

(No Model.)

E. E. PECK.
COUNTERPOISE SPRING FOR BOX LIDS.

No. 563,058.

Patented June 30, 1896.

Fig. 3.

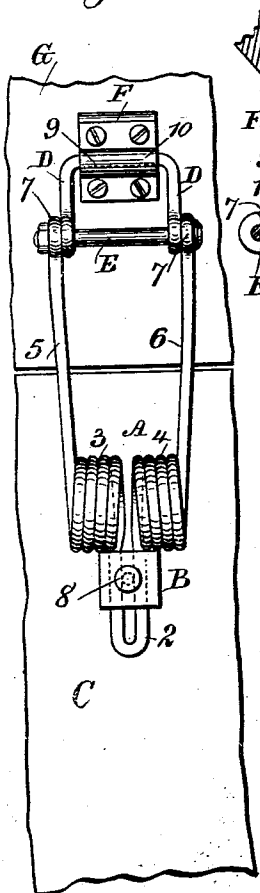


Fig. 2.

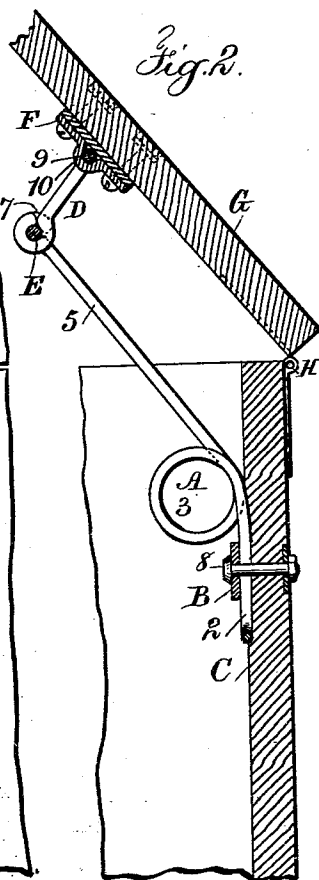
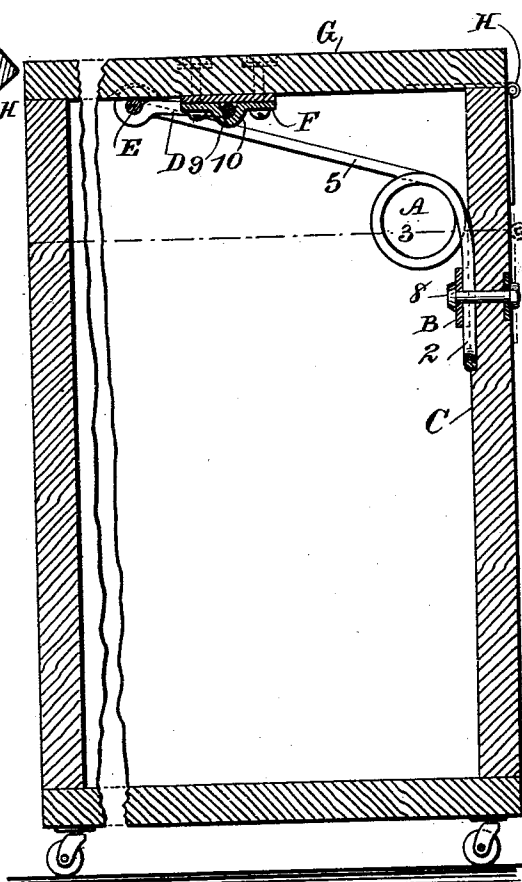


Fig. 1.



Witnesses

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EDMUND E. PECK, OF BROOKLYN, NEW YORK.

COUNTERPOISE-SPRING FOR BOX-LIDS.

SPECIFICATION forming part of Letters Patent No. 563,058, dated June 30, 1896.

Application filed March 30, 1896. Serial No. 585,362. (No model.)

To all whom it may concern:

Be it known that I, EDMUND E. PECK, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Counterpoise-Springs for the Lids of Boxes, Lounges, Packing-Trunks, &c., of which the following is a specification.

Difficulty has heretofore been experienced in applying springs for raising the lids and covers of boxes, trunks, box-lounges, &c., because the spring exerts its greatest lifting force when the lid or cover is closed down, and the power of the spring becomes less as the lid is raised up. Consequently the supporting power for the lid or top when it is raised is often insufficient, and the force of the spring is so great that the cover, when it is closed, often has to be locked to prevent the spring lifting such cover.

The object of the present invention is to equalize, or nearly so, the action of the spring in holding the cover or top in either an elevated or depressed position, and by the improvement the spring itself can be made to hold down the top or cover when it is closed fully to place.

In carrying out this improvement the spring, with lever-arms, is connected at one end to the bottom of the box or other article, and the other ends or arms are connected by toggle-links with the top or cover of the box, and these swing in reverse directions, so that as the spring swings upward the toggle-arms swing in the opposite direction and tend to increase the elevation given to the top of the box, and when such top or cover is closed down the toggle-arms swing into the same plane, or nearly so, as the arms of the spring; and when the parts are positioned so that the ends of the toggle-bars that are connected with the top of the trunk pass below a straight line through the hinges of the top and the joints between the ends of the spring-arms and the toggle-bars, the action of the springs is to hold down such top or cover, or the parts are placed so as to apply tension to the toggles and effect the same object.

In the drawings, Figure 1 is a partial section of a box and cover, showing the spring and parts connected in the positions they assume when the cover is closed. Fig. 2 is a

similar view showing the positions of the parts when the cover is raised or partially opened, and Fig. 3 is an elevation of the spring and the toggle-bars.

The spring A is preferably made of steel wire bent in the middle at 2, and formed with two coils or helices 3 4, and with extending arms 5 and 6, and these arms terminate at the ends as eyes 7, and the clamp-block B is adapted to rest against the middle portion of the spring and near the bend 2, and the same is firmly secured to the back C of the box-lounge or similar device, and I have shown the bolt 8 passing through such box C for securing the clamp-block B firmly in place.

The toggle-bars D are of suitable length, and they are preferably formed with eyes at their ends, so that the pivot-pin E passes through the eyes 7 at the ends of the arms 5 and 6, and also through the eyes at the ends of the toggle-bars D, and the toggle-bars are advantageously made in one piece, the central connection 9 passing through an eye or lug upon the plate F, so that the toggle-links are held in their proper relative positions, but they are free to swing in the eye or lug, and the plate F is to be connected to the top of the box in the proper position, so that when the top of the box is closed down the toggle-bars D pass from the ends of the arms 5 and 6 toward the hinges H, which hinges, of course, may be of any desired character.

It will now be observed that when the top G is raised the toggle-links D swing in one direction and the arms 5 and 6 swing in the other direction, and the top G moves through a larger arc of a circle than do the ends of the arms 5 and 6, and by properly proportioning the parts according to the strength of the spring, so the weight of the top or cover can be counterpoised, because, as the cover is lowered or pressed down to the bottom part of the box, the toggle-links have an increased leverage in moving the arms 5 and 6 of the spring, and when the central pivotal connection 9 of the toggle-links passes beyond a straight line drawn through the pin E and the hinge H the action of the spring is to hold down the cover or top G firmly in position, and the same effect is produced when the attachment of the toggle-arms to the cover is so placed as to apply tension to the toggle-

links when the cover is closed, because such tension on the links is in a direction to pull the cover down upon the bottom of the box or chest.

- 5 This improvement can be applied to a box or chest with a top or cover similar to a trunk, as indicated by the dotted lines in Fig. 1.

I claim as my invention—

- 10 1. A wire spring having a coil and the wire arms projecting from the two ends of the coil in combination with means for securing the coil and one projecting arm to the interior of a box or similar article, and a toggle-bar pivoted to the other projecting arm of the spring,
15 and a pivotal connection for the outer end of the toggle-bar, substantially as specified.

2. A spring formed of a wire bent in the middle and two coils, the ends of the wire extending out as arms and terminating with
20 eyes, in combination with a clamp for securing the middle portion of the wire to the box or other article, and toggle-bars pivoted to the ends of the arms and a pivotal connection between the toggle-arms and the top of the box
25 or similar article, substantially as set forth.

3. A spring formed of a wire bent in the middle and two coils, the ends of the wire ex-

tending out as arms and terminating with eyes, in combination with a clamp for securing the middle portion of the wire to the box 30 or other article, and toggle-bars pivoted to the ends of the arms, with a central connection, and a pivotal connection to the lid of the box or similar article, substantially as specified.

4. A spring formed of a wire bent in the 35 middle and two coils, the ends of the wire extending out as arms and terminating with eyes, in combination with a clamp for securing the middle portion of the wire to the box or other article, and toggle-bars pivoted to the 40 ends of the arms, with a central connection and a pivotal connection to the lid of the box or similar article, such connection projecting from the surface of the lid so as to pass below a line drawn from the hinges of the lid to 45 the pivotal connection between the arms and the toggles whereby the spring acts to hold down the lid, substantially as set forth.

Signed by me this 27th day of March, 1896.

EDMUND E. PECK.

Witnesses:

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