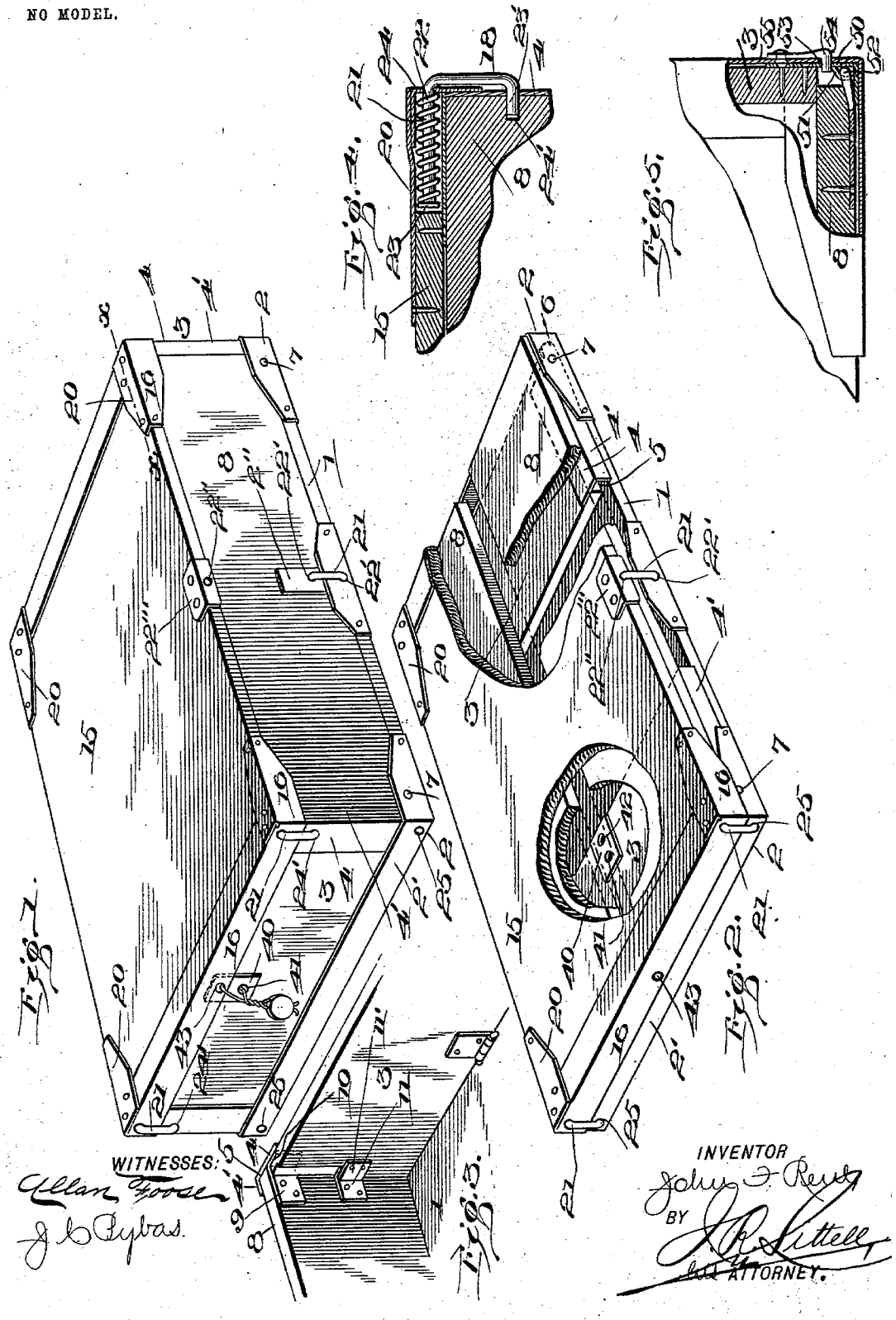
No. 758,105. PATENTED APR. 26, 1904.

J. F. REUL.

KNOCKDOWN BOX OR CRATE.

APPLICATION FILED JULY 21, 1903.

NO MODEL.



WITNESSES:
Allan Foose
J. L. Sybas.

INVENTOR
John F. Reul
BY
J. R. Littell
HIS ATTORNEY.

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

No. 758,105. Patented April 26, 1904.

UNITED STATES PATENT OFFICE.

JOHN F. REUL, OF JUNEAU, WISCONSIN.

KNOCKDOWN BOX OR CRATE.

SPECIFICATION forming part of Letters Patent No. 758,105, dated April 26, 1904.

Application filed July 21, 1903. Serial No. 166,446. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. REUL, a citizen of the United States, and a resident of Juneau, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Knockdown Boxes or Crates, of which the following is a specification.

My invention relates to boxes and crates, and particularly to that class of boxes and crates known in the art as "knockdown" boxes and crates.

It has for its object to provide an improved box or crate of this character which may be easily and readily knocked down and packed or set up, to adapt it when set up to serve as a secure and strong box or crate in which to transport goods, and when knocked down for return to be packed into a compact and secure package.

In the drawings, Figure 1 is a perspective view of my box or crate set up. Fig. 2 is a perspective view of the box or crate knocked down and packed, the cover being partly broken away to show the manner of packing. Fig. 3 is an enlarged detail view of a corner of the box. Fig. 4 is a sectional view of the latch. Fig. 5 is a modified form of lock for the corners of the cover.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates the bottom of the box, provided at each end and for a short distance along the sides with angular strips 2, one member thereof being secured to the outer surface of the bottom and the other member extending upwardly and forming a flange 2′. The end sections 3 of the box are provided with angular strips 4, one member thereof being secured to the outer surface of the end sections at each end and the other member extending inwardly and forming a flange 4′, and said strips being so positioned as to leave a space 5 between their flanges 4′ and the ends of the end sections, and ears 6 at the lower ends of said strips are pivoted at 7 to the portions of the strips 2 extending along the sides of the bottom, so that when the said end sections are turned up the lower edges will come squarely against the inner surface of the bottom and the side edges and outer surface will come squarely against the end and side flanges 2, respectively, of the bottom. The ends of the side sections 8 of the box fit into the spaces 5 between the side edges of the end sections and the flanges 4′ of the strips 4 secured thereto, and are provided at their upper edge with angular clamping-plates 9, which engage recesses 10 between the strips 4 and the outer surface of the end sections, and angular clamping-plates 11 on the inner surface engaging plates 11′ on the inner surface of the end sections, said plates in conjunction with the strips 4 serving to hold the sides and end sections securely together. The top 15 of the box is also, like the bottom, provided at each end and for a short distance along the sides with flanges 16, said flanges in this instance extending downwardly, and when the cover is placed on the box fit closely against the flanges on the bottom of the box.

Latches 18 for securing the cover of the box or crate in place when the box is set up and secured on each corner of the top, and a similar latch 19 is located in the bottom on one edge thereof. Each of these latches comprises a casing 20, in which a substantially L-shaped locking-bolt 21 is reciprocally mounted and held at its inner position by a coil-spring 22, located on said bolt and bearing against a shoulder 23 at its inner end and against a flange 24 of said casing. When desired to lock the cover on the box, the latches on the cover are pulled out against the action of the springs 22 and the ends 23 brought opposite the sockets 24′ in the strips 4 and the cover and the bolt on the bottom brought opposite the socket 22′ in the angular plate 2″ on the top and then released, the recoil of the springs forcing the ends 23 of the bolts into the sockets 24′ and 22′ and locking the cover. When the box is knocked down and packed, the ends of the latches engage holes 25 in the end flanges or strips 2 and the socket 22″ in the plate 22‴ and lock the cover to the bottom of the box. For the purpose of sealing the box or crate a plate 40, having holes 41 and 42 therein, is secured to one of the end sections of the box, and a piece of wire is run through these holes and a hole 43 in one of the flanges

of the cover, and the ends are sealed together in any manner desired.

While the ends of the box have been shown and described as hinged to the bottom and the sides as slid in, I may hinge the sides and slide in the ends, in which case when the box is knocked down the ends will be placed on top of the sides or between them.

Referring to the modification, Fig. 5, which is designed to be substituted for some of the latches in the corners of the cover, 50 designates an angle-plate, one member thereof connected to the outer surface of an end section, and said plate provided with a socket 51 in the corner engaged by a pin 52, secured to the outer surface of a side section, and a socket 53, engaged by a pin 54, projecting from the interior of corner-pieces 55, whereby the cover and sides are held in place.

It being assumed that the box or crate is knocked down and packed, the operation of setting it up to form the box or crate is as follows: All the latches are pulled out and the cover removed, the end sections turned up, the sides slid into the space between the edges of the end pieces and their flanges. The cover is then placed on, the flanges fitting over the end and side sections, and the latches pulled out and brought opposite their respective sockets and released, whereupon they will be drawn into their sockets by the action of the springs thereon and lock the cover in place.

To knock down and pack the box or crate, the bolts are pulled out, the cover removed, the side sections slid out, the end sections turned down against the bottom, the side sections laid upon said end sections, and the cover is then placed on the flanges of the cover, fitting over the flanges on the bottom, and the bolts brought opposite their sockets and released, whereupon they will be drawn into their respective sockets by the action of the springs thereon and lock the cover in place.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A knockdown box or crate, comprising a bottom having flanges on its edges having bolt-sockets, sections hinged to the bottom adjacent opposite edges, guides on the ends thereof having bolt-sockets, the lower edges of said sections when turned up adapted to come squarely against the bottom, and the inner surfaces of said sections when turned down adapted to come flatly against the bottom, sections adapted when the first-mentioned sections are turned up to be slid into the guides on the ends thereof, and when said sections are turned down to lie flatly on top thereof, a cover having end flanges adapted to fit over the sections when the parts are set up and to fit over the flanges on the bottom when the parts are packed, and reciprocal rotatable spring-pressed bolts on the cover adapted when the parts are set up to engage the bolt-sockets in the guides, and when the parts are packed to engage the bolt-sockets in the flanges on the bottom, substantially as described.

2. A knockdown box or crate, comprising a bottom having flanges on its edges having bolt-sockets, sections hinged to the bottom adjacent opposite edges, guides on the end thereof having bolt-sockets, the lower edges of said sections when turned up adapted to come squarely against the bottom, and the inner surfaces of said sections when turned down adapted to come flatly against the bottom, sections adapted when the first-mentioned sections are turned up to be slid into the guides on the ends thereof and when said sections are turned down to lie flatly on top thereof, a cover having end flanges adapted to fit over the sections when the parts are set up and to fit over the flanges on the bottom when the parts are packed, stationary bolts on one end of the cover and reciprocal rotatable bolts on the other end, adapted when the parts are set up to engage the bolt-sockets in the guides and when the parts are packed to engage the bolt-sockets in the flanges on the bottom, substantially as described.

3. A knockdown box or crate, comprising a bottom having flanges on its edge having bolt-sockets, sections hinged to the bottom adjacent opposite edges and having sockets at each end on opposite sides thereof, guides on the ends of said sections having bolt-sockets, the lower edges of said sections when turned up adapted to come squarely against the bottom, and the inner surfaces of said sections when turned down adapted to come flatly against the bottom; sections having clamping-plates at each end adapted to engage the sockets on each end of the first-mentioned sections when said sections are slid into the guides thereon, said last-mentioned sections adapted to lie flatly on the first-mentioned sections when the parts are packed, a cover having end flanges adapted to fit over the sections when the parts are set up and to fit over the flanges on the bottom when the parts are packed, and reciprocal rotatable spring-pressed bolts on the cover adapted when the parts are set up to engage the bolt-sockets in the guides and when the parts are packed to engage the bolt-sockets in the flanges on the bottom, substantially as described.

4. A knockdown box or crate, comprising a bottom having flanges on its edge having bolt-sockets, sections hinged to the bottom adjacent opposite edges and having sockets at each end on opposite sides thereof, guides on the ends of said sections having bolt-sockets, the lower edges of said sections when turned up adapted to come squarely against the bottom, and the inner surfaces of said sections when turned down adapted to come flatly against the bottom, sections having clamping-plates at each end adapted to engage the sockets on each end of the first-mentioned sections when said sections are slid into the guides thereon, said last-mentioned sections adapted to lie flatly on the first-mentioned sections when the parts are packed, a cover having end flanges adapted to fit over the sections when the parts are set up and to fit over the flanges on the bottom when the parts are packed, stationary bolts on one end of the cover and reciprocal rotatable bolts on the other end, adapted when the parts are set up to engage the bolt-sockets in the guides and when the parts are packed to engage the bolt-sockets in the flanges on the bottom, substantially as described.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

JOHN F. REUL.

Witnesses:
F. W. GEBHARDT,
C. A. RICH.