T. L. KNAPP & C. C. HARTING.

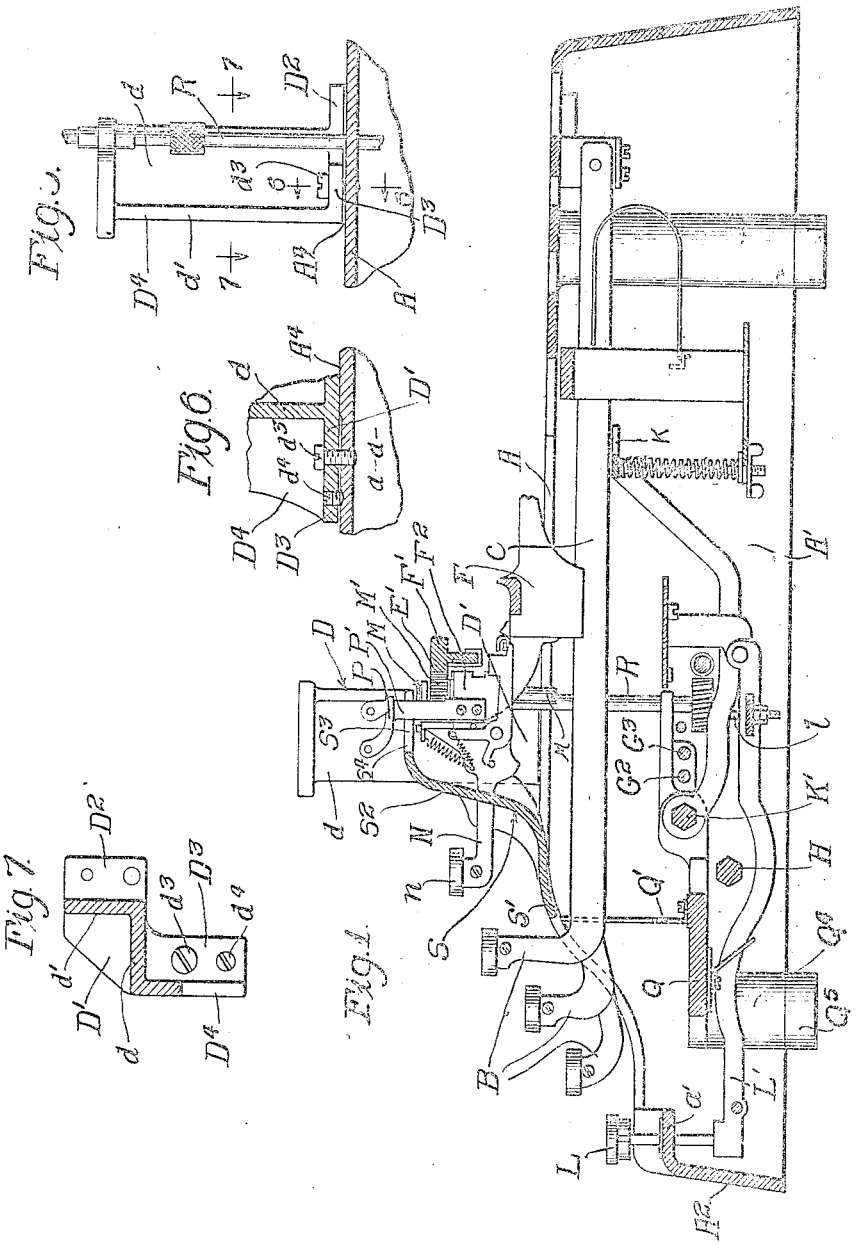
TYPE WRITING MACHINE FRAME.

APPLICATION FILED JAN. 23, 1914.

1,110,062.

Patented Sept. 8, 1914.

4 SHEETS—SHEET 1.



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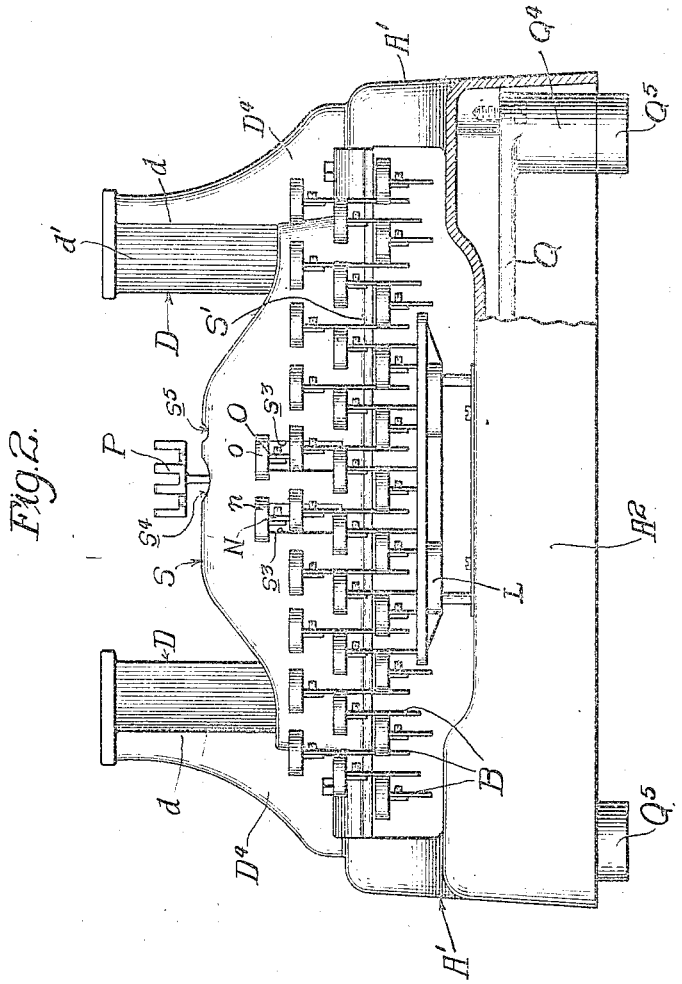
4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

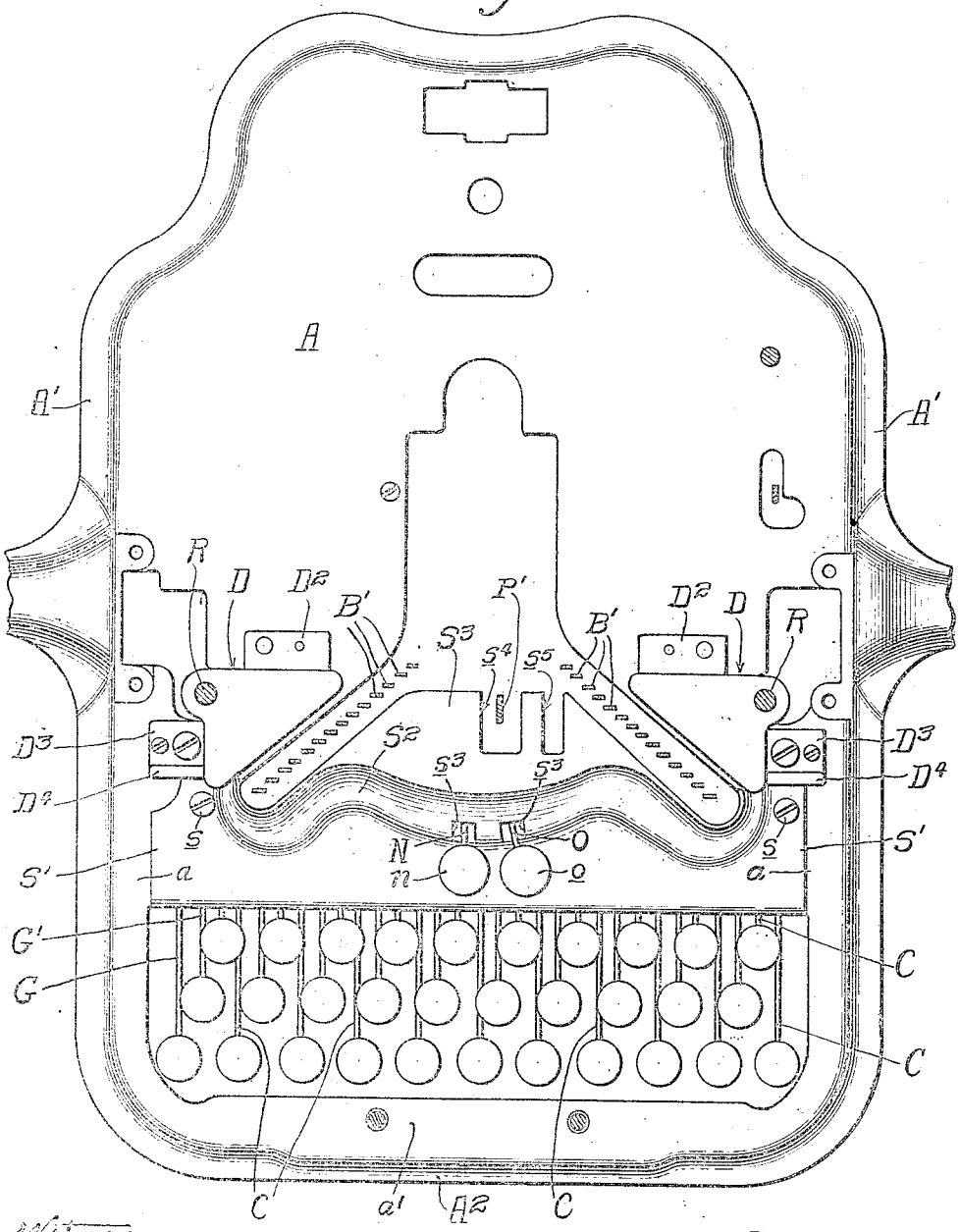

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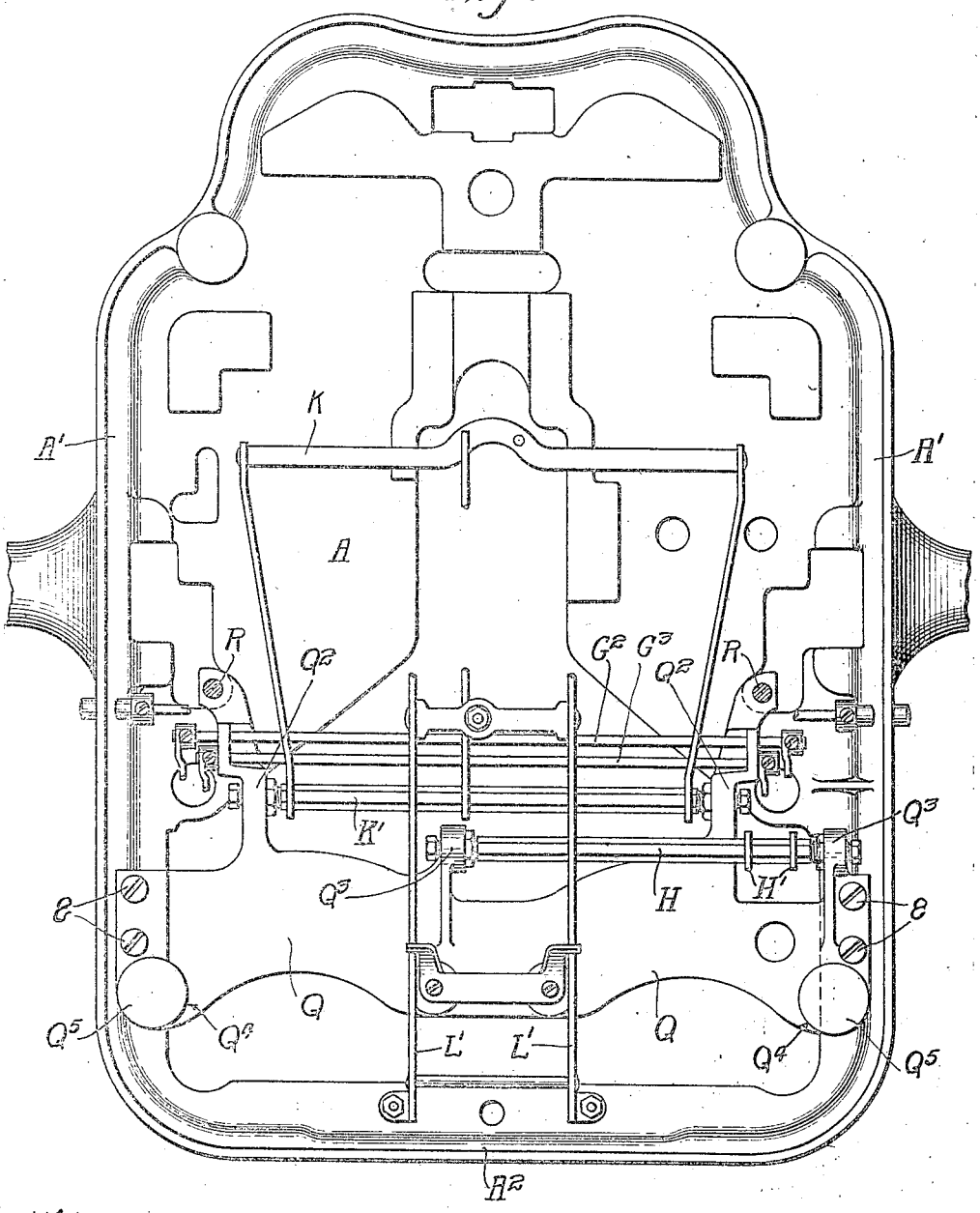
Fig. 4.



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UNITED STATES PATENT OFFICE.

THERON L. KNAPP AND CLAYTON C. HARTING, OF WOODSTOCK, ILLINOIS, ASSIGNORS TO THE OLIVER TYPEWRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TYPE-WRITING-MACHINE FRAME.

1,110,062. Specification of Letters Patent. Patented Sept. 8, 1914.

Application filed January 23, 1914. Serial No. 813,320.

To all whom it may concern:

Be it known that we, THERON L. KNAPP, and CLAYTON C. HARTING, citizens of the United States, and residents of Woodstock, in the county of McHenry and State of Illinois, have jointly invented certain new and useful Improvements in Type-Writing-Machine Frames; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in typewriting machines, and has reference more especially to the construction of the frame or base of the machine and means for supporting or sustaining the several main operative parts of the machine on such frame or base.

The typewriting machine to which the present invention relates is that kind known as an "Oliver" typewriter, and a machine having a base or frame of the same general character as that shown in prior Patent, No. 824,565, granted to Cross and Griffiths, October 30th, 1906. The improvements herein described and claimed are, however, applicable to machines of different details of construction from such "Oliver" machine.

The invention consists in the matters hereinafter described and pointed out in the appended claims.

In the accompanying drawings—Figure 1 is a view in central, vertical, longitudinal section of the front or forward part of a typewriting machine frame embodying our invention; Fig. 2 is a view in front elevation of the parts shown in Fig. 1; Fig. 3 is a plan view of the same with the operative parts above the base-plate and type-bars removed, showing the type-bar supporting standards in plan view and the type-bar links in section; Fig. 4 is a bottom view of the parts shown in Figs. 1 and 2; Fig. 5 is a detail view, in side elevation, of one of the type-bar supporting standards; Figs. 6 and 7 are detail sectional views taken on lines 6—6 and 7—7, respectively, of Fig. 5.

The main part or base of the machine frame comprises a horizontal, elevated top wall A, side walls A′, A′, made integral with and depending from the side margins of the top-plate A, and a front wall A^2, extending transversely of the front of the machine and made integral with the forward ends of the side walls A′, A′. The top wall A extends between the rear parts of the side walls A′, A′, and the forward parts of said side walls are extended forward of the front edge of said top-plate. The upper margins of the forward parts of the side walls are provided with inwardly extending, horizontal flanges *a*, *a*, Fig. 3, which forms forward extensions of the side portions of the horizontal top wall A, while the front wall A^2 is provided with a rearwardly extending, horizontal flange *a′* at its upper margin, connected at its ends with the flanges *a*, *a* of the side walls. Within the space formed between the forward margin of the horizontal top wall A and the flanges *a*, *a* of the side and front walls, is located the upturned or key-bearing ends B, B, of the key-levers C, C, which latter extend from front to rear of the machine frame and are substantially horizontal. The top-plate A extends over the rear parts of said key-levers and supports the paper carriage and other operative parts of the machine that are located above the key-levers.

The type-bars of the machine are arranged in two groups on opposite sides of the center of the machine, in the manner well known in the "Oliver" typewriting machine, and said type-bars are mounted on type-bar standards D, D which are mounted upon the elevated horizontal top-plate A of the frame or base, near the forward edge of said plate. The upright links B′, B′ which connect the key-levers C, C, with the type-bars, are located in two groups at the inner and forward faces of the type-bar standards D, D. The paper carriage, supporting the platen, as in the Oliver typewriting machine, is located at the rear of the said standards D, D. Parts of such machine, shown in the drawings, include the carriage rack-bar E′; the shift-frame F; the forward carriage-bar F′, on said frame; the escape-wheel shaft M, provided with a gear-pinion M′, which engages the carriage rack-bar E′; a bracket F^2 on the shift-frame, in which said shaft is mounted, shift-levers G, G′ for actuating the shift-frame, which act on a transverse rock-shaft H provided with upwardly extending crank arms H′; the universal bar K, which is rigidly connected with a transverse, horizontal rock-shaft K′,

located beneath the forward ends of the key-levers; the space key L, which is located above the top flange a' of the front wall A^2, and space-key levers L', L', that are connected with one of the arms of the universal bar by a link *l*.

The machine shown is provided with devices such as have heretofore been employed upon the "Oliver" typewriting machine, to-wit: a column stop or tabulating device embracing a tabulator key-lever N, which is mounted on, and extends forwardly from, the arm or bracket F^2, and is connected with the upper end of the escape-wheel shaft M, a right-hand marginal release device, embracing a key-lever O mounted on the bracket F^2 at one side of the tabulator key-lever N, and extending forwardly substantially parallel with said tabulator key-lever, said key-levers N and O being provided at their forward ends with keys *n*, *o*, and a ribbon-throw device, the base-plate P of which is supported in front of the paper carriage, by means of an upright standard P^1 on the bracket F^2.

Now, referring to the features of construction at the forward part of the machine frame, by which are supported the operative parts located beneath the forward ends of the key-levers, the same embrace features of construction as follows: A horizontal frame plate or bar Q extends across the forward part of the frame beneath the key-levers and at a distance below the upper margins of the forward parts of the side walls A', A' of the base frame. The inwardly projecting parts a^2, a^2 of the said walls are provided upon their lower surfaces with downwardly facing shoulders against which the ends of the said frame plate Q are secured by means of screws *q*, *q*. The frame plate Q is located at its forward ends at some distance from the front wall A^2 of the base frame, so as to leave an open space between the said frame plate and the front of the machine frame beneath the forward ends of the key-levers. A slotted guide plate Q' for the several key-levers is arranged vertically above the rear margin of, and is supported upon, the said frame plate Q. As shown, said guide plate is made of sheet metal and has at its lower edge a rearwardly bent flange which is fastened by screws to the frame plate. The said frame plate Q, Fig. 4, is provided at its rear edge, near its ends, with integral, rearwardly extending bracket arms Q^2, Q^2. Said bracket arms are employed to afford pivotal support for the rock-shaft K' of the universal bar, and are also employed to afford pivotal support for two transverse rock-shafts G^2, G^3, which are operated by the shift levers G, G'. Said frame plate also carries, at its ends, two integral, depending projections or hubs Q^4, Q^4, to the lower ends of which are secured rubber disks or cushions Q^5, Q^5, by which the forward part of the machine is sustained from the supporting surface on which the machine rests.

The making of the frame plate Q separate from the main part of the machine base, and securing it thereto in the position described, has the principal advantage of providing support for the operative parts beneath the forward ends of the key-levers, without the employment of the horizontal part of the base frame extending beneath the key-levers, such as is shown in said prior Patent, No. 834,565, so that an open space is afforded beneath the forward ends of the key-levers on which the keys are mounted, through which may fall any dust or dirt such as is liable to accumulate beneath the front parts of the key-levers in case there is a surface there located on which the same may be deposited. Such a surface located beneath the key-levers is difficult to reach for cleaning, while in the present construction the space beneath the key-levers is entirely open, forward of the frame bar Q, while the top of said frame bar may be easily reached through the space provided between its forward edge and front wall of the machine base. The use of the frame bar Q, made as described, also greatly facilitates the construction of the machine, because the bearing brackets or arms described, as well as the hubs which carry the elastic feet, may be easily cast thereon or made integral therewith.

Another feature of our improvement relates to the construction of the type-bar supporting standards D. Said standards, as illustrated, have the form of angle bars having each a flat part *d* which extends in a direction from the front to the rear of the machine and a transverse part *d'* transverse of the machine and extending from the part *d* inwardly or toward the center of the machine. Each of the standards is provided with an integral base plate D' at its lower end which is preferably extended rearwardly from the transverse vertical part *d'* in the form of a foot D^2, and said base plate D' is arranged to rest upon an elevated seat A^4 formed on the top-plate A to receive the same. Each standard D is also provided at its base or lower end with an outwardly extending, rigid arm D^3, which extends laterally and outwardly over the top-plate A to a point near the outer, lateral margin of said top-plate. A vertical, transversely extending rib D^4 extends outwardly from the front margin of the vertical part *d* of the standard, and is connected integrally with the front margin of the arm D^3. The outer end of the said arm D^3 is connected with the base plate by adjusting means affording rigid, but vertically adjustable, connection of the arm with the base-plate. As shown,

Figs. 5 and 6, such adjustable attaching means consists of a screw d^3 inserted through the arm and entering the top-plate A, and a second screw d^4 inserted vertically through said arm and having screw-threaded engagement therewith and bearing at its lower end against the top of said plate A. By adjustment of the screw d^4 the outer end of the said arm may be raised to throw the upper ends of the standard in a lateral direction or inwardly and outwardly, and when the standard has been so adjusted it may be firmly held in position by tightening the screw d^3.

Horizontal adjustment of the upper ends of the two standards in the manner described enables the type-bars carried by the standards to be adjusted accurately in position with respect to the striking point of the type.

In connection with a typewriting machine embracing the general features of construction shown in the drawings, we provide a cover or shield S for protecting from dust and dirt the operative parts at the center of the machine and forward of the paper carriage, embracing features of construction as follows: Said cover or shield S extends at its base across the frame of the machine forward of the type-bar standards D, D, its base portion S′ being substantially horizontal and being arranged to overlap, at the rear margins of its end portions, the forward margins of the horizontal top-plate A, to which it is secured by means of two screw bolts s, s. At the forward part of its end margins said base portions S′ is provided with depending flanges s', s', which extend downwardly inside of and fit against the inner margins of the inturned flanges a of the side walls A′ of the base. Said shield also embraces a rear part S^2 which rises from the base portion S′ and is shaped at its ends to conform to the inclination of the standards D, D, and at its margins is bent or directed rearwardly so as to come in contact with the front faces of the front stiffening flanges D^4 of the standard D. In said upwardly extending part S^2 of the shield are formed two upright slots s^3, s^3, through which pass the tabulator and marginal release levers N and O; the keys on said levers being located forward of the shield. Said upwardly extending part of the shield rises to a point above the hub of the gear pinion on the escape-wheel shaft but below the base of the ribbon-throw device, and has a rearwardly extending horizontal top portion S^3 which projects rearwardly over the parts below the ribbon-throw device, said horizontal top portion S^3 of the shield being provided with two forwardly extending notches s^4, s^5, one to receive the standard which supports the ribbon-throw device and the other the upright link by which said ribbon-throw device is operated.

The shield arranged as described serves not only to protect the parts concerned in the release of the paper carriage from the letter-spacing mechanism, from dust and dirt, but also serves to give a neat appearance to the front part of the machine above and at the rear of the keys.

It is to be understood that the machine frame embracing the several features hereinbefore described may be variously modified with respect to details, without departing from our invention, and that we do not desire to be limited to the exact features of construction illustrated, except so far as pointed out in the appended claims.

We claim as our invention:

1. In a typewriting machine, the combination with substantially horizontal key-levers, of a machine base comprising side walls, a front wall, and a horizontal top wall made integral with each other, said top wall extending between the rear parts of the side walls and over the rear parts of the key-levers, and the parts of the side walls forward of the top wall and also the front wall being provided, at their upper margins, with inwardly extending flanges, forming an open space in which the forward ends of the key-levers are located, and a horizontal frame member, extending transversely between said side walls at a distance rearwardly from the front wall, said frame member being located at a distance below the level of the flanged upper margins of the side and front walls and beneath the forward parts of the key-levers.

2. In a typewriting machine, the combination with substantially horizontal key-levers, of a machine base comprising side walls, a front wall, and a horizontal top wall made integral with each other, said top wall extending between the rear parts of the side walls and over the rear parts of the key-levers, and the parts of the side walls forward of the top wall and also the front wall being provided, at their upper margins, with inwardly extending flanges, forming an open space in which the forward ends of the key-levers are located, and a horizontal frame member, extending transversely between said side walls at a distance rearwardly from the front wall, said plate being located at a distance below the level of the flanged upper margins of the side and front walls and beneath the forward parts of the key-levers, and being provided with integral, rearwardly extending bracket arms affording supports or bearings for operative parts of the machine located beneath the key-levers.

3. In a typewriting machine, the combination with substantially horizontal key-levers, of a machine base, comprising side

and front walls and a horizontal top wall made integral with each other, said top wall extending between the rear parts of the side walls and over the rear parts of the key-levers, and a horizontal frame plate extending transversely between the side walls at a distance below the upper margins of the latter and beneath the forward ends to the key-levers, said frame plate being attached at its ends to the side walls and affording supports or bearings for the operative parts of the machine located at the forward part of the same beneath the key-levers.

4. In a typewriting machine, the combination with substantially horizontal key-levers, of a machine base, comprising side and front walls and a horizontal top wall made integral with each other, said top wall extending between the rear parts of the side walls, and over the rear parts of the key-levers, a horizontal frame plate extending transversely between the side walls at a distance below the upper margins of the latter and beneath the forward ends of the key-levers, said frame plate being attached at its ends to the side walls, and a slotted guide plate for the key-levers attached at its lower edge to, and rising from, said transverse frame plate.

5. In a typewriting machine, the combination with substantially horizontal key-levers, of a machine base, comprising side and front walls, and a horizontal top-plate made integral with each other, said top wall extending between the rear parts of the side walls and over the rear parts of the key-levers, and the parts of the side walls forward of the top wall and the said front wall forming an open space in which the forward ends of the key-levers are located, and a frame plate extending transversely between the forward parts of the side walls below the level of said flanges and beneath the forward ends of the key-levers; said side walls being provided with downwardly facing shoulders to which the ends of the said frame plate are secured.

6. In a typewriting machine, the combination with substantially horizontal key-levers, of a machine-base, comprising side and front walls and a horizontal top wall, made integral with each other, said top wall extending between the rear parts of the side walls and over the rear parts of the key-levers, and a horizontal frame plate extending transversely between the side walls below the upper margins of the latter and beneath the forward parts of the key-levers, said side walls being provided with downwardly facing shoulders to which the ends of said frame plate are attached, said frame plate being provided with integral, rearwardly extending bracket-arms, affording bearings for operative parts of the machine that are located at the forward part of the same beneath the key-levers.

7. In a typewriting machine, the combination with a machine frame, of two type-bar supporting standards secured at their lower ends to said frame, each of said standards being provided at its base with an integral, laterally extending arm, and means adjustably connecting said arms with the machine frame, affording vertical adjustment of the outer ends of said arms relatively to the top-plate and horizontal adjustment of the upper ends of said standards toward or from each other.

8. In a typewriting machine, the combination with a machine frame provided with a horizontal top plate, of two type-bar supporting standards, each provided at its base with a laterally extending, integral arm, said top plate being provided with elevated seats against which the lower ends of the standards are secured, and means adjustably connecting said arms with the base plate affording vertical adjustment of the outer ends of the arms and horizontal adjustment of the upper ends of the standards toward or from each other.

9. In a typewriting machine, the combination with a machine base provided with a horizontal top plate, of two type-bar supporting standards secured to the top plate at their lower ends and provided at each lower end with laterally extending integral arms, and means for adjustably connecting each of said arms with the base plate, consisting of an adjusting screw which passes through the arm and has screw-threaded engagement with the top plate and a second adjusting screw which has screw-threaded engagement with the arm and abuts against the top-plate.

10. In a typewriting machine, the combination with a machine base provided with a horizontal top-plate, of two type-bar supporting standards attached at their lower ends to said top-plate, each of said standards being provided at its base with a horizontal, laterally extending, integral arm, and having an outwardly extending, integral flange, rigidly connecting said arm with the standard, and means adjustably connecting said arms with the top-plate.

11. In a typewriting machine, the combination with substantially horizontal key-levers, of a machine base provided with side walls and with a horizontal top wall extending over the rear parts of the key-levers, type-bar supporting standards, a paper carriage located at the rear of said standards, type-bar operating links rising from the key-levers in two laterally disposed groups at the forward and inner faces of said standards, a key-lever, forming part of means for controlling the endwise move-

ment of the carriage, said key-lever being located in front of the carriage between said groups of links and extending forwardly over, and at a distance above the key-levers, and a shield extending across the machine base forward of the standards and links and above the key-levers and attached at its ends to the machine base, said shield rising at its central part above said key-lever, and being provided in such central part, below its upper edge, with an aperture through which the key-lever extends.

12. In a typewriting machine, the combination with substantially horizontal key-levers, of a machine base provided with side walls and with a horizontal top wall extending over the rear parts of the key-levers, type-bar supporting standards, a paper carriage located at the rear of said standards, type-bar operating links rising from the key-levers in two laterally disposed groups at the forward and inner faces of said standards, a standard for supporting a ribbon-throw device located in front of the carriage between said groups of links, a key-lever located in front of the carriage between said groups of links and which extends forwardly over, and at a distance above, the key-levers, and a shield extending across the machine base forward of the standards and links and above the key-levers and attached at its ends to the machine base, said shield rising at its central part above the said key-lever and being provided at its top with a rearwardly directed horizontal part having therein a notch for the standard of the ribbon-throw device and also, in its said central part below its horizontal top flange, with an aperture through which the carriage-controlling key-lever extends.

In testimony, that we claim the foregoing as our invention we affix our signatures in the presence of two witnesses, this 19th day of January A. D. 1914.

THERON L. KNAPP.
CLAYTON C. HARTING.

Witnesses:
EUGENE WANN,
MAURICE D. HERMAN.