

No. 646,470.

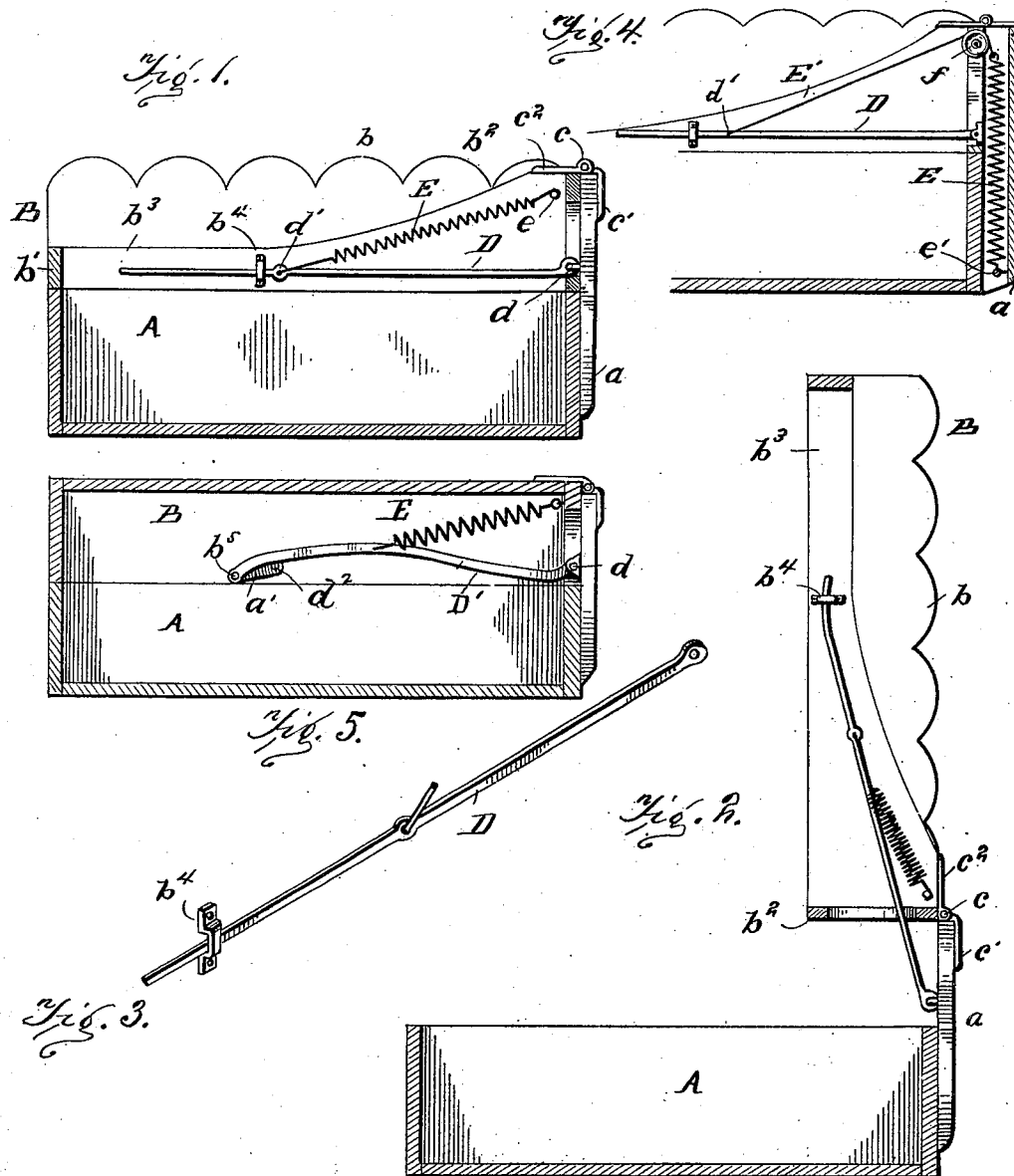
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BOX COUCH.

(Application filed Nov. 8, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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BOX-COUCH.

SPECIFICATION forming part of Letters Patent No. 646,470, dated April 3, 1900.

Application filed November 8, 1899. Serial No. 736,224. (No model.)

To all whom it may concern:

Be it known that we, GEORGE T. SMALLWOOD and ADAM H. SULSER, residents of Washington, District of Columbia, have invented a new and useful Improvement in Box-Couches, which invention is fully set forth in the following specification.

Our invention relates to box-couches, and more especially to that class of box-couches designed to permit the top to be raised for obtaining access to the interior of the couch without withdrawing the couch from the wall near which it may be standing. In couches of this character as heretofore constructed the springs, levers, &c., necessary to enable the cover of the couch to be readily lifted or to retain the same in an open or elevated position have been permitted to extend down into the box portion of the couch, where their operation and movements will be obstructed by clothing or other articles placed within the box. Such construction not only makes it possible for the contents of the box to interfere with the ready operation of the parts, but also exposes such levers and their connected parts to view when the lid or top of the couch is raised.

One of the objects of our invention is to construct a couch of the character indicated in which the levers and other parts designed to assist in opening the couch shall be wholly without the box-like portion of the couch and shall to a large extent be concealed from view when the top is raised.

A further object of our invention is to simplify the construction of the couch, whereby it may be manufactured at a reduced cost, while at the same time greatly increasing the efficiency of the top-operating mechanism.

With these objects in view our invention consists in a box-couch having a cover hinged thereto, the hinge being substantially in the plane of the top of the couch-cover, combined with a power device, such as a spring and connected mechanism, whereby the tension of the spring is employed to assist in raising or opening the couch-cover, said spring and its connected parts being for the most part or wholly above the top line of the box portion of the couch. In couches of this character the distance from the top of the up-

holstering to the top line of the box proper is of some considerable extent, and when the couch is hinged so that the axis of the hinge is at the upper rear edge of the couch-cover the cover proper swings about such axis in the act of opening, so as to lift the back portion of the cover well above the upper edge of the box itself, thereby affording ready access to the rear portion of the box. Various means may be employed for operatively applying the power device, which is preferably a spring, to perform its work.

In the accompanying drawings we have illustrated one form which our inventive idea may assume; but it is to be understood that such drawings are for the purpose of illustration only and not as defining the limits of the invention.

In said drawings, Figure 1 is a vertical sectional view of a box-couch looking toward the end of the couch with the cover down or closed. Fig. 2 is a like view with the cover open. Fig. 3 is a detailed view of a part of the operating device. Fig. 4 is a view of a slightly-modified form, and Fig. 5 is a view of a further modification.

In said drawings, A represents the box proper, and B the cover. Firmly secured to the rear side of the box and preferably one at each end thereof are upright cleats *a*, extending up to substantially the plane of the top of the upholstering *b* of the top B. The top or cover B consists of a framework preferably constructed with a front bar *b'* and a rear bar *b''*, connected at the ends by end pieces *b'''*. The rear bar *b''* may, if desired, be of a width so as to extend from the top of the box A to the top of the upright cleats *a*, as shown in the drawings, or such rear bar *b''* may merely be a narrow strip extending along the back of the frame. The end pieces *b'''* at the rear portion thereof are of such a width that when the cover is closed and the lower edge of the end piece *b'''* is resting upon the upper edge of the box A the upper edge thereof will be in the same plane with the upper end of the cleats *a*. Preferably the end pieces are gradually tapered from the rear to the front edge of the couch, at which part they are substantially of the width of the slat *b'*. The framework of the upholstered top or

cover, constructed as above described, is hinged to the cleats *a* by hinges *c*. Preferably the hinges *c* are common strap-hinges having one strap *c*² extending down the cleats and the other strap of the hinge *c*³ extending along the upper rear edge of the end pieces *b*³ of the cover. If desired, the cleats *a* and the hinges *c* may be formed integrally, in which case the lower strap or member of the hinge would constitute the cleat and would be directly secured to the box A.

D is a lever, preferably of metal, which is secured at its rear end so as to turn in a vertical plane. As shown in Figs. 1 and 2, the lever D is secured by means of an eye-and-staple joint *d* to the front side of the cleat *a*, and this is the construction which we prefer, as we thereby are enabled to keep the top-operating mechanism wholly without the box proper; but, if desired, the lever may be secured to the body of the box A at any convenient point near the rear thereof. A clip *b*⁴, constructed as clearly shown in Fig. 3, is secured to the inner face of the end pieces *b*³, preferably at a point somewhat nearer the front than the rear edge of the couch, and the lever D rests within said clip, the latter preferably being of such size as to allow the lever some play or freedom of movement therein.

E is a spring of any character desired, here shown as a simple coil-spring having one end secured to lever D, preferably at a point *d'* immediately to the rear of the clip *b*⁴, when the cover is closed and the other end secured to some point of the structure which when measured along the line of the spring is nearer to the point *d'* on the lever D when the cover is raised than when it is down. As shown in Figs. 1 and 2, such point is at *e* near the upper rear portion of the cover and the end of the spring is secured directly thereto, and it will be seen from an inspection of Figs. 1 and 2 that in closing the cover the point *d'* recedes from the point *e*, thereby placing the spring under tension. As shown in Fig. 4, one end of the spring E is secured at *e'* near the bottom of the box A and is connected to the lever D at *d'* by means of a cord or chain E' extending over an antifriction-roller *f* near the upper rear corner of the cover. In this construction the spring E is placed on the outside of the box, preferably within a groove formed in the cleat *a*, and the lever is fulcrumed on the cleat, and it will be apparent that the distance from *e'* to *d'* when measured along the line of the spring E and cord or chain E' is greater when the cover is closed than when it is open, so that in closing the cover the spring is given the tension which is utilized to open or assist in opening the cover. Preferably the under side of the lid or cover B would have cloth tacked thereto, as is common in upholstered structures of this kind, and the spring E and all of the connected parts, except the lower end of the lever D, would thereby be concealed from

view when the couch is open. Furthermore, it will be observed that there is no part of the operating mechanism extending down into box of the couch, where its operation could be interfered with by the contents of the box.

While we have shown a simple lever D and its connected spring E as a means for storing the power and applying the same to assist in opening the lid, we wish it distinctly understood that we do not thereby desire to limit ourselves to the particular kind of leverage or construction shown, as any form of lever or construction of spring whereby such spring and lever coact to open or assist in opening a cover hinged at its upper edge to a box without being themselves located within the box proper will fall within the spirit of our invention.

Hinging the cover at its upper rear edge makes it possible to raise the cover without withdrawing the box from the wall and without using any complicated hinge, and the location of the spring and operating leverage outside of the box proper avoids any interference with the operation of the parts by the contents of the box or the injury of such contents by the operating mechanism.

In the modified form shown in Fig. 5 the lever D' is pivoted at *b*⁵ at its forward end to a link *a'*, which is in turn pivoted to the cover B at *d*². When the cover is closed, the pivot-pins *d*² *b*⁵ occupy such a relation to each other that the tension of the spring E is practically along the line connecting the pivot-pins *b*⁵ *d*², so that the spring does not have the tendency to lift or open the couch-cover until the same has been moved upward far enough to throw the pivot-point *b*⁵ above that of *d*². With this exception the action of the form shown in Fig. 5 is substantially the same as that of Figs. 1 and 4.

Having thus described our invention, what we claim is—

1. The combination of a box, the cleats attached thereto and projecting above the upper edge thereof and a cover hinged at its upper rear edge or corner to said cleats with a power device lying within the cover when the latter is closed and operating to assist in opening the cover.

2. The combination of the box and the cleats attached thereto and projecting above the edge thereof, the cover hinged to the cleats, with a lever fulcrumed to turn about a fixed point without the box, and in operative engagement with said cover and a spring also without the box and acting to turn said lever in a vertical plane about its fulcrum.

3. The combination of the box and the cleats attached thereto and projecting above the edge thereof, the cover hinged at its upper rear edge or corner to said cleats with a spring and lever located wholly without said box and operating to assist in raising or opening said cover.

4. The combination of a box, cleats attached to and projecting above the same, a

cover hinged at its upper rear corner to said cleats, a lever fulcrumed on one of said cleats and operatively engaging the cover and a spring tending to turn said lever in a vertical plane about its fulcrum.

5 5. The combination of a box, cleats attached to and projecting above the same, a cover hinged at its upper rear corner to said cleats, a lever fulcrumed on one of said cleats and operatively engaging the cover and a spring secured at one end to the lever and at the other end to the cover.

10 6. The combination of a box, cleats attached to and projecting above the same, a

cover hinged at its upper rear corner to said cleats, a lever fulcrumed in the plane of the rear wall of the box, a link pivotally connected to the lever and cover, and a spring tending to turn said lever about its fulcrum.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

GEORGE T. SMALLWOOD.
ADAM H. SULSER.

Witnesses:

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