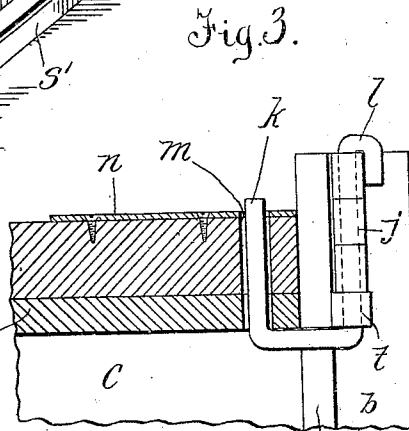
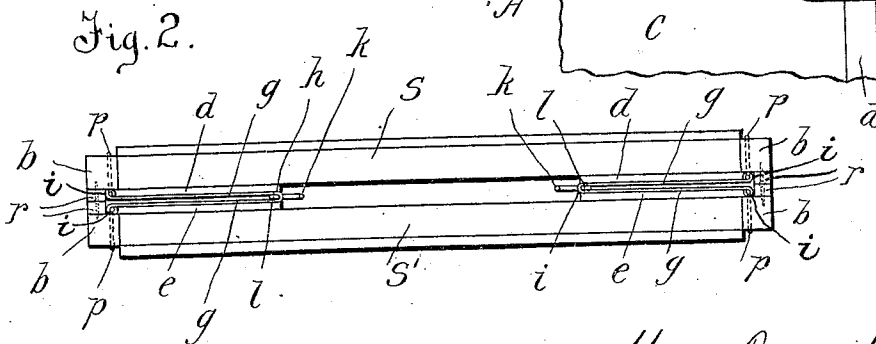
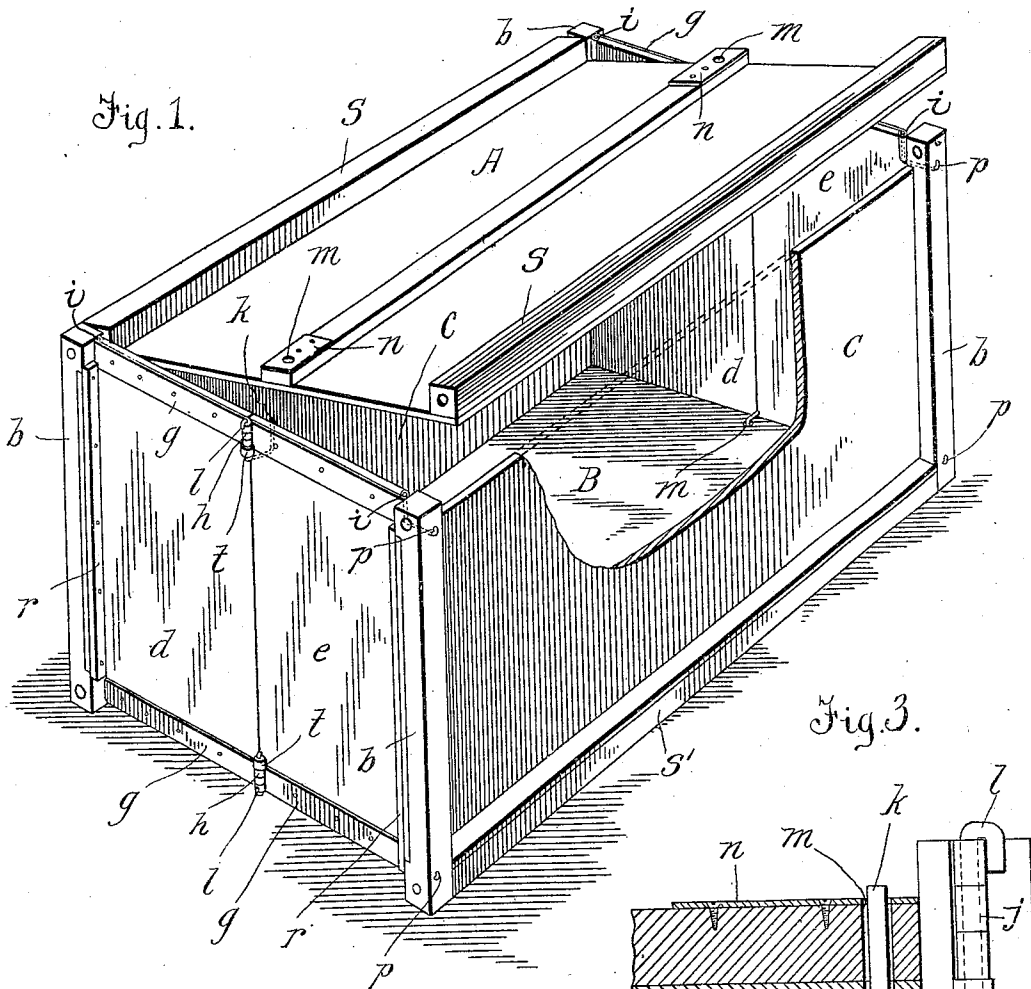


H. L. GULLINE.
FOLDING BOX.
APPLICATION FILED JULY 23, 1906.

940,009.

Patented Nov. 16, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY LAWRENCE GULLINE, OF GRANBY, QUEBEC, CANADA.

FOLDING BOX.

940,009.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed July 23, 1906. Serial No. 327,378.

To all whom it may concern:

Be it known that I, HENRY LAWRENCE GULLINE, of Granby, Province of Quebec, Canada, have invented certain new and useful Improvements in Folding Boxes; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention has for its object to provide a box so constructed as to have transmitted to its stronger members any strain exerted upon its weaker members.

To this end the invention consists of the construction and arrangement of parts hereinafter described and illustrated in the drawings to which reference must be had for full comprehension of my invention and wherein similar reference characters indicate the same parts.

Figure 1 is a perspective view of a box constructed according to my invention; Fig. 2 is a side edge elevation of the box folded; and Fig. 3 is a detail view of one of the devices by which the members of the box are bound together.

My folding box or crate comprise top A bottom B, inwardly folding ends and corner posts *b* into which the sides *c* are countersunk and rigidly secured in place preferably by nails, the top being provided with longitudinal side bars *s* and the bottom with similar bars *s'*. The ends each comprise two members *d* and *e* hinged together and to the posts *b* by devices which form parts of the means for bracing the box, these ends being adapted to fold inwardly between the sides.

The combined hinging and bracing means comprise two pairs of strap hinges the leaves *g* of which are each formed with knuckles *h* and *i* at the opposite sides thereof, one at each end, the knuckles *h* being connected by pins each of which is bent to have its middle portion present the pintle proper *j* and one end present a pin *k*; its opposite end *l* is turned back upon itself and over the hinge to constitute a projection by which the pin can be turned in the hinge knuckles; the pintles of these bent pins pivotally connecting the knuckles *h*, the pins *k* projecting through holes *m* in the top and bottom of the box, and the ends *l* being located outside of the ends of the box or crate, while washers *t* constitute distance pieces and retain the pins in place.

The knuckles *i* at the opposite or outer ends of the strap hinges are pivotally connected to the corner posts by pintles *p* bent

at right angles and driven through the ends of the said corner posts and such pins have their ends clenched. The devices constituted by these bent pins have a certain amount of resiliency.

A pair of bars with their ends reinforced by strengthening plates *n* and perforated as at *m*, receive the ends of the pins *k*, the said bars lying along the middle of the top and bottom, and are secured rigidly in place.

In order to strengthen the joint between the sides *c* and corner posts a series of filler or buffer bars *r* are secured to the posts over the counter-sunk portions of the sides.

Internal strains exerted upon the sides of the box are taken care of by such sides which, owing to their strong connection to the posts, are comparatively strong, and similar strains exerted upon one of the ends will be transmitted through the pins *k* carried by that end and the bars *n* to the pins *k* carried by the opposite end and thence to the end edges of the top and bottom and the hinge leaves *g* which in turn transmit the said strains to the corner posts and consequently the sides; and internal strains exerted upon the opposite end will be similarly taken care of.

The filler or buffer bars bear upon one another when the box is folded and thus protect the folded ends, and the short loops *i* of the center hinge pintles are at the same time held between the pieces of the said ends and keep the pins *k* from obstructing the folding of the box.

The end hinge knuckles are caused to project inwardly in order to accommodate the pieces *d* and *e* of the ends while the center hinge knuckles project outwardly in order to allow the leaves to lie as closely as possible together without interfering when the box is closed.

The bottom of the box is connected pivotally to the bottom ends of the posts *b* at the diagonally opposite corners to the points where the cover A is connected, and in the same manner as such cover.

What I claim is as follows:—

1. In a folding box or crate comprising corner posts, sides secured rigidly to the posts, ends hinged to the said posts and each made in two pieces hinged together to fold inwardly, such last mentioned hinges being located midway the width of the box, and top and bottom hinged to the ends of the corner posts, the pintles of the said middle

hinges presenting pin portions parallel thereto and projecting through holes in the top and bottom of the box, such holes completely encircling the pins for the purpose
5 of bracing the folding ends.

2. In a folding box or crate comprising corner posts, sides secured rigidly to the posts, ends hinged to the said posts and each made in two pieces hinged together to fold
10 inwardly, such last mentioned hinges being located midway the width of the box, and top and bottom hinged to the ends of the corner posts and each having a bar with perforated ends secured along its middle, the
15 pintles of the said middle hinges presenting pin portions parallel thereto and projecting through holes in the top and bottom, and through the perforations of the bars, such
20 holes and perforations completely encircling the pins for the purpose of bracing the said folding box.

3. In a folding box or crate comprising sides, ends constructed to fold, and top and bottom, hinges connecting together the parts
25 of each folding end and presenting pins pro-

jecting through holes in the top and bottom when the box is closed, and the said pins having projections adapted to be acted upon by the folded ends for the purpose of positioning the said pins between the members
30 of the box when the latter is folded.

4. In a folding box or crate comprising sides, ends constructed to fold, and top and bottom, hinges connecting together the parts
35 of each folding end and presenting pins projecting through holes in the top and bottom when the box is closed and the said pins having projections adapted to be acted upon by the folded ends and distance pieces retaining the said pins in place for the purpose
40 of positioning the said pins between the members of the box when the latter is folded.

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

HENRY LAWRENCE GULLINE.

Witnesses:

WILLIAM P. McFEAT,
FRED J. SEARS.