H. BATES & A. G. F. KUROWSKI

STAND FOR TYPE WRITING MACHINES.

APPLICATION FILED MAY 26, 1910.

1,139,833.

Patented May 18, 1915.

3 SHEETS—SHEET 1.

Fig. 1.

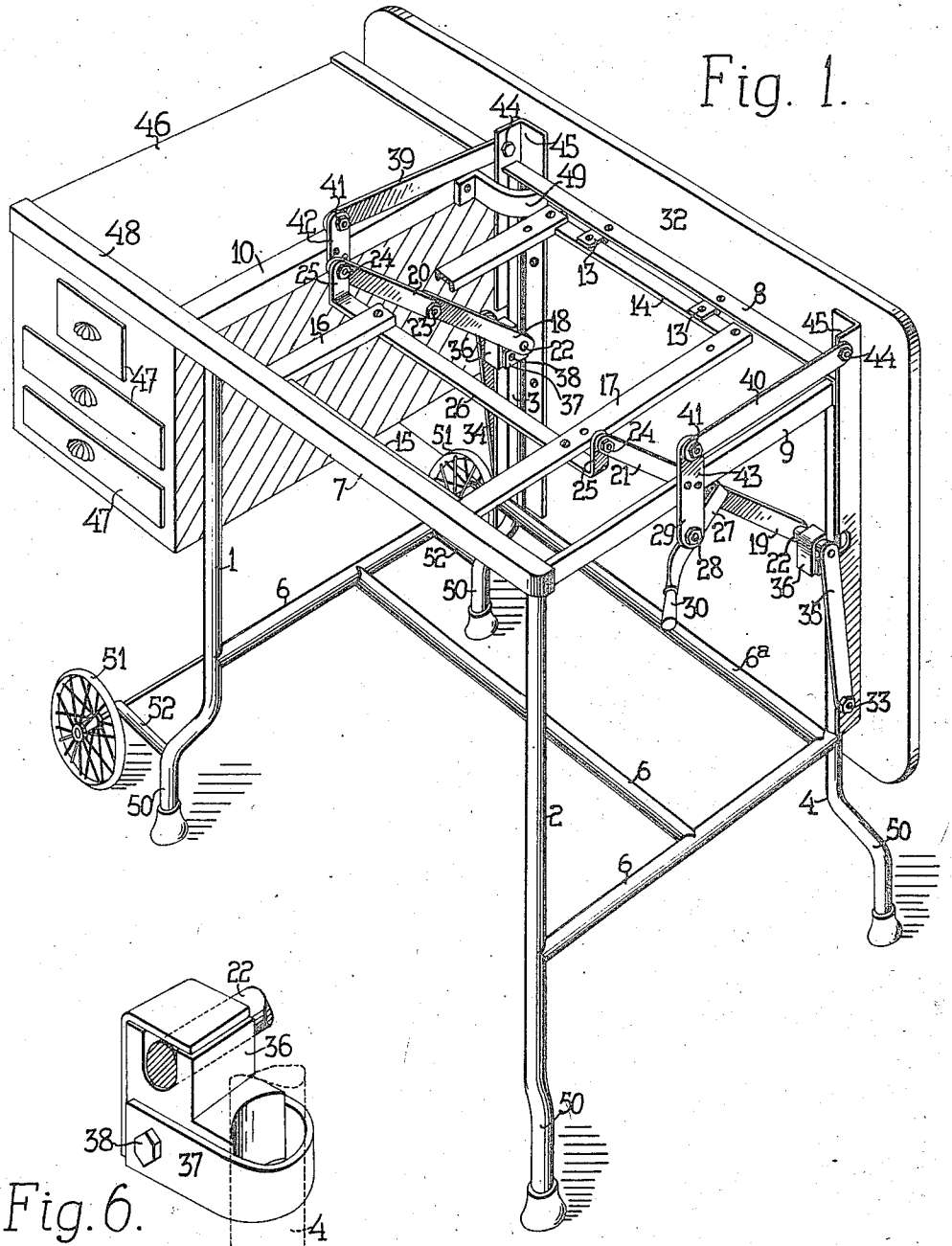


Fig. 6.

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3 SHEETS—SHEET 2.

Fig. 2.

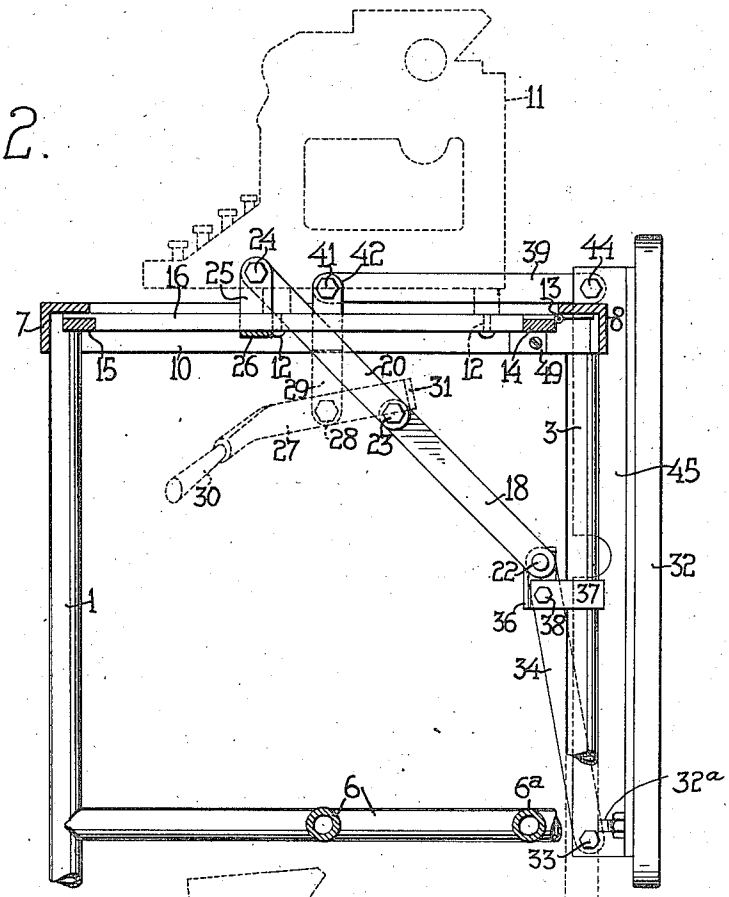
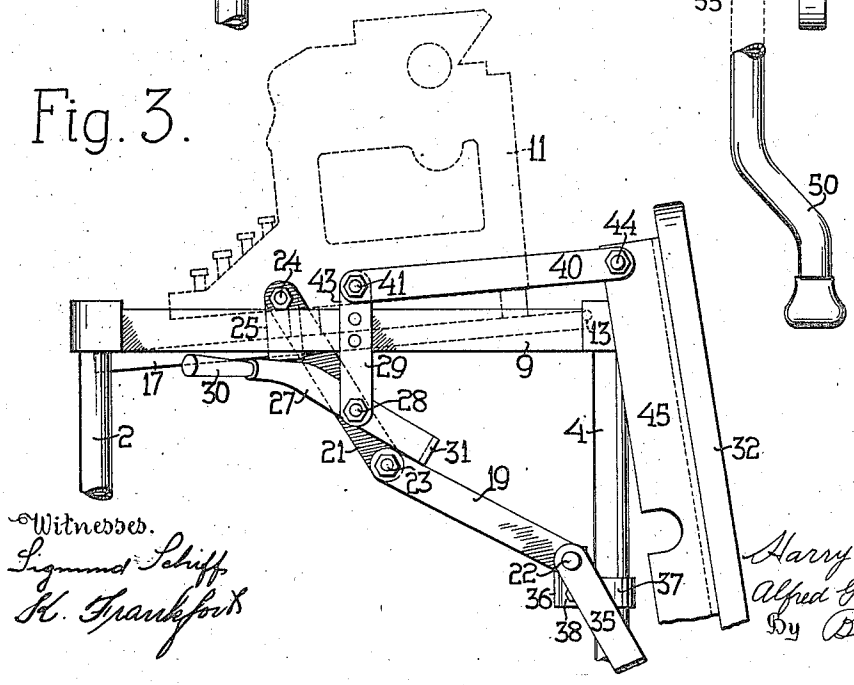


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

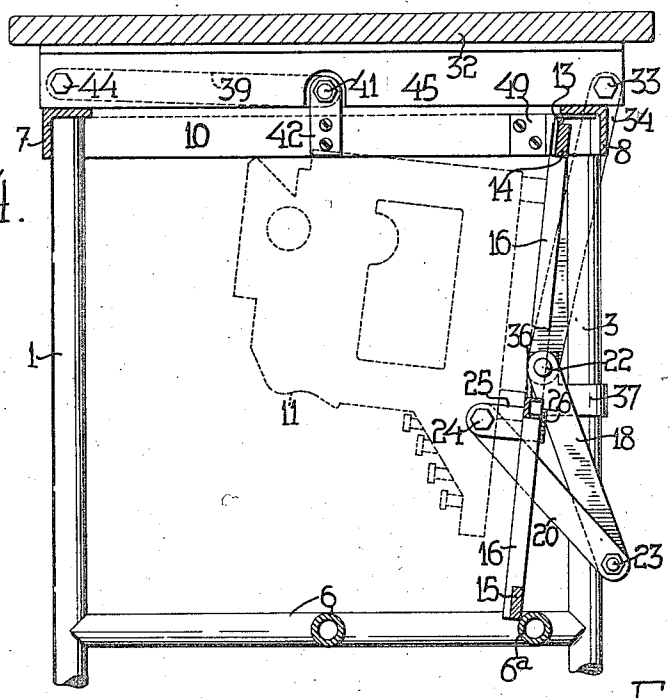
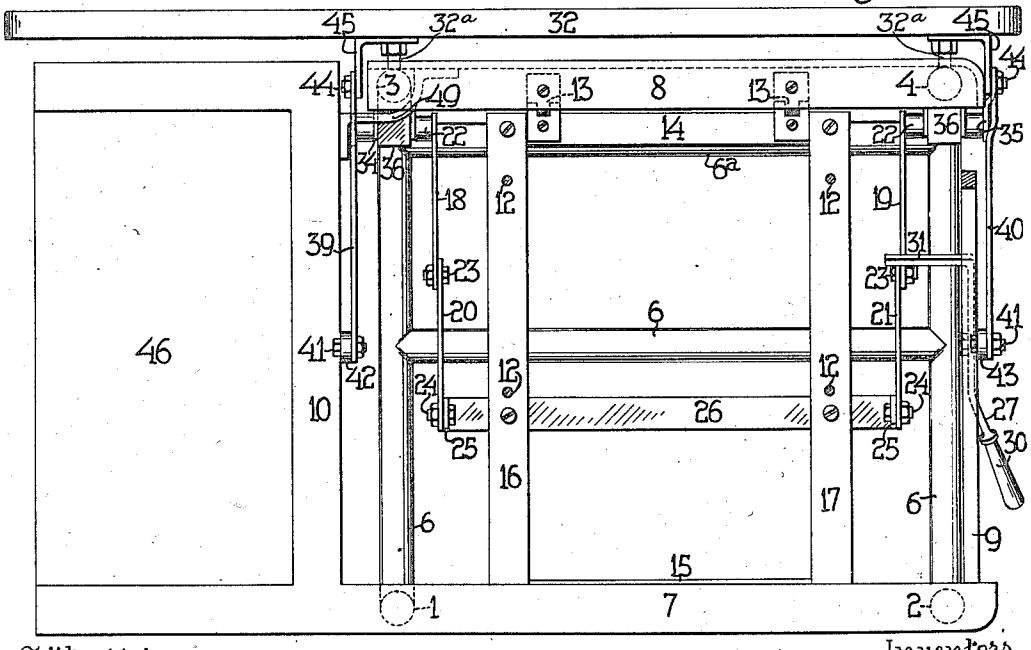


Fig. 5.



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UNITED STATES PATENT OFFICE.

HARRY BATES, OF EAST ORANGE, NEW JERSEY, AND ALFRED G. F. KUROWSKI, OF NEW YORK, N. Y., ASSIGNORS TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

STAND FOR TYPE-WRITING MACHINES.

1,139,833. Specification of Letters Patent. Patented May 18, 1915.

Application filed May 26, 1910. Serial No. 563,501.

To all whom it may concern:

Be it known that we, HARRY BATES, residing in East Orange, county of Essex, and State of New Jersey, and ALFRED G. F. KUROWSKI, residing in the borough of Brooklyn, county of Kings, city and State of New York, both citizens of the United States, have invented certain new and useful Improvements in Stands for Type-Writing Machines, of which the following is a specification.

This invention relates to stands or tables to which are secured typewriting machines or other key-board machines, and particularly to that class in which the machine may be dropped out of the way below the top of the table when required.

The principal object of this invention is to produce, at low cost, a simple and efficient device for this purpose, especially with a view to its use upon portable stands, in which compactness is a desideratum. We have provided improved means for connecting a typewriting machine to the frame of a stand in a manner to permit the ready lowering and raising of the machine; and we have also provided a leaf which hangs behind the rear of the stand out of the way, but which is mechanically swung or floated upwardly and forwardly when the machine is dropped, to become the top of the stand, thus greatly enhancing the usefulness thereof without rendering it more bulky. Upon one side of the stand may be secured a chest of drawers, and this chest may serve as a support or table for papers, etc., when the typewriting machine is in use, and said leaf is swung down; the chest being covered by the leaf when the latter is swung up. The chest of drawers may, of course, be duplicated at the opposite side of the table. The typewriting machine and said leaf or top are connected by means of a linkage, one of the features of which is a toggle joint which supports and locks the typewriting machine in its position of use.

Other objects and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a perspective front view of a stand provided with the present improvements, the typewriting machine being omitted, and the leaf being shown as dropped behind the stand. Fig. 2 is a part-sectional side elevation, showing the parts in the Fig. 1 position, the typewriting machine being shown in dotted outline. Fig. 3 is a side view, illustrating the manner of breaking the toggle which locks the typewriting machine in elevated position. Fig. 4 is a sectional side elevation, illustrating the machine (in dotted lines) dropped to a position of disuse, and the stand covered by the leaf or top. Fig. 5 is a plan of the stand with the parts in the same positions as in Fig. 1. Fig. 6 is a perspective view of one of the bearings secured to the leg of the stand.

The stand for the typewriting machine may comprise two front and two rear corner posts or legs marked respectively 1, 2, 3, 4, braced at their lower portions by a framework or set of rungs 6; and joined at their tops by a framework comprising a front bar or rung 7, a rear bar 8, a right-hand side-bar 9 and a left-hand side-bar 10; all of these parts being preferably of metal, to give the desired rigidity and compactness.

The typewriting or other key-board machine 11, which is shown at Fig. 2 in its elevated working position, and at Fig. 4 as dropped to a position of disuse, is secured by screws 12 to a swinging or drop frame or support, said frame being connected by a pair of hinges 13 to the rear bar 8 of the stand, and comprising a rear bar 14 (to which said hinges are secured), a front bar 15 and side bars 16, 17, rigidly conjoined. Said frame with the typewriting machine, may swing about the hinges 13 from its level position (Fig. 2) down and back to its hanging position (Fig. 4); and a rung 6^a may prevent the drop frame and the machine from swinging beyond this point, as seen at Fig. 4. The swinging frame may be brought up against the under side of the front bar 7 of the stand, which bar may be made up of angle iron with the horizontal flange directed rearwardly and the vertical flange directed downwardly, said horizontal flange overlying the front bar 15 of the swinging frame (Fig. 2).

The means for supporting the swinging frame and the typewriting machine in elevated position comprises a pair of levers 18, 19, and a pair of links 20, 21; 18 and 20 taken together forming one toggle, and 19 and 21, a corresponding toggle; said toggles being located at opposite sides of the stand.

At their lower ends, the levers 18, 19 are fixed upon a pair of horizontal shafts or pintles 22, from which they extend upwardly and forwardly, being pivoted at their upper ends at 23 to the lower ends of said links 20, 21; the latter extending upwardly and forwardly in line with said levers at Fig. 2 and pivoted at their upper ends at 24 to ears 25, bent up from the ends of a transverse rung or strip 26, which rigidly connects the side rungs 16, 17, of the drop frame intermediate their ends, (Fig. 5). The three pivots 22, 23, 24, lie in line when the drop frame has been raised, and hence each of the two toggles forms a lock to guard against the accidental releasing and dropping of the hinged frame 14, 15, 16, 17 with the typewriting machine thereon.

For convenience in dropping the typewriting machine, we provide a lever 27 pivoted at 28 to a hanger 29 fixed to the stand, said lever having, at its forward end, a handle 30, and at its rear end, a finger 31, to bear down upon the lever 19 when the handle 30 is lifted, so as to break the toggle 19, 21 and thereby release the hinged frame, and cause it to drop with the machine.

The leaf 32 (preferably wooden), which hangs behind the stand when the typewriting machine is elevated as at Fig. 2, is movable upwardly and forwardly (as the typewriting machine drops), to form a complete top for the stand, as at Figs. 1 and 4, so that the latter may be also useful when the typewriting machine is not in demand. Said leaf 32 is connected to the linkage already described, so as to shift simultaneously with the typewriting machine. It is pivoted at its lower edge (or at its rear edge, Fig. 4) at 33, to the lower ends of a pair of arms 34, 35, fixed at their upper ends (Figs. 1 and 2) to the shafts or pintles 22, to be rigid with the levers 18, 19, respectively, so as to swing up when said levers swing down. Said shafts or pintles 22 may be mounted on brackets 36, having collar portions 37, which are clamped upon the rear legs 3 and 4 by means of bolts 38; this arrangement permitting vertical adjustment of the shafts 22 to bring the members of the linkage to the desired positions relative to the fixed parts of the stand.

Near its upper or forward edge, the leaf 32 is pivoted to a pair of links 39, 40, the latter being pivoted at 41 to ears 42, 43, fixed about midway of the side bars 10, 9, of the stand; the ear 43 preferably forming an upward extension of the hanger 29. The rear ends of the links 39, 40, are pivoted at 44 (Figs. 1 and 2) to flanges 45, each forming a part of a length of angle-iron or stiffening rib, secured to the under side of said leaf 32; the same flanges carrying the pivots 33.

The operation is as follows: When it is desired to use the typewriting machine, the operator simply lifts the top or leaf 32, by means of its front edge, and swings said leaf upwardly, rearwardly and downwardly; the links 39 and 40 swinging in about a half-circle upwardly, rearwardly and downwardly from their horizontal positions at Fig. 4, to their horizontal positions at Fig. 2, the arms 34, 35, behind, swinging down nearly in a half-circle from their upstanding positions in Fig. 4 to their pendent positions at Fig. 2; the leaf floating easily on these links and arms back to its hanging position (Fig. 2). At the same time, the arms or levers 18, 19, by reason of their rigid connection to said arms 34, 35, are forced to swing upwardly, and by means of the links 20, 21, cause the hinged drop frame, carrying the typewriting machine, to swing upwardly to the position in Fig. 2; the toggles 18, 20 and 19, 21, locking the hinged frame with the typewriting machine in horizontal position. The lower end of the top 32 (Figs. 2 and 5) is provided with one or more rests 32^a, which contact with the rear legs 3, 4, to prevent the hanging end of the top from swinging forwardly after the toggles have been brought to extended position, which movement would carry the pivots 23 rearwardly from the Fig. 2 position.

When it is desired to drop the typewriting machine, the handle 30 is lifted, and lever 27 pressed down on the arm 18, thus breaking the toggle, and at the same time swinging backwardly the lower edge of the leaf 32, by reason of the hinged connection of the arm 35 with the arm 19. By reason of the rigidity of the leaf itself, which is hinged at well-separated points 44 to the links 39, 40, (the latter being now immovable in horizontal direction), the entire bottom edge of the leaf is forced rearwardly, thus swinging the arm 18, and hence breaking the toggle 18, 20. The hinged frame of the typewriting machine will then drop, and as the leaf 32 rises it may be grasped and pulled forward to the position at Fig. 4.

The links 39 and 40 and the arms 35, are substantially of equal length. Both are pivoted at fixed points, one of these points being near the middle of the top from front to rear, and the other being near the middle of the rear from top to bottom. The floating table is therefore controlled by the arms and links, each of which swing through an arc of about 180°. The arms 19 of the bell crank levers are about equal to the links 21 which connect them to the frame. These unfold, when the frame is down, as shown in Fig. 4, so as to bring the points or pivots 22 and 24 very close together. The movement of the joint 23 is always in invariable relation to the movement of the joint 33. It is therefore impossible to disturb the hypotenusal position of the parts 18 and 20, as

shown in Fig. 2, without at once disturbing the position of the frame and the table. The start of this is easy and the disturbance small, particularly since the table and the frame are balanced.

The operation is facilitated by reason of the counter-balancing action of the typewriting machine and the leaf, one rising as the other falls. The leaf is preferably extended at the left (Fig. 1), so as to increase its weight, and also its expanse, thus enhancing its usefulness as a table top; and this extension is made to cover a chest 46, containing drawers 47; said chest fastened at its front to an extension of the front bar 7, and at its side to the side bar 10. The latter is connected at its rear end by a curved fixture 49 to the rear bar 8, so that clearance may be left for the movement of the adjacent leaf rib 45. The corners of the chest 46 may be conveniently fitted within the angles of the bars 7, 10.

It will be noticed that the leaf 32, as in Fig. 2, may hang within the rear line of the base of the stand, so that the provision of the leaf may not increase the bulkiness of the stand. The four corner posts preferably terminate in foot-portions 50, which jut diagonally out of the posts, to increase the base area, and hence the stability of the stand. The chest of drawers 46 may overhang a pair of wheels or truck 51, mounted upon bars 52 extending to the left (in Fig. 1) from the posts 1, 3. Thus, the chest of drawers, the top 32, and the typewriting machine, may all be confined substantially within the base area of the stand, and the latter may still be very small; thus permitting the stand, machine, and all, to be stowed conveniently in a corner or a narrow space when not in use, or permitting a number of stands with their machines to be packed together in a little space, which is a convenience in hotels and other institutions.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described our invention, we claim:

1. A table frame, a floating table cover, a machine support pivoted to the rear of the table frame tiltable rearwardly and downwardly in the same plane as that in which the cover floats, and a link connection between the cover and support whereby the said cover and support may balance each other there being a bell crank lever in said link connection pivoted to the frame so as to control the functioning of the links, the cover and support being substantially counterbalanced and so arranged that when one is in horizontal the other is in substantially vertical position.

2. A stand or table for typewriting and keyboard machines comprising a frame, a swinging machine support hinged at its rear to the rear portion of said frame, a top or cover adapted to float from rear to front, toggles arranged in the rear connecting the swinging support and the frame, and arms pivotally connecting the top to the toggles and to the frame, respectively, to effect the elevation of the support as the top is lowered.

3. A stand or table, a swinging frame hinged at its rear to the rear of said stand to support a machine, and a toggle device extending between the swinging frame and stand and movable to position to lock the swinging frame in raised position, and a top connected to said toggle device and to said stand to float up from the stand and back and down to a pendent position behind the stand.

4. In a stand or table, the combination of a frame, a swinging leaf hinged at its rear to the frame, a locking toggle connecting the swinging leaf with a bearing on the frame and movable to extended position to lock the swinging leaf in raised position, a top, arms pivotally connecting the forward ends of said top with the frame, and other arms connected to swing with the toggles and pivotally secured to the rear of the top to lower the top behind the frame when the leaf is raised.

5. In a stand or table, the combination of a frame, a swinging leaf hinged at its rear to the frame, a locking toggle connecting the swinging leaf with a bearing on the frame and movable to extended position to lock the swinging leaf in raised position, a top, arms pivotally connecting the forward ends of said top with the frame, other arms connected to swing with the toggles and pivotally secured to the rear of the top to lower the top behind the frame when the leaf is raised, and a rest on the leaf to contact with the stand when the pivotal points of the toggle are in line.

6. In a stand or table, the combination with a swinging frame in which is mounted a machine, and a shiftable top, of a toggle device connecting the swinging frame and stand and movable to dead-center position to lock said frame in elevated position, links or arms connecting the top with the stand and with the toggle, respectively, to cause the shifting of the top to elevate the swinging frame from its hanging position, the top being movable on the links to a pendent position behind the stand, and rests on the top to contact with the stand when the toggle is extended.

7. The combination of a stand, a machine-carrying leaf hinged at its rear to the rear portion of said stand to drop downwardly and backwardly from working position to a hanging position, toggles within said stand and connected to said leaf to sustain the

same in working position, said toggles including members hinged on the rear portion of said stand, arms outside of said frame and rigid with said hinged toggle members, a top hinged to said arms, and means cooperating with said arms to float said top back and off from the stand downwardly to a pendent position behind the same when said leaf is raised.

8. The combination with a stand, of a drop frame hinged to said stand at the rear thereof, a floating top for the stand, a bell-crank lever fulcrumed on a side of the stand, one arm of said lever directly pivoted to the top, a link extending from the drop frame to the other arm of the bell-crank lever, said link and other arm forming a toggle support for the frame when the frame is raised, said top and frame moving in the same plane.

9. The combination with a stand, of a drop frame hinged to the rear of said stand, a bell crank lever pivotally mounted upon said stand, a top for said stand, a link about equal in length to one arm of the bell crank lever connecting the stand to the top or the table, said arm of said bell crank lever being pivotally connected to said top, a link pivoted to said frame and connected with the other arm of said bell crank lever and about equal in length thereto, said second arm and link forming a toggle for supporting said frame in its raised position, said top and frame being arranged in counterbalanced relation, said top arranged to float from front to rear and means for breaking said toggle.

10. The combination with a stand, of a drop frame connected to said stand, said drop frame comprising front, rear and side rungs, and a transverse rung having bent up ears, toggle links at the rear pivotally connected to said ears, bell crank levers having arms connected to said links to form rocking toggle joints to secure said drop frame in its raised position, and a forwardly floating top for said stand, said bell crank levers having arms pivotally connected to said top, so that said top and said drop frame will move concomitantly.

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