March 25, 1947. L. C. MYERS 2,418,043

TYPEWRITING MACHINE FRAME

Filed June 2, 1944 2 Sheets-Sheet 1

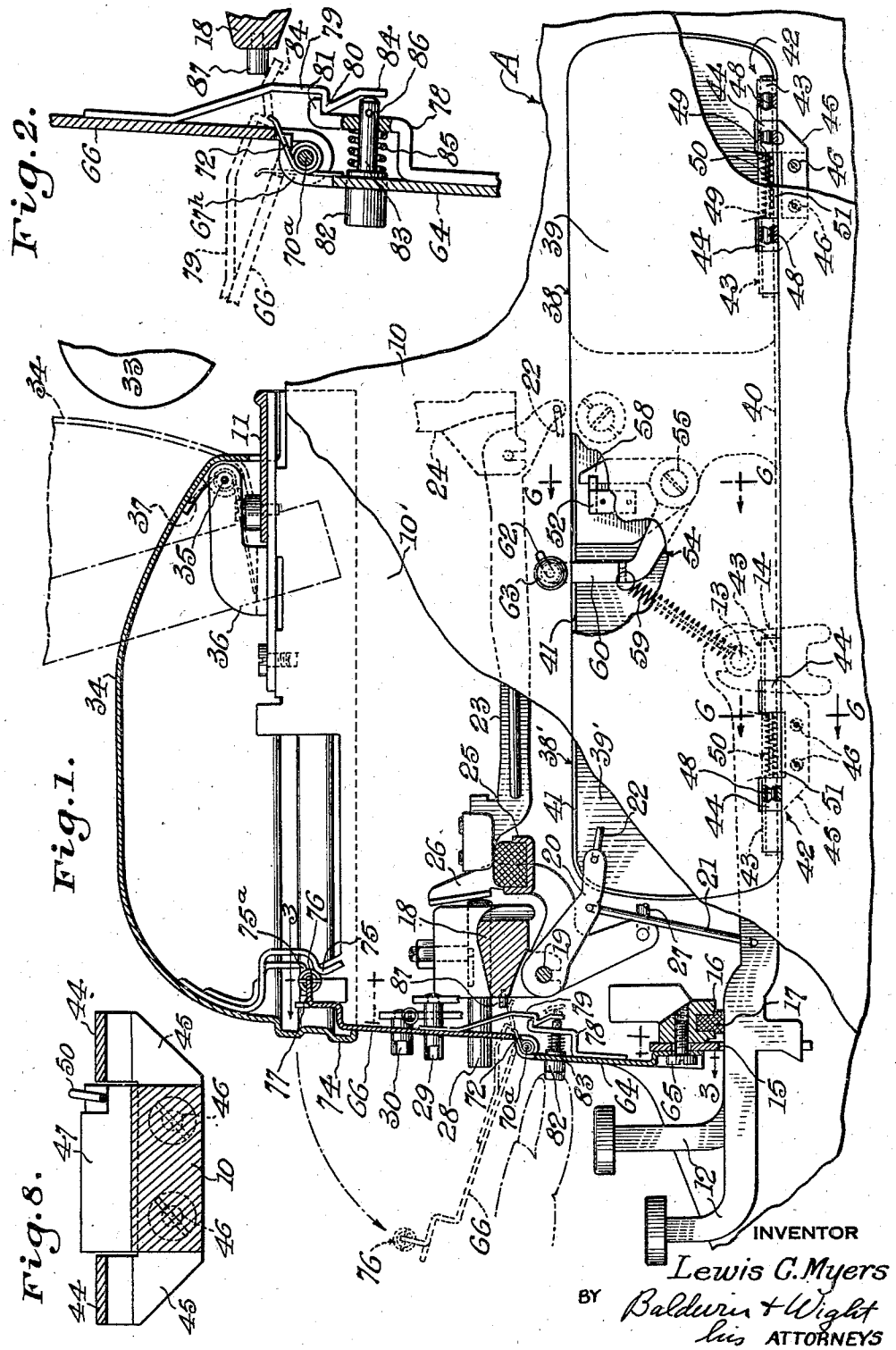

Fig. 2.

Fig. 1.

Fig. 8.

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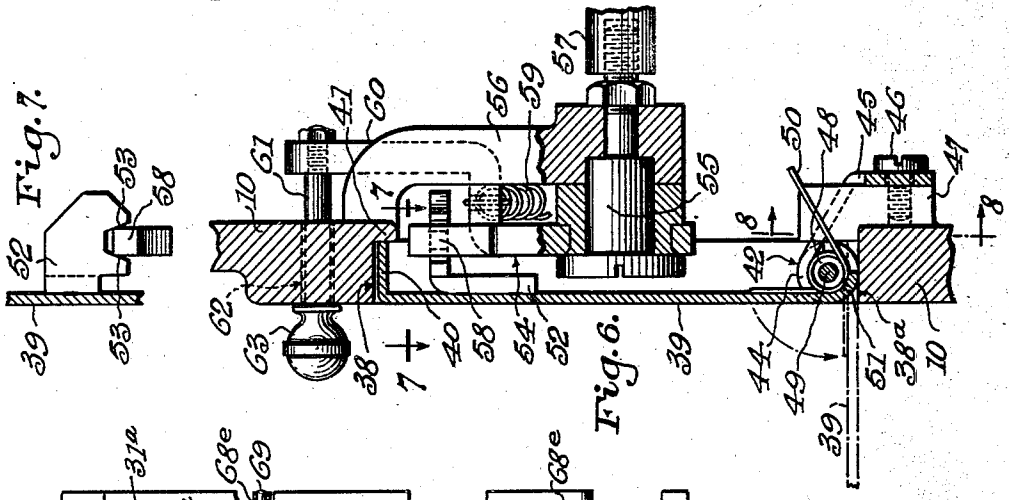

Fig. 7.

Fig. 6.

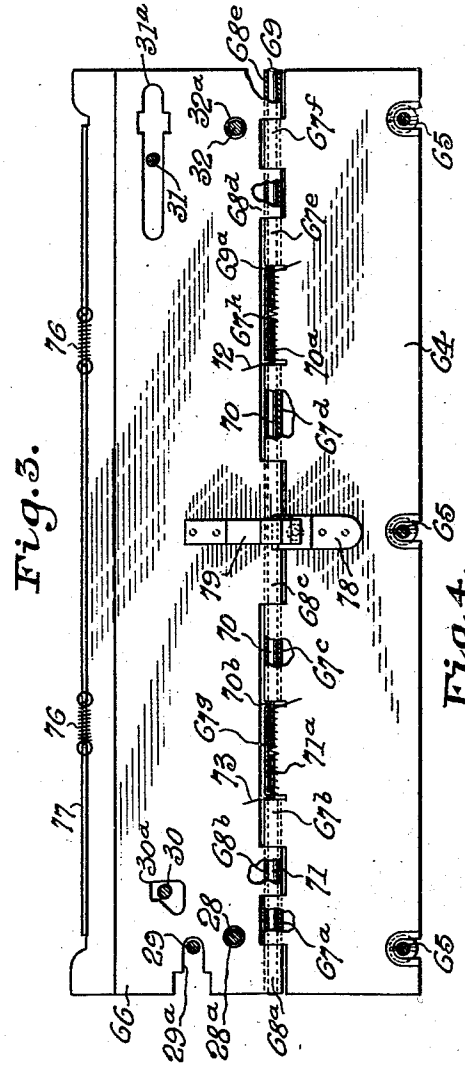

Fig. 3.

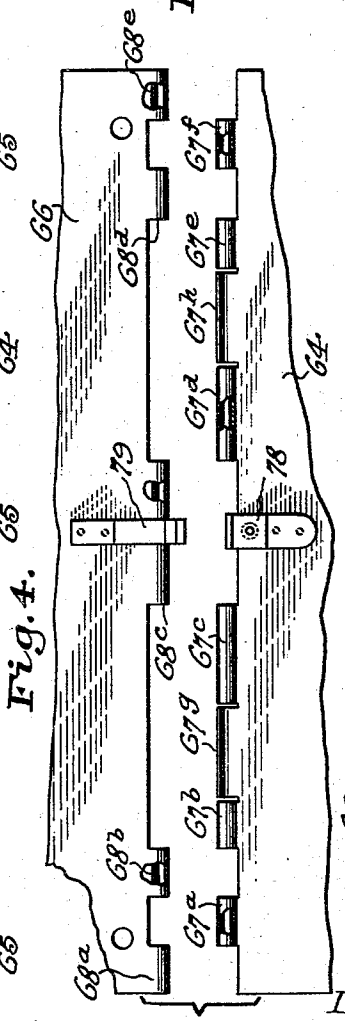

Fig. 4.

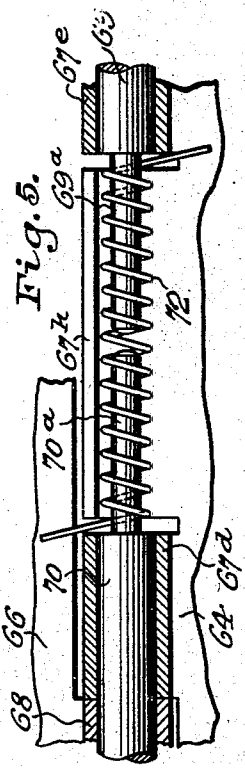

Fig. 5.

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UNITED STATES PATENT OFFICE

2,418,043

TYPEWRITING MACHINE FRAME

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Application June 2, 1944, Serial No. 538,448

5 Claims. (Cl. 197—186)

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This invention relates to typewriting or like machines and more particularly to masks or covers for such machines equipped with closures or panels adapted to be displaced or moved from openings in the mask or frame walls for rendering mechanism mounted within the masks accessible for adjusting, cleaning, or servicing.

In many commercial machines of the class referred to the mask or frame walls are formed with openings which normally are closed by removable panels or inserts held in the openings by friction grip lugs or similar fastening devices. In order to remove the closures or panels it has been necessary to raise the mask hood and insert a screw driver or other tool inside of the mask and to pry the panel or closure loose.

An object of the present invention is to provide a typewriter or like machine in which a frame or mask housing the operating mechanism is formed with an access opening normally covered by a closure or panel which is mounted on the mask or frame so as to be readily movable to open position by the simple operation of disengaging a latch or like fastener.

Another object of the invention is to provide a construction of the character referred to in which the latch or other means for normally holding the panel or closure in closed position is capable of preventing the panel or closure from rattling during operation of the machine.

Another object of the invention is to provide a typewriter or like machine including a mask or frame formed with an access opening normally closed by a panel or closure mounted on the frame or mask by hinges so constructed as to facilitate assembly of the closure or panel on the frame or mask and which, furthermore, are so constructed as to be unobstructive or substantially invisible from the outside of the machine.

Another object of the invention is to provide a machine of the class referred to including a hinged vertical panel or closure and a hinged top hood adapted to interengage with the top of the vertical panel for holding the latter in closed position when the hood is in its lower or normal position.

A further object of the invention is to provide a construction of the kind referred to in which handles connected to parts of the mechanism requiring adjustment or manipulation from time to time during the normal use of the machine project through apertures in a closure or panel which is hinged to the main frame so as to be displaceable to open position to provide access to parts of the mechanism requiring less frequent attention, there being sufficient clearance between the apertures referred to and the handles for enabling the closure or panel to be swung to its open position without contacting the handles.

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Other objects of the invention will become apparent from a reading of the following description of a preferred embodiment, the appended claims, and the accompanying drawings, in which:

Figure 1 is a fragmentary side elevational view of a typewriter embodying the invention with some parts broken away and others shown in vertical section.

Figure 2 is a fragmentary detail vertical section drawn on an enlarged scale and showing a latch device for releasably holding a hinged front wall panel or closure in its normal closed upright position and indicating the open position of the panel in dotted lines to show the cooperation of a spring latch finger with a stop carried by the main frame.

Figure 3 is a rear elevational view drawn on a reduced scale as compared to Figure 1 and showing the hinged mounting of the movable front panel or closure on a lower fixed front wall frame portion. The parts are shown as viewed in elevation when looking in the direction of the arrows 3—3 in Figure 1.

Figure 4 is a view similar to Figure 3 but showing the lower front wall portion and the upper front panel or closure in separated relation in order more clearly to illustrate hinge parts formed respectively on the two front wall parts.

Figure 5 is an enlarged fragmentary vertical section taken axially through a part of the hinge connection between the lower front wall portion and the movable upper front panel or closure.

Figure 6 is a section on the irregular line 6—6 of Figure 1 and drawn on an enlarged scale;

Figure 7 is a fragmentary horizontal section on the line 7—7 of Figure 6; and

Figure 8 is a fragmentary vertical section on the line 8—8 of Figure 6.

The invention is illustrated as being embodied in a typewriting machine which, except for the displaceable panels or covers and associated parts, has the same general construction as the well known Royal standard typewriter. Among the well known parts illustrated is a main frame A having right and left side wall members 10 and 10' respectively and a top shelf 11. Key levers 12 fulcrumed as at 13 on a cross bar 14 project forwardly through a comb guide 15 secured to a lower front cross bar 16 equipped with a key lever cushion stop 17. The usual upper

front cross bar 18 mounts a pivot rod 19 on which is mounted a plurality of type action front levers one of which is shown at 20. A link 21 is connected in the usual manner between the illustrated front lever 20 and one of the key levers 12, and a link 22 is connected between the front lever 20 and a type bar 23 pivoted on a type bar segment 24. Other key levers 12 are connected through other and similar type actions to other type bars mounted on the segment 24. The usual type bar head rest is shown at 25.

The upper front cross bar 18 also provides a pivotal mounting at 19 for a lever 26 connected in the usual manner through a link 27 to tabular stop clear mechanism (not shown). The lever 26 is adapted to be operated from time to time during normal use of the machine by means of a finger piece or push key 28 which projects forwardly beyond the front of the machine frame. Also extending forwardly beyond the front of the frame for operation from time to time during normal use of the machine are finger pieces including a ribbon reverse handle 29, ribbon reverse knob 30, bichrome stencil stop handle 31, and tabular stop set key stem 32.

Other conventional parts shown include a platen 33 and a top cover or hood member 34 which is hinged or pivoted at 35 on brackets 36 carried by the frame top shelf 11. The hood 34 is urged to its raised or dotted line position shown in Figure 1 by coiled springs, one of which is shown at 37.

As previously stated, an object of the invention is to provide a construction enabling panels or closures to be displaceable easily from their normal or closed positions in order to provide access to parts of the mechanism housed within the main frame or mask. In accordance with the invention panels normally closing openings in the frame or mask walls are adapted to be released and thereby opened by the simple expedient of pressing a button or otherwise releasing a catch or fastening device.

It frequently is desirable to obtain access to the mechanism adjacent the frame side walls. Accordingly the side walls 10 and 10' are formed respectively with access openings 38—38' adapted normally to be covered by closure members or panels 39 and 39' respectively. The right hand closure (the closure at the front as viewed in Figure 1) is adapted when in closed position to lie within the opening 38 and is formed with a flange 40 which stiffens the closure and which may also engage a lip 41 formed on the frame or mask wall 10 for limiting inward or closing movement of the panel 39.

Hinge means generally designated 42 are provided adjacent opposite ends of the closure 39 for mounting it to swing about an axis adjacent the bottom of the opening 38. The hinge means 42 may be of identical construction so that only one need be described. Each hinge means 42 comprises a pair of spaced axially aligned sleeves 43—43 formed integrally with the bottom edge portion of the panel 39. Disposed between the pair of sleeve 43—43 is a second pair of sleeves 44—44 formed on a bracket 45 which is secured by screws 46 to a lug 47 on the frame wall 10. Hinge pins 48 extend respectively through adjacent sleeves 43 and 44 and are formed with reduced diameter stems 49 projecting toward each other in the space between the two hinge sleeves 44—44. A coiled spring 50 surrounding the stems 49 is preloaded so that its opposite end portions press against the lug 47 and the closure 39 respectively for urging the closure to swing outwardly to the open position indicated in dotted lines in Figure 6. Outward swinging of the closure to this position is limited by engagement of the outside bottom surface of the closure with the edge portion 38a of the bottom wall of the opening 38.

In accordance with the invention the hinge means 42 mounting the panel 39 within the opening 38 and the springs 50 for urging the panel to open position are substantially hidden so as not to produce an unsightly outside appearance of the mask. The hinge means 42 are so constructed as inherently to provide this advantage. In order to hide the springs 50 from view the panel 39 is formed with two shroud portions 51 curved concentrically with the sleeves 43 and 44 so as to shield the springs 50 from view and so as to merge with the flange 40 to form a continuous arcuate edge along the bottom of the panel 39.

Another feature of the invention consists in the provision of novel and improved means for latching the panel 39 in its closed position in a manner to prevent rattling. In the form shown a keeper member 52 is connected as by spot welding to the inside of the panel 39 and has a locking or latching part formed with a notch having inclined walls 53—53 which converge toward each other at the root or bottom of the notch. A latch lever member 54 is pivoted on a bearing 55 carried by a frame bracket 56 which mounts a tie rod shown in part at 57 in Figure 6. The lever 54 is formed with a locking or latching part 58 adapted to be moved into the notch so as to engage simultaneously both inclined walls 53—53. The latching part 58 normally is held yieldably in the notch under the urge of a spring 59 interposed between and connected respectively to the key lever fulcrum 13 and an operating arm 60 forming part of the latch lever 54. A handle 61 connected to the arm 60 extends through an aperture 62 in the side wall 10, the outwardly projecting end of the handle 61 being equipped with a finger knob piece 63.

Normally the closure or panel 39 is positioned within the opening 38 as shown in Figure 6. The spring 59 urges the latch lever 54 so as to cause the lever latching part 58 to press simultaneously in substantially opposite directions on the notch walls 53 which at this time straddle the latch part 58. In this way the latch part 58 holds the keeper 52 and the panel 39 firmly against rocking in either direction so as effectively to prevent even slight movement of the panel 39 which would cause rattling when the machine is operated. Figure 6 shows the panel flange 40 in engagement with the frame lip 41, but it will be understood that, making allowances for manufacturing tolerances, there may be a very small clearance between the flange 40 and the lip 41 which would permit movement of the panel 39 and rattling if the latch parts 58—52 were not so interengaged as to hold the panel 39 against swinging in either direction.

In order to provide access through the frame side wall opening 38 it is necessary only to press on the finger knob 63 to rock the lever 54 and disengage the latching part 58 from the keeper 52. This releases the panel 39 and enables the springs 50 to swing the panel outwardly to the open position shown in dotted lines at 39 in Figure 6.

The left closure or panel 39' may be formed and equipped with a latch similarly to the closure 39.

Constructions embodying the invention may also include a cover or panel disposed at the front of the machine frame and mounted so as to be displaceable for providing access for easily changing the ribbon spools or cleaning or servicing the parts more easily than can be done by merely lifting the hood 34 in accordance with the practice heretofore usually followed. In the illustrative embodiment the frame or mask includes a relatively fixed lower front wall member or portion 64 secured to the lower front cross bar 16 by screws 65 which also serve to mount the comb guide 15 on the cross bar 16. An upper front wall panel member or closure 66 is hinged along its bottom edge to the top edge of the lower front wall member 64 and is adapted to be swung from the closed position shown in Figure 1 to the dotted line or open position for providing access to mechanism inside of the mask.

The hinge means for mounting the panel or closure 66 on the wall portion 64 is similar to the hinge means 42 referred to in the description of the mounting of the panel 39 on the frame wall 10. The lower front wall portion 64 is formed with hinge sleeves 67^a, 67^b, 67^c, 67^d, 67^e, 67^f, and the upper panel 66 is formed with sleeves 68^a, 68^b, 68^c, 68^d, 68^e. The hinge sleeves on the wall portion 64 and the panel 66 are positioned so as to be interfitted as shown clearly in Figures 3 and 4. A hinge pin 69 extends through the sleeves 68^c, 67^f, 68^d, and 67^e and is formed with a reduced diameter stem 69^a. A hinge pin 70 extends through the sleeves 67^d, 68^c, and 67^c and is formed at its opposite ends with reduced diameter stems 70^a and 70^b. A hinge pin 71 extends through the sleeves 68^a, 67^a, 68^b, and 67^b and is formed with a reduced diameter stem 71^a.

The panel 66 is urged outwardly to its open position by coil springs 72 and 73. The spring 72 surrounds the stems 69^a and 70^a while the spring 73 surrounds the stems 70^b and 71^a. The springs 72 and 73 are preloaded so that their opposite ends press respectively on the lower frame wall portion 64 and the panel 66 to urge the latter toward its open position.

In order to render the springs 72 and 73 invisible from the front of the machine the lower front wall portion 64 is formed integrally with shrouds 67^g and 67^h which are curved concentrically with the associated hinge sleeves and are positioned to cover the springs 72 and 73.

The hood 34 is so constructed that when it is in closed position it interengages with the upper portion of the panel 66 for holding the latter in its closed or substantially upright position. To this end the hood 34 is formed with a depending skirt 74 adapted to overlap or extend in front of the upper portion of the panel 66. When the hood 34 and panel 66 are thus relatively positioned both are held releasably against movement by engagement of hood mounted locking or catch parts 75 with catch or locking parts comprising resilient spring members 76 mounted on a rearwardly offset ledge 77 at the top of the panel 66. When the parts 34 and 66 are in the closed positions shown in full lines in Figure 1 the hood locking or catch parts 74—75 straddle the upper locking or catch part of the panel 66 so as in effect to hold the panel in a cushioned grip and prevent rattling. One or more stop lugs 75^a secured to the hood 34 are adapted to engage the ledge 77 for limiting the downward swinging of the hood 34.

It will be apparent that in order to lift the hood 34 it is necessary merely to press upwardly on the front of the hood sufficiently to overcome the holding action of the resilient spring latch parts 76. At times, for example when it is desired merely to clean the type heads, it is sufficient to lift the hood 34 without permitting the panel 66 to move or to be moved to open position. Accordingly, means are provided which act independently of the hood 34 for latching the panel 66 in its closed position. In the form shown a keeper 78 is secured as by spot welding to the inner surface of the lower front wall portion 64 and is cooperable with a spring latch finger 79 secured to the inside of the panel 66. The latch finger 79 is formed with a nose part 80 adapted to engage under a latch part 81 on the keeper. Operating means for releasing the latch finger 79 from the keeper 78 includes a push button 82 mounted to project through the lower front wall portion 64. The push button 82 is equipped with a stem 83 engaging a heel 84 at the lower end of the finger 79. A spring 85 surrounding the stem 83 urges the push button 82 forwardly to its normal or inactive position, action of the spring 85 being limited by engagement of a stop pin 86 with the keeper 78. It will be apparent that when the push button 82 is moved rearwardly the finger 79 will be flexed to disengage the nose 80 from the keeper latch part 81, whereupon the springs 72 and 73 will swing the panel 66 to open position providing, of course, that the hood 34 previously has been raised.

In order to prevent damage to the hinge connecting the front wall parts 64 and 66 and in order to provide for bringing the panel 66 quietly to rest in its open position, a stop 87 is mounted on the frame cross bar 18 so as to be engageable with the heel 84 of the spring latch finger 79 when the panel 66 moves to open position. Inasmuch as the finger 79 is resilient it will yield so as to bring the panel 66 to rest quietly and without any harmful shock or undesirable noise.

The front panel 66 is formed with apertures 28^a, 29^a, 30^a, 31^a, 32^a for accommodating respectively the parts 28, 29, 30, 31 and 32 previously referred to. These parts extend forwardly of the panel 66 when the latter is in its closed position so as to be accessible for manipulation from time to time during normal use of the machine without its being necessary to move the panel 66 to open position. The apertures are large enough to provide sufficient clearance between the aperture walls and the adjustable parts projecting therethrough for enabling the panel 66 to move about its hinge without touching the adjustable parts.

The construction shown herein embodies the invention in the form now preferred but it will be understood that some changes may be made without departing from the invention as defined in the claims.

I claim:

1. In a typewriter or like machine, a frame; mechanism mounted on said frame; a wall panel; hinge means mounting said panel on said frame to swing to normal position for at least partially enclosing said mechanism and to swing outwardly to open position for rendering said mechanism accessible; a latch part on said frame; a spring latch finger on the inside face of said panel engageable with said latch part for holding said panel in normal position; means for disengaging said latch finger from said latch part to permit said panel to swing outwardly; and a stop on said frame engageable by said spring latch finger for

bringing said panel gently to rest when it has swung outwardly to a predetermined position.

2. In a typewriter or like machine, a frame; mechanism mounted on said frame; a wall panel; hinge means mounting said panel on said frame to swing to normal position for at least partially enclosing said mechanism and to swing outwardly to open position for rendering said mechanism accessible; spring means urging said panel to swing outwardly to open position; a latch part on said frame; a spring latch finger on the inside face of said panel engageable with said latch part for holding said panel in normal position; means for disengaging said latch finger from said latch part to permit said panel to swing outwardly; and a stop on said frame engageable by said spring latch finger for bringing said panel gently to rest when it has swung outwardly to a predetermined position.

3. In a typewriter or like machine, a frame; mechanism mounted on said frame; a wall panel; hinge means mounting said panel on said frame to swing to normal position for at least partially enclosing said mechanism and to swing outwardly to open position for rendering said mechanism accessible; a keeper on the inside of said frame; a spring latch finger on the inside face of said panel and being engageable with said keeper for holding said panel in normal position; operating means connected to said finger and including a part extending through said frame to be accessible from outside the frame and panel for disengaging said spring latch finger from said keeper to permit said panel to swing outwardly; and a stop on said frame engageable by said spring latch finger for bringing said panel to rest gently when it has swung outwardly to a predetermined open position.

4. In a typewriter or like machine, a frame; a top hood; means at the rear of said hood for pivoting said hood on said frame; a front wall panel; hinge means at the lower edge of said panel mounting said panel on said frame to swing about a horizontal axis to a normal substantially upright position and to an outer open position; a skirt on said hood adapted to overlap the upper outside surface portion of said panel when the panel is in its normal position and said hood is closed; a spring carried by said panel upper portion and being exposed rearwardly of said panel; and a catch on the inside of the front portion of said hood and extending forwardly for engagement with said spring when said skirt overlaps said upper panel portion, whereby said panel upper portion with the spring carried thereby are resiliently gripped between said skirt and said catch.

5. In a typewriter or like machine, a frame; a top hood; means at the rear of said hood for pivoting said hood on said frame; a front wall panel; hinge means at the lower edge of said panel mounting said panel on said frame to swing about a horizontal axis to a normal substantially upright position and to an outer open position; a skirt on said hood adapted to overlap the upper outside surface portion of said panel when the panel is in its normal position and said hood is closed; a first catch part on said panel upper portion and being exposed rearwardly of said panel; and a second catch part on the inside of the front portion of said hood and extending forwardly for catching engagement with said first catch part when said skirt overlaps said upper panel portion, one of said catch parts comprising a spring whereby engagement of said catch parts with each other will effect resilient gripping of said upper panel portion between said skirt and said second catch part.

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