L. W. GOODMAN.

TOOL BOX.

APPLICATION FILED SEPT. 29, 1911.

1,131,128.

Patented Mar. 9, 1915.

Fig. 1.

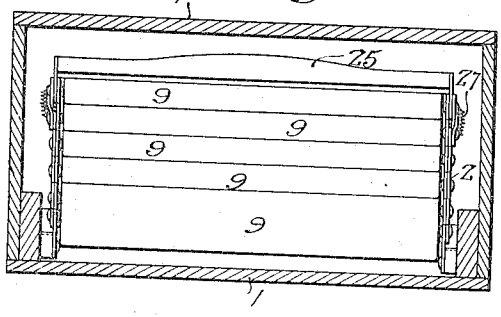


Fig. 2.

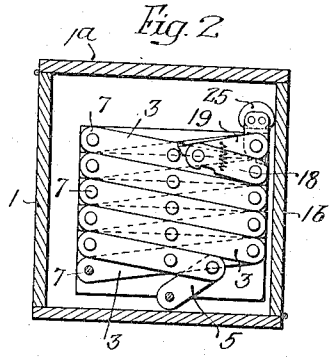


Fig. 3.

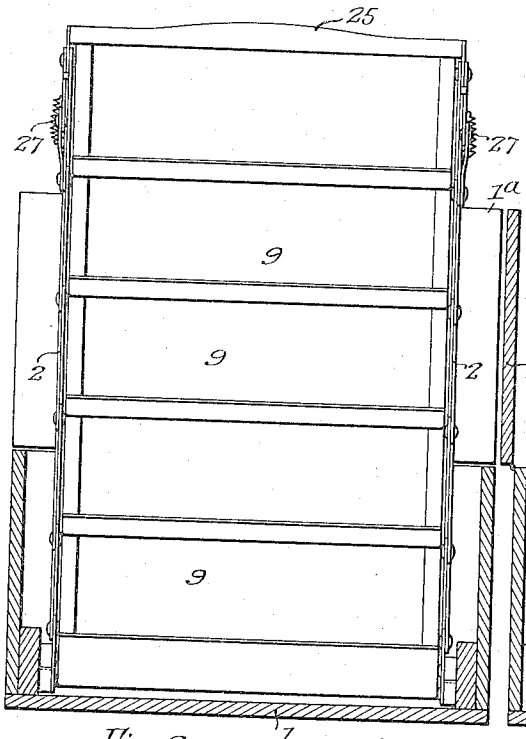


Fig. 4.

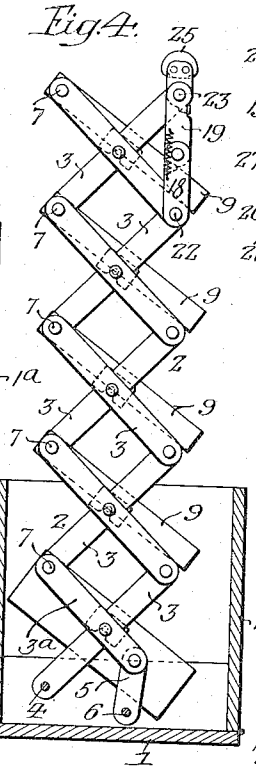


Fig. 9.

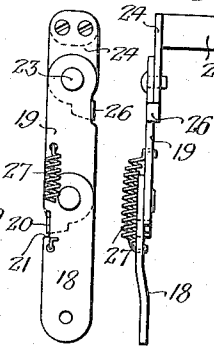


Fig. 8.

Fig. 5.

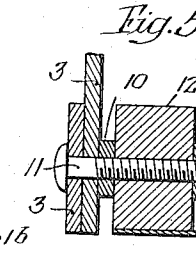


Fig. 10.

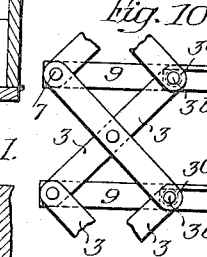


Fig. 6.

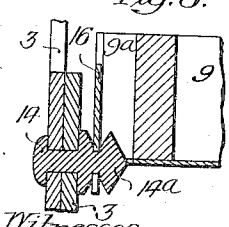


Fig. 7.

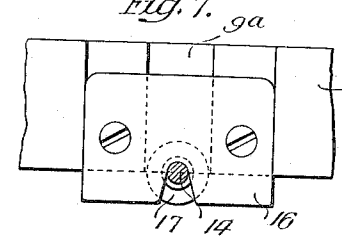


Fig. 11.



Witnesses—
William A. Rivois.
Willard Burrows.

Inventor
Lewis W. Goodman,
by his Attorneys—
Howson & Howson

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LEWIS W. GOODMAN, OF LANSDOWNE, PENNSYLVANIA.

TOOL-BOX.

1,131,128. Specification of Letters Patent. Patented Mar. 9, 1915.

Application filed September 29, 1911. Serial No. 652,021.

To all whom it may concern:

Be it known that I, LEWIS W. GOODMAN, a citizen of the United States, residing in Lansdowne, Delaware county, Pennsylvania, have invented certain Improvements in Tool-Boxes, of which the following is a specification.

One object of my invention is to provide a novel form of container particularly adapted for the reception of tools, which shall include a number of independent receptacles capable of being nested within a main container or withdrawn therefrom at will into positions in which their contents are readily accessible; the arrangement being such that when so withdrawn the various receptacles or boxes are held in positions one vertically above the other.

I further desire to provide a container having the above characteristics in which the various receptacles are mounted on sets of "lazy tongs" or lattice work side members, so proportioned and connected that when in their extended positions said receptacles are supported one vertically above the other and vertically above the main container; the invention further contemplating novel means whereby the separate receptacles may be retained in their elevated or extended positions when this is desirable.

Another object of my invention is to provide a novel form of container which shall consist of a number of separate receptacles mounted on extensible lattice work supports in such manner that when said supports are extended said receptacles are forced to occupy inclined or horizontal positions one over the other; it being also desired to provide novel means for connecting the receptacles to the supporting structures.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which:—

Figures 1 and 2 are side and end elevations partly in section, illustrating the container with its receptacles in their closed positions; Figs. 3 and 4 are respectively side and end elevations partly in section, illustrating the container in its open position; Fig. 5, is a full sized vertical section illustrating the connection between the end of each receptacle and the adjacent lattice work supports; Figs. 6 and 7 are respectively a side elevation partly in section and an elevation, showing the details of the connection between the lattice work supports and the central pivots of the receptacles, Figs. 8 and 9 are respectively a side and an end elevation of the toggle for locking the lattice work supports in their extended positions, and, Figs. 10 and 11 are an end elevation and an enlarged section showing a slightly modified arrangement of the lattice work supports and receptacles.

In the above drawings 1 represents a main container of any suitable form within which are mounted two sets of lazy tongs or extensible lattice work supports 2. Each of these consists in the present instance of a number of pairs of flat bars 3 pivotally connected together in the manner characteristic of lazy tongs; it being noted, however, that while one member of the lower pair of each set is pivoted at 4 to the structure of the main container, the other member 3^a of the same pair is pivoted to a supplementary member 5 which itself is pivoted at 6 to the said main container. This latter has a hinged cover 1^a and its front side 1^b is likewise hinged so that it may be dropped when desired.

At each of the joints 7 between the ends of the bars 3 at one side of each set of lattice work there is pivoted one end of a shallow receptacle 9 of rectangular section:—the connection between the bars and said receptacle being made as indicated in Fig. 5. As here shown the two members 3 of the lattice work support are held together by an elongated screw 11 and a locking nut 10 thereon; said screw being extended through the adjacent end 12 of the receptacle 9, in which it is held by a second nut 13. In addition to this connection, each of the receptacles 9 is pivotally connected to the two sets of lattice work supports by pivots of the construction shown in Figs. 6 and 7. These pivots are preferably in the form of rivets 14 which, in this case, serve to connect two of the flat bars 3 at their middle points, and each of them in addition has an extension 14^a forming a second head, between which and the main portion of the rivet is an annular recess tapering from its outer portions inwardly.

Each of the receptacles 9 is vertically slotted at the middle portion of its end as shown at 9^a and across this slot is provided with a plate 16 in whose lower edge is formed an upwardly extending recess 17. This recess is designed to receive the neck

between the two parts 14 and 14[a] of a rivet. With this arrangement of parts and when the lattice work supports are in their collapsed positions shown in Figs. 1 and 2, the various receptacles 9 are supported in horizontal positions one immediately over and adjacent the other. When, however, the lattice work supports are extended as shown in Figs. 3 and 4, the rear edge of each of the boxes is raised and since the central portion of each box is pivoted to the rivets 14, the various boxes are supported vertically one over the other at some predetermined inclination to the horizontal.

For retaining the lattice work supports in their extended positions I provide each of them with a toggle consisting of two links 18 and 19 pivoted together and prevented from moving to one side of their straight line positions by means of a lug 20 on the part 19 placed to enter the recess 21 of the part 18. This latter member is pivoted to the extensible lattice work support at 22 while the part 19 is pivoted to said support at 23. Each of the members 19 is also pivoted to one end of a link 24 and these two links are connected by a handle or cross bar 25. Each of said links 24 is also provided with a lug 26 placed to engage the edge of the toggle link 19. With this arrangement of parts, when the lattice work supports have been moved to their fully extended positions with the receptacles in the positions shown in Fig. 4, the two toggles are moved from their collapsed position shown in Fig. 2, to their straight line positions shown in Fig. 4, there being preferably springs 27 so attached to them that they tend to remain in this latter position. Since these two pair of toggle links extend between the pivots 22 and 23 of the sets of lattice work or lazy tongs, the latter cannot collapse and are therefore retained in the position shown with the various receptacles carried by them in such positions that their contents are fully exposed. The handle 25 is particularly useful in raising the two sets of lattice work supports with their receptacles to their extended or open positions and when it is desired to collapse said supports, a turning of the links 24 on their pivot 23 by means of the handle will bring the lugs 26 of said links against the links 19, with the result that these are "broken" from their straight line positions, whereupon since there is no further obstacle to the collapse of the extensible supports, these latter with the various receptacles are free to return under the action of gravity to their closed positions within the main receptacle 1.

By the arrangement of the connections between the various receptacles and the extensible supports, the latter are materially strengthened, and in addition it is possible to have convenient access to the contents of any of the boxes, especially as these may be swung upwardly on their rear pivots 7, since their central supports formed by the plates 16 may be disengaged or detached from the supporting rivets 14. The front 1[b] of the main container may also be dropped so that free access may be had to the lower receptacles.

While I preferably employ the container above described as a box for holding the tools necessary for use on an automobile, the various receptacles 9 being preferably each provided with a supplementary container of felt or the like, which while preventing the tools from rattling, permits them to be conveniently removed when they are desired for use and at the same time holds them in any given position, it is obvious that it may be employed with great advantage as a show or display case.

Instead of having the receptacles detachably connected to the central pivots of the lattice work supports as in Fig. 4, they may if desired be supported on the second set of pivots 3[b] connecting the ends of the bars 3 as shown in Fig. 10. With this arrangement the receptacles may be substantially horizontal when the supports are in their extended positions, there being rollers 3[c] on the pivots 3[b] which operate in suitable recesses of the receptacles to permit of the relative movement of said parts.

I claim:

1. The combination of a plurality of sets of lattice work supports; and a series of receptacles each having each of its end portions permanently connected, adjacent the corners at the ends of one side, to the joint between the ends of two adjacent elements of said supports; said receptacles being also pivotally and removably connected, adjacent the middle of their end portions, to each of the lattice work supports adjacent the joint between the middle parts of the second one of said elements and a third element; the second side of each receptacle extending adjacent the end of said second element.

2. The combination with two sets of collapsible lattice work supporting structures of a plurality of receptacles each permanently connected at the upper part of each of its ends to the pivot between the ends of two elements of said supporting structures; each of the receptacles being inclined downwardly from said pivots when the supporting structures are extended and being also detachably connected at the middle of its ends to the pivots between the middle parts of two elements and projecting downwardly beyond the same.

3. The combination of a plurality of sets of lattice work supports; a series of receptacles each having opposite end portions connected to the ends of two adjacent ele-

ments of the lattice work supports; pivots connecting the middle portions of each pair of said elements and provided with extensions having V-shaped grooves; and plates on the opposite end portions of the receptacles having recesses; the grooved portions of the pivot extensions removably fitting said recesses of the plates.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

LEWIS W. GOODMAN.

Witnesses:
WILLIAM E. BRADLEY,
JOS. H. KLEIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."