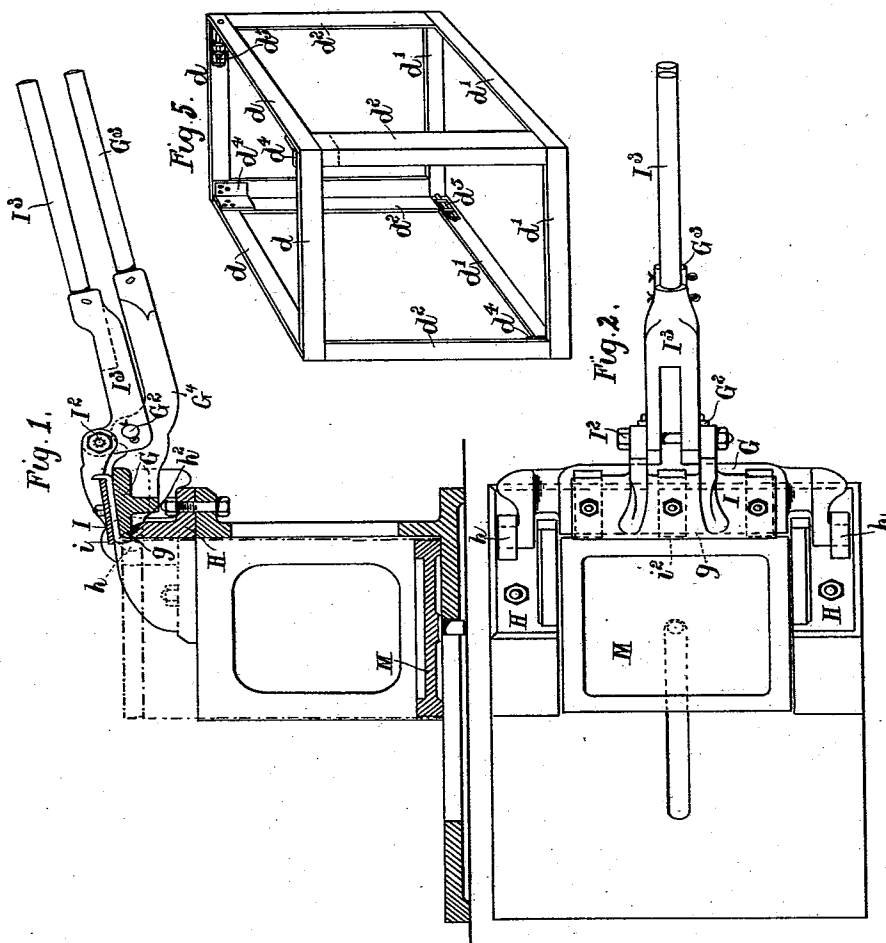


F. J. KING.
MANUFACTURE OF METAL CHESTS.

No. 498,718.

Patented May 30, 1893.



Witnesses:
Willard
F. B. Keefe

Inventor:
Frederick J. King
by Charles Deily
his atty.

(No Model.)

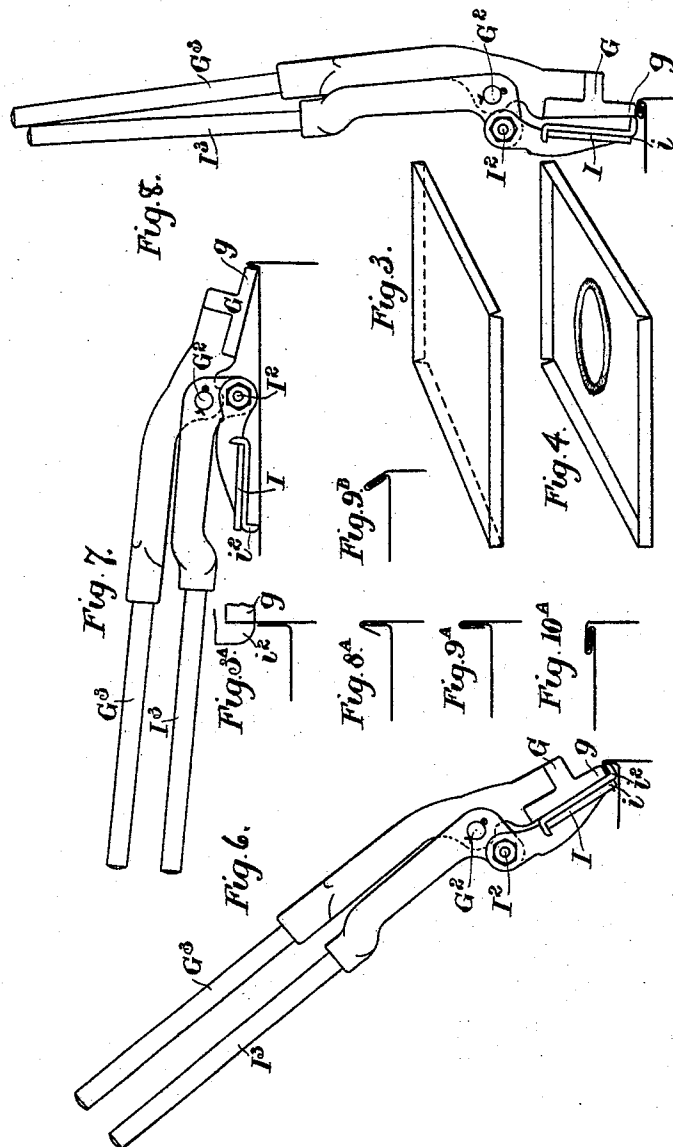
2 Sheets—Sheet 2.

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MANUFACTURE OF METAL CHESTS.

No. 498,718.

Patented May 30, 1893.



Witnesses:

W. A. Dick
 F. B. Keifer

Inventor,

Frederick King
by Mendenhall Bailey
his atty.

UNITED STATES PATENT OFFICE.

FREDERICK J. KING, OF LONDON, ENGLAND.

MANUFACTURE OF METAL CHESTS.

SPECIFICATION forming part of Letters Patent No. 498,718, dated May 30, 1893.

Application filed January 26, 1892. Serial No. 419,348. (No model.) Patented in England October 20, 1887, No. 14,296.

To all whom it may concern:

Be it known that I, FREDERICK JOHN KING, merchant, a subject of the Queen of Great Britain and Ireland, and residing at 3 to 6 Camomile Street, in the city of London, England, have invented certain Improvements in Apparatus for the Manufacture of Metal Chests or Cases, (for which I have obtained a patent in Great Britain, No. 14,296, dated October 20, 1887,) of which the following is a specification.

My invention has for its object to provide simple and convenient apparatus for fixing the ends of metal cases without riveting or soldering.

I will describe my invention with reference to the accompanying drawings in which—

Figure 1 is a sectional elevation and Fig. 2 a plan of my improved apparatus for fixing the bottom and top of the case into the body thereof and the remaining figures illustrate the various stages in the manufacture of the case and details which will be hereinafter referred to.

The angles in the body of the case having been made by suitable machinery it is taken to the apparatus illustrated by Figs. 1 and 2 for fixing the bottom and top thereto. The plate to form the bottom of the case is made of sufficient size to extend say about a quarter of an inch outside the four sides of the tube or body of the case or chest which projecting edges are turned up to right angles by suitable means so as to form a shallow tray as shown in Fig. 3 which will snugly fit into the tube. In like manner the top is formed from a plate the same size as that from which the bottom is made, but provided with an opening therein as shown in Fig. 4 which may be stamped out in a press or by other means.

In the body or tube is placed an anvil or surface to receive the pressure when securing the bottom and top of the case which anvil may consist of a block of wood faced with metal but I prefer to form the said anvil of a number of pieces of metal or, wood and metal fitted and held together so as to be capable of being readily taken apart and removed from the case when finished. This anvil is illustrated in Fig. 5 and consists of top and bottom frames d d' kept at the required distance apart by angle irons d^2 . Each frame d

d' consists of four bars connected together at their ends by hinges d^4 and bolts d^5 . The hinges d^4 extend beyond the edge of the bars forming the frame and enter the interior of the angle irons d^2 thereby retaining the said angle irons in their vertical position and giving rigidity to the anvil. The bottom plate formed as hereinbefore described is inserted in the tube so as to rest on the block or anvil with the rim or turned up edges upward the anvil being so far within the tube that the upper edges of the four sides of the said tube will project above the turned up edges of the bottom plate to the extent of say about a quarter of an inch as shown in Fig. 3^a.

The apparatus Figs. 1 and 2 for fixing the bottom and top plates in the tube or body A consists of a nipping device containing two jaws G and I the jaw G being square or flat at its forward edge or end g and carried by a lever G^4 which is hinged at h to the frame H while the other jaw I is provided at its end i with a projecting edge or with projections i^2 which lie in front of and opposite to the front end or edge g of the jaw G between which projecting edge or projections and the square or flat end g of the jaw G, the metal to be bent is placed and firmly held. The jaw I is hinged at I^2 to a lever I^3 preferably of angular shape which is hinged to the jaw G at G^2 so that by pressing together the two handles G^3 and I^3 of the respective jaws G and I a very powerful grip will be imparted to the article placed between the jaws.

The tube with the anvil therein and the bottom inserted, is placed in position in the frame H (as shown by dotted lines in Fig. 1) on a plate or turntable M and the projecting edge of one side of the tube or body is inserted between the jaws G I of the nipping device as shown in Figs. 1 and 3^a which device is then turned on its hinges h by means of handles I^3 G^3 into the position shown in Fig. 6 so as to cause the projecting edge of the tube held between the jaws to be bent inward to an angle over the projecting rim of the bottom plate as shown in Fig. 8^a. The partially turned over edge is then released from the nipping jaws and then pressed by the jaw G into contact with the turned up edge or rim of the bottom plate; to do this the

jaw I is turned back on its hinge as shown in
 Fig. 7 and the jaw G is then turned on its
 hinge so as to cause the flat or square end *g*
 thereof to press the partially turned over edge
 5 of the tube forcibly against the turned up
 edge of the bottom plate the said edge being
 thereby inclosed within the turned over edge
 of the side of the tube or body of the case or
 chest as shown in Fig. 9^a. The tube or par-
 10 tially formed case is then removed from the
 frame H, by drawing out the turntable with
 the tube thereon, and then returned into the
 frame with another of the projecting edges in
 position to be turned over, and in like man-
 15 ner the other projecting edges are brought
 successively into position and acted on in the
 manner described. The projecting edges of
 the four sides of the tube being thus folded over
 the rim of the bottom plate; a rim consisting
 20 of three thicknesses of metal as shown in Fig.
 9^a is thus formed round the tube and the next
 operation is to flatten this rim onto the bottom
 plate. For this purpose the tube and the turn-
 table carrying it are raised so as to bring the
 25 surface of the bottom plate about level with
 the top edge *h*² of the frame H the rim being
 made to project above the frame. The rim on
 one of the four sides of the tube is then nipped
 between the jaws of the nipping device and
 30 turned in at an angle toward the bottom as
 shown in Fig. 9^b and afterward pressed
 against the bottom by means of the square
 end of the jaw G as shown in Figs. 8 and 10^a,
 and the other portions of the rim being simi-
 35 larly acted upon the bottom is fixed in posi-
 tion without the use of rivets or solder. The
 elevation of the turntable with the partly
 formed chest thereon may be effected by in-
 serting a plate of the required thickness be-
 40 tween the turntable and the base plate of the
 apparatus or by any other suitable means.
 The chest or case thus far made and still con-
 taining the anvil is removed from the frame
 and turned upside down to have the top fixed
 45 thereto which is effected in the same way as
 that described for fixing the bottom the anvil
 being of such a length that the four sides of
 the body of the case will project about a
 quarter of an inch above the turned up edge
 50 of the top plate when the said plate is resting
 on the anvil. When the fixing of the top

plate is completed the case is removed from
 the apparatus and the anvil taken apart and
 removed from the interior. To remove the
 anvil it is simply necessary to withdraw the
 55 bolts *d*³ which connect together the parts of
 the upper and lower frames after which the
 parts may be easily separated and withdrawn
 through the opening in the top of the case.

I claim—

1. In an apparatus for the manufacture of
 metal cases, the combination with a support
 for the case, of a folding device consisting of
 a lever hinged to the support and provided
 with a jaw, another lever hinged to the first
 65 said lever, and a hinged jaw carried by the
 second said lever, substantially as set forth.

2. In an apparatus for the manufacture of
 metal cases, the combination of a folding de-
 vice, consisting of a jaw having a flat edge,
 70 carried by a lever, an angular lever pivoted
 to the lever carrying said jaw, and another
 jaw provided at its end with a projection or
 projections which overlap or lie in front of,
 and opposite to, the front end or edge of the
 75 first said jaw, and which are adapted on the
 movements of the said angular lever to move
 toward and from the same, substantially as
 set forth.

3. In an apparatus for the manufacture of
 metal cases, the combination of the support
 for the case, a lever G⁴, pivoted thereto and
 provided with the folding jaw having a
 square or flat end *g*, the lever I³ pivoted to
 the lever G⁴, the jaw I pivoted to the lever I³,
 85 and the projections *i*² carried by the jaw I
 and lying opposite to and parallel with the
 edge of the jaw *g*, substantially as set forth.

4. In an apparatus for making metal cases,
 the combination of the support for the case,
 90 the folding jaws adapted to turn or fold over
 the edges of the case, and the collapsible an-
 vil or frame adapted to be inserted into the
 said case, substantially as set forth.

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

FREDK. J. KING.

Witnesses:

GEORGE COTTIS,

PENROSE DURMAN,

Both of 3 Camomile St., E. C.