W. P. KIDDER.

INCASED COLLAPSIBLE TYPEWRITER.

APPLICATION FILED NOV. 30, 1918.

1,383,638.

Patented July 5, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

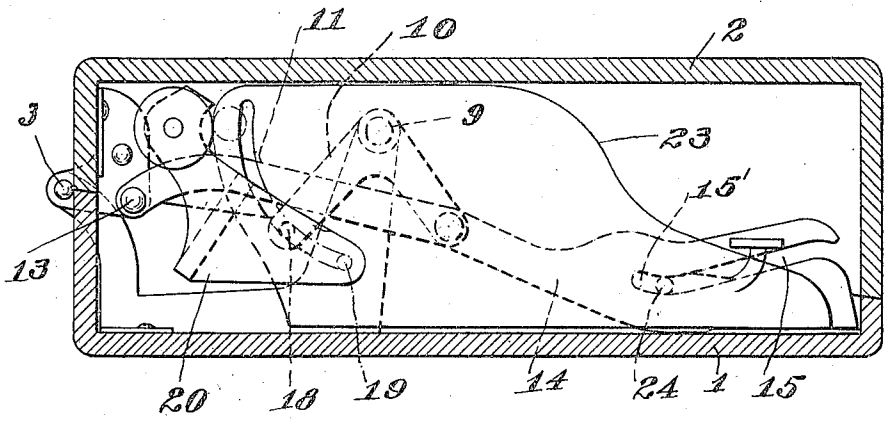
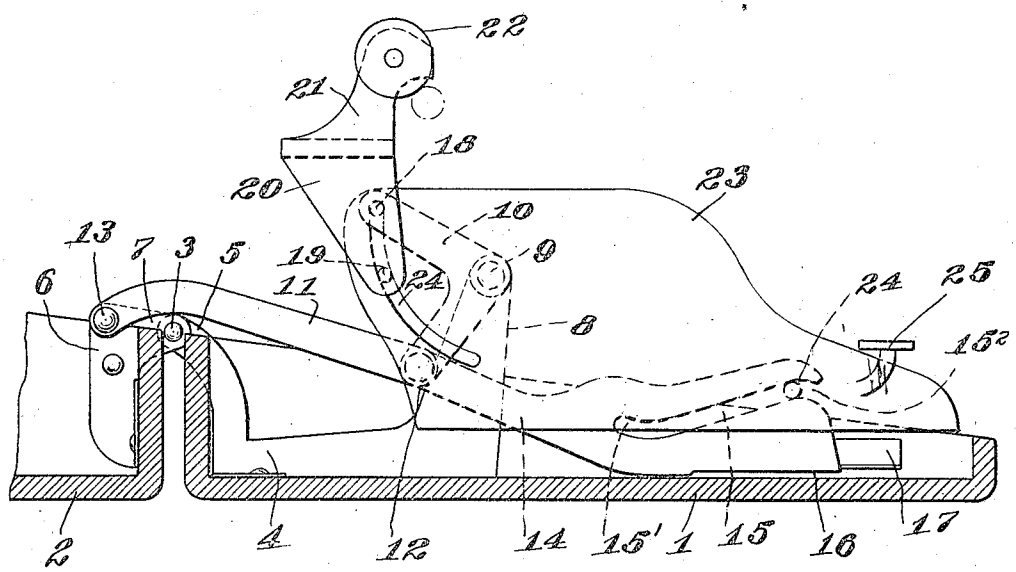


Fig. 2.



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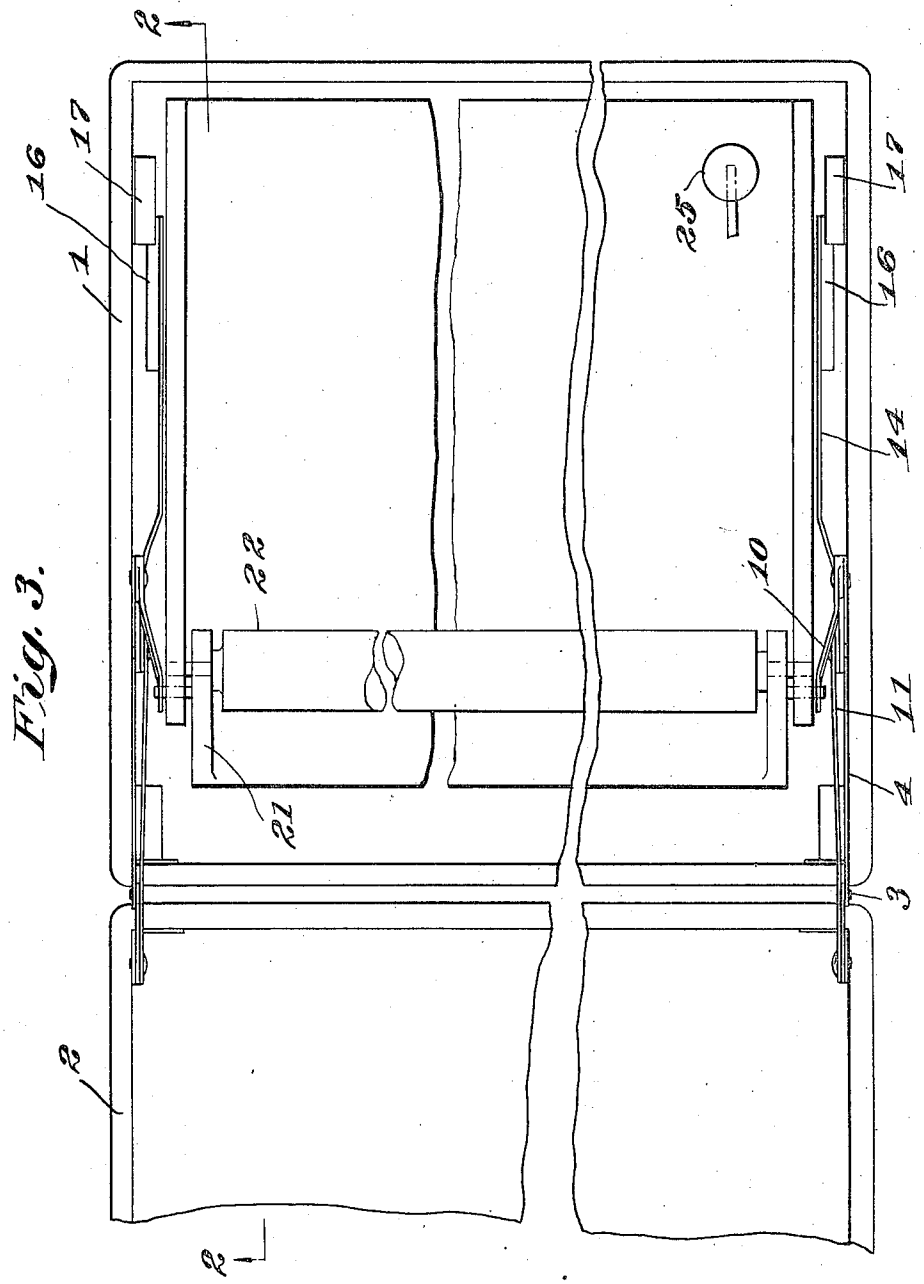
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

WELLINGTON P. KIDDER, OF JAMAICA PLAIN, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-THIRD TO HARRY BATES, OF NEW YORK, N. Y., AND TWO-THIRDS TO INTERNATIONAL LETTERGRAPH CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

INCASED COLLAPSIBLE TYPEWRITER.

1,383,638. Specification of Letters Patent. Patented July 5, 1921.

Application filed November 30, 1918. Serial No. 264,815.

To all whom it may concern:

Be it known that I, WELLINGTON P. KIDDER, a citizen of the United States, residing at Jamaica Plain, county of Suffolk, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Incased Collapsible Typewriters, of which the following is a specification.

This invention relates to improvements in typewriters and particularly to incased machines of collapsible or otherwise compactible nature. The object of the present invention is to produce a case which with its machine will upon its closing simultaneously effect the collapse, fold or other movement of the machine by which it is rendered more compact.

The difficulties of effecting compact incasement by which a portable typewriter of minimum size may be secured is obviously great and the necessity of preserving practical standards of typewriter characteristics is obvious. Two general relationships desired may be initially considered. First, the positive and simultaneous actuation of case movement and machine collapse, and second, a like relationship in relative movement of machine and case.

While these features are fundamentally distinct and each highly important they are capable of combination. In the embodiment presented herein as illustrative of my invention, I have shown such a combined relationship.

Throughout the specification and drawings like reference characters are employed and in the drawings—

Figure 1 is a side view partly in section of an incased machine in closed position.

Fig. 2 is a similar side elevation with case open, and

Fig. 3 a similarly treated plan view of the machine with case open.

In the embodiment shown I have indicated at 1 the lower or base portion of a case and at 2 the upper or cover portion. The two portions are hinged together at 3 and as shown are preferably divided on forward sloping line of separation constituting the contacting edges of the sections 1 and 2.

Within the section 1 at each side near the rear thereof is set a plate 4. Each plate 4 has a rearward extension 5 which extends through the back of the section 1, providing one member of each hinged pair of which 3 is the pivot. The opposite member of each hinge pair is a plate 6. One of these plates is set in each corner of the cover member 2 at the rear edge thereof and comprises an extension 7 forming the other hinge member of the common pivot 3. The plate 4 in the base member 1 is extended forward at some distance from the back and terminates in an upwardly projecting bearing 8 to which is fulcrumed at 9 a bell crank 10. The lower arm of the bell crank 10 is connected by a curved link 11 with the cover being pivoted to the bell crank at 12 and to the plate 6 in the cover at 13.

Also connected to the bell crank at the pivot 12 on each side of the base section 1 is a cam piece 14 having a cam slot 15 and a lower lip 16 guided under a flange 17 attached on each side of the bottom section 1 near the front thereof. The bell cranks, plates and cam pieces constitute, individually and collectively, the support of the machine parts.

The upper arm of the bell crank 10 receives the cross rods 18 and 19 of the frame 20 carrying the indicated carriage 21 and platen 22. As indicated the frame 20 is collapsible within the main frame 23 of the machine (see Fig. 1), the ends of the shafts 18 and 19 being guided in the slots 24. In this compacted position shown in Fig. 1, with the case closed, the bell crank 10 through its pivotal connection with the shaft 18 holds the carriage structures 20, 21 and 22 in position of retreat behind the frame 23 of the machine proper, being itself held by the forward thrust of the link 11 moved by the swing of the cover 2 in closing. The closing movement of the cover therefore not only collapses the frame 20, but securely and steadily holds it collapsed and locked by the straightening movement of the link 11 in its relation to the bell crank 10. In this position the cam member 14 with its slot 15 holds the end of the bar 24 at the lower portion of said slot which at this phase is substantially horizontal with the base member 1 as indicated at 15'. This securely positions the frame 23 close to the bottom of the base section 1 so that it is in its closest possible relation to it and securely held in such position.

In bringing the machine to its position

shown in Fig. 2, the upward swing of the cover member 1 starts the bell crank 10 in rocking movement on its pivot 9, lifting the frame 20 to its erected position relative to the frame 23. Simultaneously therewith the cam member 14 is withdrawn and being itself held against upward lift by the engagement of its flange 16 with the overlying flange 17 compels the frame 23 to lift and clear itself from the bottom of the base member 1 for a sufficient distance to allow free movement of the keys, one of which is indicated in Fig. 2 at 25. In this position the ends of the shaft 24 reach a second horizontal portion of the cam slot 15, said portion being indicated at 15^2, the machine being thereby securely supported at its forward end in its lifted position.

This elevation of the front of the machine proper to clear it from the base is supplemented by a corresponding elevation of the rear of the machine. This elevation of the rear is effected through the bell crank 10 by reason of its continued movement after it has seated the ends of the shaft 18 in the upper end of the slot 24. The continued movement of the bell crank 10 in the last phase of the opening of the cover 2 therefore elevates the rear end of the entire machine. It will be understood that while these elevations of the front and rear of the machine are under the conditions shown highly desirable and important, that they are in fact independent and either might be independently effected where desired. These movements singly or combined constitute relations of vertical variation or shift of the machine and its parts relative to the case.

The structure above described affords not only a highly convenient self-operating combination which makes the machine available for use immediately upon its opening, but makes possible the use of a case of minimum size for its contained machine.

Various modifications may obviously be made in the form and arrangement of parts and in the mechanism of relationship, all without departing from the spirit of my invention if within the limits of the appended claims.

What I therefore claim and desire to secure by Letters Patent is:—

1. In a device of the class described, a case comprising a pair of members mounted for relative movement in opening and closing, a typewriting machine frame comprising a pair of members mounted for relative movement to extend or compact the frame, a support carried by one case member and operatively associated with said frame members, and an operating connection between said support and the other case member for effecting said relative movement.

2. In a device of the class described, a case comprising a pair of members mounted for relative movement in opening and closing, a typewriting machine frame including a collapsible portion mounted for movement relative to the rest of the frame, a support carried by one case member operatively connected with said frame members for moving said frame relative to said case and for moving said collapsible portion relative to the rest of the frame.

3. In a device of the class described, a case comprising a pair of members mounted for relative movement in opening and closing, a typewriting machine frame including a collapsible portion mounted for movement relative to the rest of the frame, a support carried by one case member and operatively connected with said collapsible frame member, and an operating connection between said support and said other case member for effecting said relative movement.

4. In a device of the class described, a case comprising a pair of members mounted for relative movement in opening and closing, a typewriting machine frame, a pivoted support carried by one case member and operatively connected with said frame, and an operating connection between said support and the other case member for effecting said relative movement.

5. In a device of the class described, hinged cover and base members, a support on each side of said base member, a bell crank lever fulcrumed on each support, a typewriting machine frame including a collapsible member, a connection between one arm of each bell crank and said collapsible member, and a link connection between the other arm of each bell crank and said cover.

6. In a device of the class described, hinged cover and base members, a support on each side of said base member, a bell crank lever fulcrumed on each support, a typewriting machine frame including a collapsible member, a connection between one arm of each bell crank and said collapsible member, a link connection between the other arm of each bell crank and said cover, and a cam lift member on each side of said base, and connected to said bell crank lever and engaging said frame.

7. In a device of the class described, hinged cover and base members, a support on each side of said base member, a bell crank lever fulcrumed on each support, a typewriting machine frame on said base member including a vertically collapsible carriage frame member, a connection between one arm of each bell crank and said collapsible member, and a link connection between the other arm of said bell crank and said cover.

8. In a device of the class described, hinged cover and base members, a support on each side of said base member, a bell crank lever fulcrumed on each support, a

typewriting machine frame on said base member including a vertically collapsible carriage frame member, a connection between one arm of each bell crank and said collapsible member, a link connection between the other arm of said bell crank and said cover, and a cam lift member on each side of the base and connected to said bell crank lever and engaging said frame.

9. In a device of the class described, cover and base members mounted for relative movement in opening and closing, a support on said base member, a lever fulcrumed on said support, a typewriting machine frame including a collapsible frame member, a connection between one end of said lever and said collapsible member, and a connection between the other end of said lever and said cover.

10. In a device of the class described, cover and base members mounted for relative movement in opening and closing, a support on said base member, a lever fulcrumed on said support, a typewriting machine frame including a collapsible frame member, a connection between one end of said lever and said collapsible member, and a connection between the other end of said lever and said cover, and a lift member on each side of said base and connected to said lever and engaging said machine.

11. In a device of the class described, hinged cover and base members, a support on each side of said base member, a bell crank lever on each support, a typewriting machine frame operatively connected with one arm of said bell crank lever, and a link connection between the other arm of said bell crank lever and said cover, and a cam lift member on each side of said base and connected to said bell crank levers and operatively engaging said frame.

12. In a device of the class described, cover and base members mounted for relative movement in opening and closing, a typewriting machine frame, a cam lift member on said base and operatively engaging said machine frame, and an operating connection between said cam lift member and said cover for effecting said relative movement.

13. In a device of the class described, a case comprising a pair of members mounted for relative movement in opening and closing, a typewriting machine frame, a reciprocable plate guided in said case member, a cam slot in said plate comprising an inclined portion and a dwell at each end thereof, a pin on said frame and disposed in said slot for raising or lowering the machine relative to said base.

14. In a device of the class described, a case comprising a pair of members mounted for relative movement in opening and closing, a typewriting machine frame, a movable support carried by one case member, and operatively associated with said frame to raise or lower it in said case in relation to one case member, and an operative connection between said movable support and the other case member.

15. In a device of the class described, a case comprising a pair of members mounted for relative movement in opening and closing, a typewriter machine frame, movable front and rear supports carried by one case member, and operatively associated with said machine frame to move said frame relative to one of said case members, an operating connection between said movable supports and the other case member.

16. In a device of the class described, a case comprising a pair of members mounted for relative movement in opening and closing, a typewriting machine frame, movable front and rear supports carried by one case member, and operatively engaging said machine frame to move said frame relative to said case member, the degree of movement of said front and rear supports being different, an operating connection between said supports and the other case member.

17. In a device of the class described, the combination of a case comprising two parts connected for opening and closing movements, a compactible typewriting machine frame, and connections between the case and the machine frame for moving the latter to extended and compact positions upon the opening and closing of the case, respectively.

18. In a device of the class described, the combination of a case comprising two parts pivotally connected, a compactible typewriting machine frame inclosed by said case when the latter is closed, and connections between the case and the machine frame for moving the latter to extended operative position when the case is opened.

19. In a device of the class described, the combination of a case comprising cover and base parts pivotally connected, a compactible typewriting machine frame mounted within said base part, and operative connections between the case and the machine frame for moving the latter to and from a compact position when the case is closed, and opened, respectively.

20. In a device of the class described, the combination of a case comprising two parts pivotally connected, a typewriting machine frame composed of a plurality of parts relatively movable to render the machine compactible, and connections between the case and the frame for moving the machine frame relatively to the case and one part of said frame relatively to another when the case is opened or closed.

21. In a device of the class described, the combination of a case comprising two parts pivotally connected, a compactible type-

writing machine frame entirely inclosed thereby when the case is closed, and connections between the case and the frame so that the machine frame is moved to extended operative position when the case is opened.

22. In a device of the class described, the combination of a case comprising a plurality of parts connected for opening and closing movement, a compactible typewriting machine frame inclosed thereby when the case is in closed position, and connections between the case and frame for automatically moving the machine frame to extended position when the case is opened.

23. In a device of the class described, the combination with the platen frame and the key and type frame of a compactible typewriting machine and a case for said machine comprising two parts connected for opening and closing movement, of an operative connection between one of the case parts and one of said frames for effecting a compacting movement of said frames relative to each other.

24. In a typewriting machine, the combination with a case comprising two parts connected for opening and closing movement, and a compactible typewriting machine including a platen frame and a key and type frame, of a support for the platen frame and a support for the key frame, and a connection between the case and said supports for effecting a compacting movement of said frames relative to each other.

25. In a typewriting machine, the combination with a case comprising two parts connected for opening and closing movement, and a compactible typewriting machine including a platen frame and a key frame, of a connection between said frames affording a mutually guided limited relative movement, a support for the frame connection, and a connection between the case and said support for effecting a compacting movement of said frames relative to each other.

In testimony whereof I affix my signature in presence of two witnesses.

WELLINGTON P. KIDDER.

Witnesses:
VICTORIA LOWIEN,
MARION F. WEISS.