

May 6, 1924.

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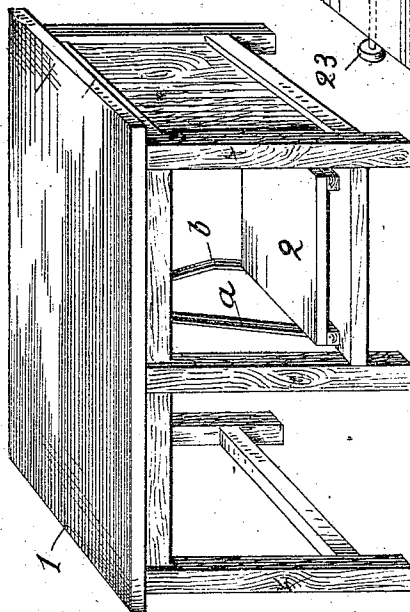
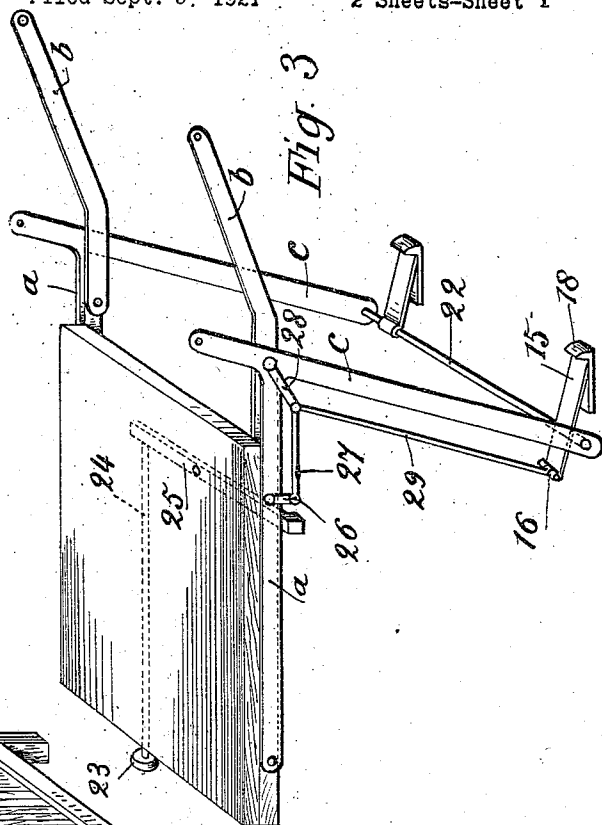
M. GRANDJEAN

FURNITURE FOR TYPEWRITER USE

Filed Sept. 3, 1921

2 Sheets-Sheet 1

Fig. 1



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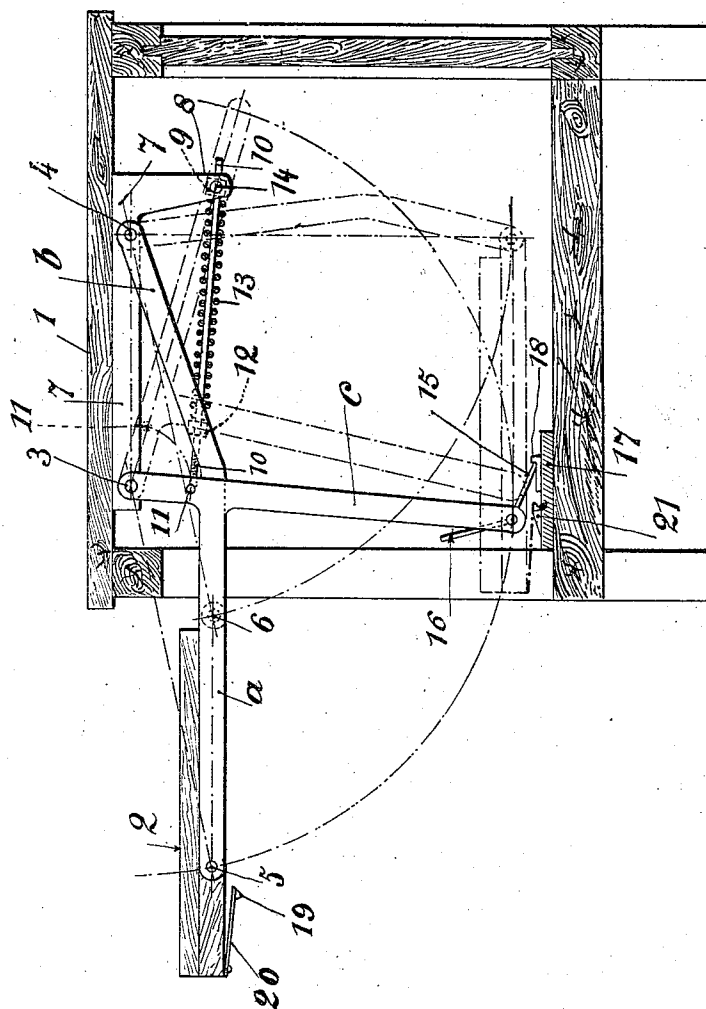


Fig. 2

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UNITED STATES PATENT OFFICE.

MARC GRANDJEAN, OF PARIS, FRANCE.

FURNITURE FOR TYPEWRITER USE.

Application filed September 3, 1921. Serial No. 498,195.

To all whom it may concern:

Be it known that I, MARC GRANDJEAN, a citizen of the Republic of France, and residing at Paris, Seine Department, Bourse du Commerce, Rue du Louvre, in the Republic of France, have invented certain new and useful Improvements in Furniture for Typewriter Use, of which the following is a specification.

My invention relates to improvements in furniture for typewriter use, and more particularly to an arrangement of movable shelf or base supporting the machine whereby the latter may be caused to disappear within the piece of furniture with great facility when not in use. To this end the piece of furniture is provided with a sufficient recess to receive the said base together with the machine mounted thereupon, the base being connected with the upper part of the said recess by swinging arms forming at each side a sort of articulated parallelogram whereby the said base or shelf may be moved while retaining the parallel position. The movements are facilitated by the action of springs or weights acting upon the said base or upon the suspension arm thereof in such manner as to suitably counterbalance the weight of the machine and base. The invention also comprises special locking devices for securing the said base in the extreme positions, and releasing devices operated by hand or by pedal for disengaging the said base.

The piece of furniture is preferably constructed in the form of a table, and the shelf or base is supported in such manner as to take a position either entirely below the table top or entirely in front of the latter and on a somewhat lower level. However, it is obvious that the said piece of furniture may be given any suitable form and that the shelf or base may be drawn out at any side thereof.

The following description together with the accompanying drawings which are given by way of example shows an embodiment of my invention as well as various details of the locking and releasing devices.

Fig. 1 is a perspective view of the whole piece of furniture with the base disposed within the same and in the inoperative position.

Fig. 2 is a vertical section of the piece of furniture and the said base in the operative position, showing the suspension and the

locking devices; the dotted lines indicate the inoperative position.

Fig. 3 is a perspective view of the said base and the suspension devices in the operative position, with a modified form of the releasing device.

1 indicates the table top and 2 the movable shelf or base of the typewriter. At each side are disposed two suspension arms *a*, *b*, which are pivoted to the table at 3, 4. The arms *a* are pivoted to the said base at 5, and at 6 the arms *b* are pivoted to the arms *a* supporting the said base, the points 3, 4, 5, 6 being disposed at the angles of a parallelogram. The said base will therefore remain constantly in the horizontal position irrespectively of the position of the arms *a*, *b*. The arms *a* are bent at an angle so that each is provided with an extension piece *c*. Suitable springs serving to compensate the weight of the said base and of the typewriter supported thereupon are disposed in the following manner. The cleats or supports 7 are secured below the table top and have pivoted thereto the arms of the parallelogram; each of the cleats has mounted thereupon a bearing 8 having journaled therein an annular stop-piece 9. The rod 10 is slidable through the said stop-piece and is pivoted at 11 to the arm *a*. The end of the said rod situated opposite the stop-piece 9 is screwthreaded for a certain length and carries a nut 12. Between the stop-piece 9 and the nut 12 is disposed a spring 13 having sufficient power. When the rod 10 is caused to slide in the stop-piece 9, the spring is compressed by the nut 12 which moves together with the rod 10.

If the said base or shelf is supposed to occupy the lower position, the following will result. The points of articulation 3 upon the table top, 11 upon the arm *a* and 14 upon the bearing 8 will now be situated on the same straight line. The nut 12 which moves together with the rod 10 during the rotation of the arm *a* occupies the maximum position adjacent the stop-piece. In this position, the compression of the spring 13 between the nut and the stop-piece is a maximum, but inasmuch as the points of articulation are situated in a straight line, the moment of rotation exerted upon the said shelf by the spring will be null. As on the other hand the points 5 and 6 of the said base are situated vertically below the

points of suspension 3 and 4, the action of gravity has no tendency to move the said shelf or base, and the latter is thus in a position of equilibrium.

5 As soon as the said base is moved in order to bring the same to the upper position, the weight of the base and the machine on the one hand and the action of the springs 13 on the other hand will give rise to op-
10 posite moments of rotation. As the base continues to be raised, the moment of rotation due to gravity will increase. As the articulation 11 of the arm *a* will deviate from the straight line 3—14, the moment
15 of rotation produced by the action of the springs will also increase with the rise of the said base in spite of the gradual diminution of the tension of the springs. It will suffice to suitably regulate the tension
20 of the springs 13 by means of the nuts 12 in order to obtain the equilibrium substantially in all positions of the base containing the typewriter.

In order to maintain the said base in the
25 upper as well as in the lower position, locking devices have been provided which are disposed partly upon the said base and partly upon the arm *a*. For this purpose, the extension *c* of each arm *a* is provided at the
30 end with the pawl 15 which is pressed upon the arm by a spring or a weight and is provided with a tail piece or pedal 16, Fig. 2; upon a cross-piece 17 disposed between the
35 legs of the table is secured a catch 18 serving as a stop-piece for the pawl 15 in the upper position of the said base. When the latter reaches the required position, the pawl engages automatically behind the
40 catch 18 under the action of the spring or the weight. To release the pawl it will suffice to press with the foot upon the tail piece 16, after which the base and machine may be lowered.

To maintain the base in this lower position, a hook 19 connected with a spring 20
45 is secured below the said base. The cross-piece 17 is provided with a projection 21 behind which is engaged the hook 19 under the action of the spring 20 when the base
50 reaches the lower position. In order to facilitate the release of the device when the said base is in the upper position, the device shown in Fig. 3 may be employed.

The two pawls 15 engaging the catches
55 18 are formed as strips secured to a shaft 22 which connects the extended ends *c* of the bent arms *a*, one of the strips being extended beyond the rod to provide a tail piece 16. The release is effected by hand
60 by means of a drawing button 23 disposed in front of the said base and connected by a rod 24 with a lever 25 pivoted under the base. The free end of the said lever acts

upon the tail piece 16 of one of the pawls 15 through the medium of a lever 26, a rod 65 27, a swinging arm 28 and a second rod 29. Drawing upon the button 23 will raise the pawl 15 and release the catch 18.

It is obvious that the invention will comprise all other constructional forms of the devices used for the engagement and the release of the said base. It should be re-
70 marked that the extensions *c* of the arms *a* constitute stays to uphold the said base in a perfectly rigid manner when the latter
75 is drawn out. This rigidity also results from the fact that the parallelogram 3, 4, 5, 6 is not entirely closed as would occur in case the base *a* were to be raised to the level of the table top *b*.
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Claims:—

1. In a piece of furniture, the combination of a table having a top, a movable shelf supporting a typewriting machine, suspension levers joined at one end to the table
85 top and at the other end to the said shelf, the pivot joints being situated at the vertices of a parallelogram at each side of said shelf, one lever at each side being bent
90 at a right angle, a rod pivoted to said lever near the elbow, a guide disposed upon the frame through which said rod is loosely slidable in a substantially horizontal direction, and a compression spring disposed
95 upon said rod, bearing upon the said guide and serving to practically balance the weight of the loaded shelf in all positions of the same.

2. In a piece of furniture, the combination of a table having a top, a movable
100 shelf supporting a typewriting machine, suspension levers joined at one end to the table top and at the other end to the said shelf, the pivot joints being situated at the vertices of a parallelogram at each side
105 of the said shelf, one lever at each side being bent at a right angle, a rod pivoted to said lever near the elbow, a guide disposed upon the frame through which said rod is loosely slidable in a substantially horizontal
110 direction, a compression spring disposed upon said rod, bearing upon the said guide, the said rod being pivoted to said lever at a point such that the spring shall be compressed to the maximum when the said shelf
115 is brought back to its recess while at the same time the moment of the thrust of the spring with respect to the pivoting axis of the levers shall be annulled.

In testimony, that I claim the foregoing
120 as my invention I have signed my name in presence of a subscribing witness.

MARC GRANDJEAN.

Witness:

MANUEL COMPIN.