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M. L. ROARK

METAL BOX HAVING TRAYS MOUNTED ON SWINGABLE LINKAGE

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2,488,067

Fig. 1.

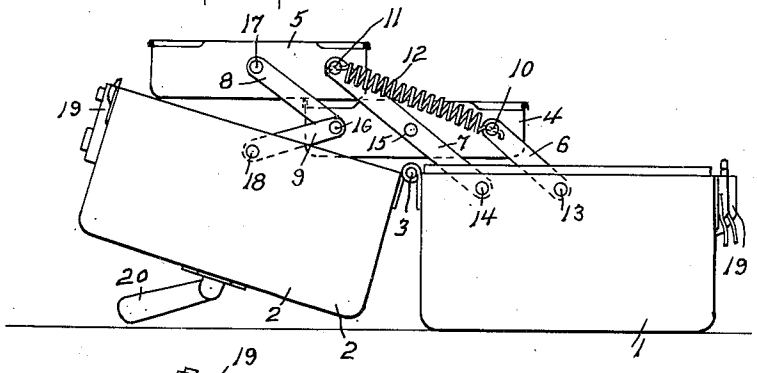


Fig. 2.

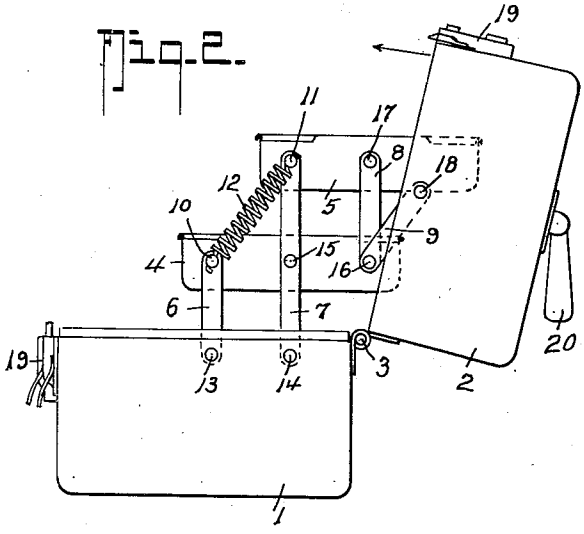
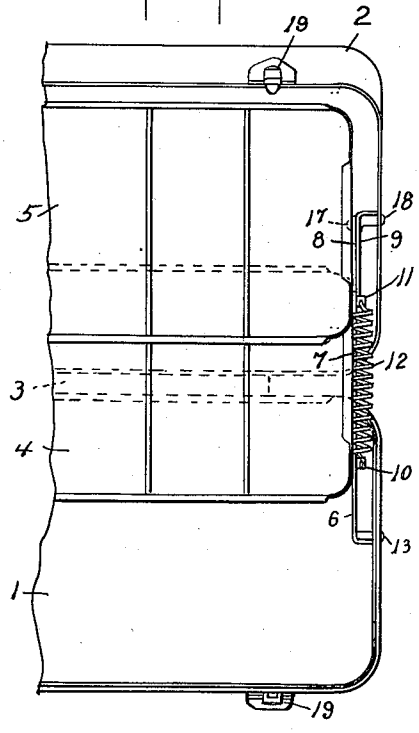


Fig. 3.



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METAL BOX HAVING TRAYS MOUNTED ON SWINGABLE LINKAGE

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Application October 21, 1946, Serial No. 704,603

1 Claim. (Cl. 206—16)

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My invention relates to boxes of the type disclosed in Letters Patents No. 303,783 issued August 19, 1884, No. 1,766,553 issued June 24, 1930, No. 1,858,539 issued May 17, 1932, No. 1,882,756 issued October 18, 1932 and No. 1,925,409 issued September 5, 1933.

Tool boxes of the type mentioned employ a two part box, the top and bottom parts of which are hinged together; two or more trays are mounted in the box in superposed relation and are so connected with the top and bottom sections of the box, that when the box is opened the trays will automatically be raised and arranged step fashion.

In the raising and lowering operation the trays do not always move smoothly but wobble (especially when the pivot joints of the linkage employed become worn or are loose); also the opening and closing action is often quite noisy due to parts striking together as the trays get out of line.

It is to overcome in a simple, yet effective way, the objections above noted and render the operation of the box, in opening and closing, smooth and as noiseless as possible by preventing the trays from falling out of line, that my invention has been made.

To the attainment of the foregoing objects invention resides in the novel construction and combination of parts hereinafter first described in detail and then specifically pointed out in the appended claim, reference being had to the accompanying drawing in which:

Fig. 1 is one end elevation of a box embodying my invention, the parts being in the open position.

Fig. 2 is an elevation of the other end of the box with the parts in the partly closed position, the closing movement being in the direction of the arrow.

Fig. 3 is a detail top plan view of the box in the open position showing the same at said other end.

In the drawing in which like numerals of reference indicate like parts in all the figures, 1 represents the bottom section of the box and 2 the top section. The sections 1 and 2 are hinged together as at 3 and have the usual fastening devices 19 and the top has the usual handle 20.

The trays are indicated by 4 and 5 and they are linked together by links or levers 7 and 8. The tray 4 is also linked to the bottom section 1

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by the links 7 and links 6 while the tray 4 is linked to the top section 2 by links 9.

13 and 14 designate respectively the pivots of the links 6 and 7 to the bottom section 1 of the box, and 18 designates the pivot of the links 9 to the top 2. The links 6 and 7 are pivoted at 10 and 15 respectively to the tray 4 while links 7 and 8 are respectively pivoted at 11 and 17 to the tray 5.

The pivots 10 and 11 are swiveling pivots to which coil springs 12 are anchored as shown. By connecting the front pivots of the trays 4 and 5 by coil springs 12 (one at either end of the trays) I find that the objects of my invention are accomplished satisfactorily, the trays stay in line in both opening and closing and do not assume a jerky action during their movements but operate smoothly and quietly.

From the foregoing description it is thought the construction, operation and advantages of my invention will be clear to those skilled in the art.

What I claim is:

In a two part box having a bottom section and a top section; at least two superposed trays within said box; a pair of parallel links pivoted to each end of and connecting the trays and pivoted inside of and to the bottom section of the box to hold the bottom tray substantially parallel to the bottom of the box, one link of each pair being pivoted to the tray next above the first mentioned tray; a third parallel link at each end pivoted to the two trays; links pivotally connecting each end of the first mentioned tray to the top section of the box, combined with a tension spring at each end of the trays connected respectively to the adjacent first and second mentioned trays at their respective front link pivots to keep them in line while opening and closing the box.

MARTIN LUTHER ROARK.

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The following references are of record in the file of this patent:

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