

One object of the invention is to produce a portable typewriting machine, preferably of the front strike class having pivoted type bars arranged to strike at the front side of the platen, in which the frame is of a novel construction adapting a machine equipped with the usual number, forty-two, of finger keys and type bars, to be quickly and easily reduced to less than half the dimensions of the standard machines having the same size keyboard and platen and an equal number of finger keys and type. Another object of the invention is to accomplish this result by means of a construction which is composed of the minimum number of parts and is very strong and rigid.

In carrying out this invention the usual transversely traveling carriage with its rotatable platen, the type bars and their actuating finger keys and connections in the usual relation to each other, together with the other operative parts of the machine are preferably all mounted on a single rigid frame which is mounted to shift or slide up and down, preferably in a curved path on a stationary rigid base or frame part for placing the machine in operative position and collapsing it into a compact form convenient for transportation. The type bar and key action is preferably designed so that when collapsing the machine the lowest part of the type bar segment can be lowered to the top of the table or supporting surface for the machine. When all of the operative parts of the machine are mounted as stated, on a single rigid adjustable frame or support, any looseness in the connection between this adjustable frame and its stationary supporting base cannot affect the action of the writing mechanism.

In the accompanying drawings:

Figure 1 is a longitudinal sectional elevation of a typewriting machine embodying the invention, showing the parts in position for use, and indicating by broken lines a higher position of the platen which can be obtained by a higher adjustment of the movable frame of the machine.

Fig. 2 is a transverse sectional elevation, on an enlarged scale, showing the locking device for the movable frame in released position.

Fig. 3 is a side elevation of the machine showing the same collapsed.

Fig. 4 is a side elevation of the movable frame detached.

Fig. 5 is a plan view partly in section of the machine, parts thereof being broken away or omitted to disclose the underlying parts.

Fig. 6 is a side elevation of the stationary base or frame of the machine.

Figs. 7 and 8 are transverse sections of the frame on lines 7-7 and 8-8, Fig. 3.

Fig. 9 is a detail section showing the released position of the locking device.

The typewriter shown in the drawings comprises, as usual, finger keys A arranged in banks or rows, preferably in four rows, at the lower front portion of the machine, a paper platen B journaled to rotate on a transversely movable carriage C at the upper rear portion of the machine, and type bars D pivoted in a segmental or arcuate arrangement between the platen and the finger keys at a lower elevation than the platen so as to strike at the front side of the platen. This invention is not necessarily restricted to any particular construction of these and the other working parts or devices of the machine. Some of the other parts of the machine, as one of the ribbon spools E, the table F, the carriage escapement G, and the driving spring drum H for the carriage are indicated in outline in the drawings to show their relative arrangement in the machine and indicate the positions of these parts in the operative and collapsed conditions of the machine.

In the construction shown in the drawings these parts, as well as the other operative parts of the machine, which are not shown, are mounted on a single rigid adjustable frame K which is mounted on a stationary supporting base or frame L so that the ad-

justable frame K can slide or shift on the stationary base or frame, preferably in a downwardly forwardly curved path, to permit the machine to be collapsed from the operative condition shown in Fig. 1 to the compact condition shown in Fig. 3. In the collapsed condition the entire machine occupies the small space indicated by the bounding lines *a-b-c-d* and can be inclosed in a case or container of the internal vertical dimensions represented by these lines.

The movable frame K shown comprises upright parallel side plates 10 and 11 connected by front and rear cross bars 12 and 13. This frame can be conveniently made in a single casting or, if desired, it can be built up of separate parts rigidly connected. The supporting base or frame L, as shown, comprises upright parallel side plates 14 and 15 connected by front and rear cross bars 16 and 17. This frame also can be a single casting or can be built up of separate rigidly connected parts, as preferred. 18 indicates four rubber feet or cushions which are cemented in seats at the corners of the base L to provide a cushioned support for the machine. Preferably, the adjustable frame K is slidably mounted on or connected to the base L by curved joints which enable the frame K with the parts carried thereby to slide up and down rearwardly and forwardly in a curved path on the stationary base. In the construction shown for this purpose the side plates 10 and 11 of the movable frame are provided with outwardly projecting curved ribs 20 which are machined to form downwardly opening grooves 21 adapted to receive corresponding curved ribs or tongues 22 on the upper edges of the side plates 14 and 15 of the stationary base. Just below the ribs 20 the side plates 10 and 11 are provided with laterally opening curved grooves 23 which receive curved tongues projecting inwardly from the side plates 14 and 15 of the stationary base. The two pairs of tongues and grooves arranged as stated form a double tongue and groove sliding joint at each side of the frame. These joints prevent the displacement of the adjustable frame from the supporting base and also prevent any spreading or lateral movement of the upper portions of the side plates of the base, thus avoiding the necessity for any connection between the upper portions of the sides of the base other than the movable frame and nevertheless insuring a strong rigid frame for the machine. The tongue and groove joints are preferably curved concentrically with a center so located above the keyboard that in the sliding of the frame K from the elevated operative position shown in Fig. 1 to the collapsed or inoperative position shown in Fig. 3, the rear portion of the frame moves forwardly and downwardly, while the front portion of

the frame and the keyboard move upwardly and forwardly. When the machine is collapsed the movable frame occupies a substantially horizontal position with the lowest portions of its side plates substantially in the horizontal plane of the surface on which the machine rests, as clearly shown in Fig. 3. The front portions of the lower edges of the side plates 10 and 11 are preferably curved concentrically with the curved joints connecting the two frame parts to enable the side plates to swing clear of the front cross bar 16 of the base. The cross bars 16 and 17 of the base limit the downward movement of the movable frame K, the latter in the collapsed position of the machine resting on said cross bars. The movable frame K can be disengaged from the stationary base by sliding the movable frame upwardly beyond the operative position shown in Fig. 1 until the tongues and grooves of the joints connecting the two frame parts are disengaged.

As will be seen in Fig. 3, when the adjustable frame K is in its lower inoperative position, the front portion of the keyboard is higher than at its rear portion, and the platen and other parts of the carriage are located behind and as low or lower than the highest part of the stationary base L. The described form and construction of the joints or sliding connection between the frame parts K and L are desirable, but obviously similar results could be obtained by means of joints or sliding connections of other constructions.

The movable frame K is held stationarily and rigidly in its upper operative position, and preferably in its lower inoperative position also, by a suitable locking or securing device. The locking device employed preferably consists of a rod 25 which, for convenience in assembling the machine is made in two sections joined by a screw connection. This rod extends transversely across the lower middle portion of the movable frame K with its ends extending out through and being movable endwise in holes 26 and 27 in the side plates of the movable frame. The locking rod 25 has enlarged ends with circumferential grooves 28 therein. One end of the rod bears and slides in the hole 27 in the frame side plate 11 and the opposite end of the rod slides in a cylindrical cavity 29 in the other side plate 10. The ends of the rod are adapted to enter and rest in segmental curved seats 30 in the tongues 22 on the edges of the side plates of the stationary base L for locking the movable frame. A suitable spring 31 which, as shown, surrounds the rod between a shoulder thereon and the side plate 10 of the movable frame normally holds the rod in the position shown in Figs. 5 and 7 with the enlarged ends of the rod seated in a pair of the seats

30. The engagement of one enlarged end of the rod with the bottom of the cavity 29 limits the movement of the rod by its spring 31. When the movable frame K is moved to a position in which the ends of the rod register with a pair of the curved seats 30 in the side plates of the base, the spring 31 will move the rod and cause its enlarged ends to enter the seats 30 and the movable frame will then be locked from movement on the stationary base L. By pressing the rod endwise to the left, as seen in Fig. 5, against the action of its spring 31 until the tongues 22 on the base register with the circumferential grooves 28 in the ends of the rod, the movable frame can be slid or shifted up or down on the stationary base L. As shown, the stationary base is provided with two pairs of the seats 30 at its upper portion to enable the movable frame to be locked in either of two elevated operative positions and with a third pair of the seats 30 near its lower portion for the purpose of locking the movable frame in its lower inoperative position. This locking device simultaneously locks the frame at both sides thereof. While the locking device described is simple and effective and therefore preferred, other suitable locking devices for the adjustable frame could be used.

The type bar actions including the finger keys and their connections to the type bars, and the shifting type bar segment can be constructed and arranged substantially as disclosed in my copending application filed Sept. 30, 1916, Serial No. 123,160. For instance, as shown in said application, each finger key is mounted on a keybar 33 pivotally connected to a pair of supporting bell crank levers 34. A drawbar 35 connects each pair of bell cranks and each drawbar is connected by a link 36 to one of the type-bars. The segment 37 is movably supported by rock arms 38 and 39 and is shifted by shift keys 40. As explained in said prior application when the machine is collapsed, the heels of the type-bars at the middle part of the segment which normally project below the lower edges of the sides of the movable frame K strike the table top and swing this segment to its upper case position. The downward projection of these parts therefore does not prevent the lowering of the frame K to the position shown in Fig. 3.

I claim as my invention:—

1. In a typewriting machine, the combination of a platen carriage, type-bars, a keyboard comprising actuating keys for said type-bars, a frame carrying all of said parts, and a stationary support on which said frame is movably mounted to shift in substantially upright position for collapsing the machine to reduce its dimensions.

2. In a typewriting machine, the combination of a platen carriage, type-bars, a keyboard

comprising actuating keys for said type-bars, a frame carrying all of said parts, and a stationary support on which said frame is slidably mounted for movement for collapsing the machine to reduce its dimensions.

3. In a typewriting machine, the combination of a platen carriage, type-bars, a keyboard comprising actuating keys for said type-bars, a frame carrying all of said parts, and a stationary support on which said frame is slidably mounted, and a curved guide which causes the frame to slide in a curved path on said support for collapsing the machine to reduce its dimensions.

4. In a typewriting machine, the combination of a platen carriage, type-bars, a keyboard comprising actuating keys for said type-bars, a frame carrying all of said parts, and a stationary support on which said frame is slidably mounted, and a downwardly and forwardly inclined curved guide which causes the frame to slide on said support in a downwardly and forwardly extending curved path whereby the rear portion of the frame is lowered and the front extremity of the frame is raised.

5. In a typewriting machine, the combination of a platen carriage, type-bars, a keyboard comprising actuating keys for said type-bars, a frame carrying all of said parts, and a stationary support on which said frame is mounted to shift downwardly while remaining substantially upright, said support terminating forwardly on said carriage, and the carriage when lowered occupying a position behind the upper portion of said stationary support.

6. In a typewriting machine, the combination of a platen carriage, type-bars, a keyboard comprising actuating keys for said type-bars, a frame carrying all of said parts and on the rear portion of which the carriage is mounted, and a stationary support on which said frame is slidably mounted to move in a curved path to lower the carriage from an operative position at a higher elevation than the type-bars and keyboard.

7. In a typewriting machine, the combination of a platen carriage, type-bars, a keyboard comprising actuating keys for said type-bars, a frame carrying all of said parts and on the rear portion of which the carriage is mounted, and a stationary support, said frame and support being connected by a curved joint which enables said frame to slide in a curved path on said support for collapsing the machine to reduce its dimensions.

8. In a typewriting machine, the combination of a platen carriage, type-bars, a keyboard comprising actuating keys for said type-bars, a frame carrying all of said parts and on the rear portion of which the carriage is mounted, and a stationary support, said

frame and support being connected by a curved tongue and groove joint which enables said frame to slide in a curved path on said support for collapsing the machine to reduce its dimensions.

9. In a typewriting machine, the combination of a platen carriage, a keyboard, a series of type-bars arranged in a normally upright arc, and a two-part frame having a curved interlocking sliding connection, and one of which parts carries said carriage and type-bars whereby the carriage and type-bars may be moved downwardly and forwardly by sliding one frame-part on the other.

10. In a typewriting machine, the combination of a platen carriage, a keyboard, a series of type-bars arranged in a normally upright arc, and a two-part frame having a curved interlocking sliding connection, and one of which parts carries said carriage, type-bars and keyboard whereby the carriage and typebars may be moved downwardly and forwardly, and the keyboard upwardly and forwardly by sliding one frame part on the other.

11. In a typewriting machine, the combination of a main frame supporting a keyboard, printing mechanism, and a platen carriage, and a supporting base having a curved sliding connection with the main frame, the curve forming part of a circle concentric with a point over the keyboard.

12. In a typewriting machine, the combination of a main frame supporting a keyboard, printing mechanism, and a platen carriage, and a supporting base having a curved sliding connection with said main frame that permits sliding movement of the main frame on the base and prevents lateral disengagement of said parts.

13. In a typewriting machine, the combination of a rigid main frame of substantially rectangular form in plan, supporting all of the operative parts of the machine, and a rigid supporting base of substantially rectangular form in plan on which the main frame is adjustably mounted.

14. In a typewriting machine, the combination of a rigid main frame of substan-

tially rectangular form in plan supporting all of the operative parts of the machine, and a rigid supporting base of substantially rectangular form in plan on which the main frame is slidably mounted.

15. In a typewriting machine, the combination of a supporting base having curved upper edges, and a main frame supporting a keyboard, printing mechanism, and a platen carriage, and having curved parts slidably fitting the curved upper edges of the base, and means for locking the main frame from movement on the base.

16. In a typewriting machine, the combination of a main frame supporting a keyboard, printing mechanism, and a platen carriage, a base having a movable connection with the main frame, and means including a transverse rod for locking the main frame to the base at both sides thereof.

17. In a typewriting machine, the combination of a main frame supporting a keyboard, printing mechanism, and a platen carriage, a supporting base on which the main frame is adjustably mounted, and means for simultaneously locking the main frame to the base at both sides thereof.

18. In a typewriting machine, the combination of a main frame supporting a keyboard, printing mechanism, and a platen carriage, a supporting base on which the main frame is adjustably mounted, and means for automatically locking the main frame to the base at both sides thereof.

19. In a typewriting machine, the combination of a main frame supporting a keyboard, printing mechanism, and a platen carriage, a supporting base on which the main frame is adjustably mounted, and a spring pressed rod acting normally to hold the frame and base in fixed relation, and when forced against the spring to unlock the frame.

Witness my hand this 25th day of April, 1918.

EMMIT G. LATTA.

Witnesses:

F. E. DUTTON,
L. C. GOLER.