

Aug. 11, 1953

L. D. YOUNG

2,648,486

CARDBOARD BOX

Original Filed Jan. 5, 1949

Fig. 1.

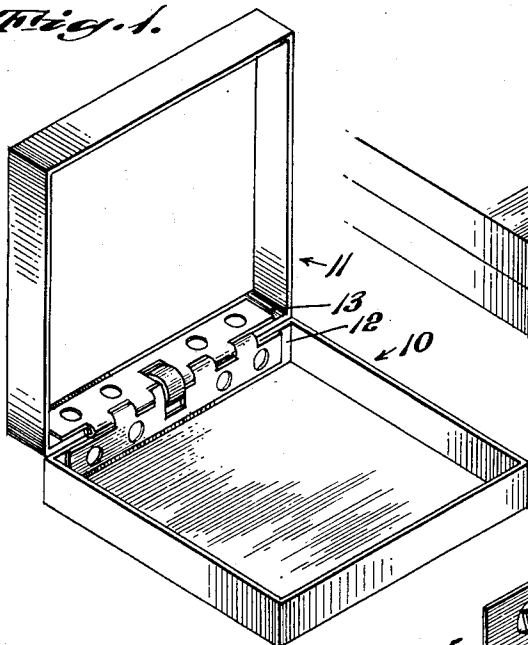


Fig. 2.

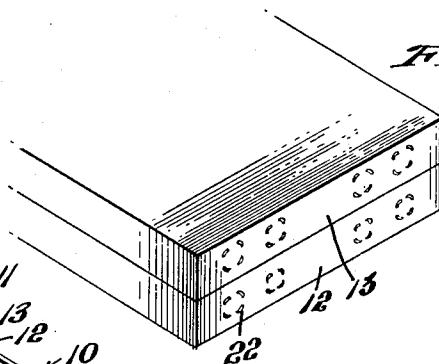


Fig. 3.

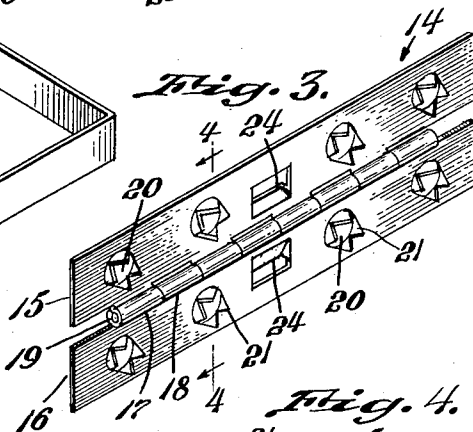


Fig. 5.

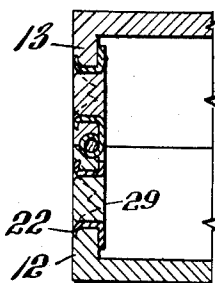


Fig. 6.

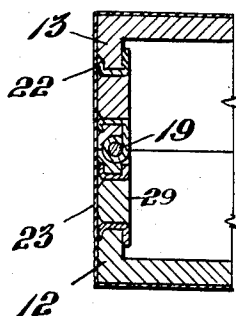


Fig. 4.

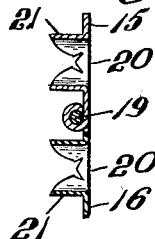
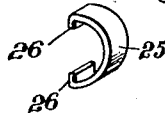


Fig. 7.



INVENTOR.
Louis Douglas Young
BY
Parlow & Parlow
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,648,486

CARDBOARD BOX

Lewis Douglas Young, Providence, R. I., assignor
to Douglas Young, Inc., a corporation of Rhode
Island

Continuation of application Serial No. 69,301,
January 5, 1949. This application March 23,
1953, Serial No. 343,922

4 Claims. (Cl. 229-44)

1

This application is a continuation of applica-
tion Serial No. 69,301, filed January 5, 1949, now
abandoned.

This invention relates to a cardboard box in
which a spring hinge joins the body and cover 5
sections of the box together.

One of the objects of the invention is to provide
a light weight or thin hinge and a light weight or
thin box and by addition of the hinge to the box
stiffen both along the connection.

Another object of the invention is to provide a
metal hinge on a cardboard box which may be
attached without disfiguring the outer surface of
the box to an extent which will require a paper
cover over the outer surface after the hinge is in
place.

Another object of the invention is to provide
attaching means for the hinge so as to avoid ugly
projections which have heretofore been in use
and show from the outside of the box.

Another object of the invention is to provide a
spring hinge on a cardboard box which will give
more snap of the cover in moving from open to
closed position.

With these and other objects in view, the in-
vention consists of certain novel features of con-
struction, as will be more fully described and par-
ticularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a perspective view of the cardboard
box with my hinge in place with the cover shown
in open position;

Figure 2 is a perspective view of a fragmental
portion of the box showing the back of the box
when in closed position;

Figure 3 is a perspective view of the hinge with
the spring detached;

Figure 4 is a section on line 4-4 of Figure 3;

Figure 5 is a sectional view through the box
showing the hinge in place on the box;

Figure 6 is a view similar to Figure 5 illustrat-
ing a paper cover as placed over the outside sur-
face of the box to cover its hinge.

Figure 7 is a perspective view of the spring
which is attached to the hinge.

In proceeding with this invention I provide
from rather light weight stock a pair of metal
plates which have eyes rolled upon edges to be
hinged together. Each of the plates is provided
with a plurality of holes spaced lengthwise from
end to end, and from the edges of each of the
holes a plurality of prongs project, which prongs
may pass through the cardboard rear wall of the
box with their points bent over to clinch the back
or rear wall of the box and fasten the plate 55

2

thereto. The points of these projections are so
small that their protrusions through the rear wall
are relatively not unsightly and thus no cover
need be provided for the outer surface where the
prongs may be seen.

A spring is attached to these plates so as to
urge the plates one relatively to the other to move
the cover either to open or closed position de-
pending on the relative position of the plates.

With reference to the drawings, I have pro-
vided a body section 10 and a cover section 11
both of cardboard. The body section has a rear
wall 12 while the cover section has a rear wall 13.
When in closed position the edges of the rear
walls 12 and 13 are in abutting relation. In order
to maintain them in this relation one relative to
the other, I have provided a hinge which is desig-
nated generally 14 and shown in perspective in
Figure 3.

This hinge 14 comprises metal plates 15 and 16
which have eyes 17 and 18 rolled from the edges
throughout a major portion of their length and
which are positioned in alignment to receive a
pin 19 passing thru these eyes so as to
hingedly relate the plates 15 and 16. To attach
these plates to the rear walls of the sections 10
and 11, I have provided a plurality of holes 20 at
spaced points along the length of each of the
plates, and from the edges of the holes 20 projec-
tions 21 extend, each hole being generally circular
and having a plurality of such projections ex-
tending from the edge thereof and each projec-
tion being arcuate in cross section so as to stiffen
the same. Four such projections are shown as
provided about each hole in the drawings, but it
will be readily apparent that the number may be
varied as occasion may require. The projections
are evenly spaced about each hole.

The projections 21 are slightly outwardly flared
and are of such a length that they will protrude
thru the thickness of the rear walls 12 or 13 and
after protruding thru the walls they will be de-
flected outwardly from the center of the hole 20
by striking as shown at 22 in Figure 5 or 6 so as
to clinch the back wall securely drawing the plate
firmly against the inner surface of the back wall
and imbedding themselves in the outer surfaces
of the rear wall as shown in Figure 5 or 6; thus
but a very small area covered by the points of the
projections will be visible as shown in Figure 2.
I find that in many cases it is unnecessary to
cover the outer surface of the rear wall because
of the rather inconspicuous ends 22 as shown in
Figure 2. However, in some cases there is a
covering 23 of paper over the outer surface pro-

3

vided as in Figure 6. At the same time the wall is thickened in the holes as shown at 29.

Each of the plates 15 and 16 is provided with an opening which provides at one edge a lip 24 as seen in Figure 3, which may be deflected by being struck outwardly from the plane of the plate, and an arcuate spring 25 as shown in perspective in Figure 7 has its ends inturned as at 26 so as to engage these lips to regulate the movement of the cover in its movement to an open position just slightly beyond 90 degrees from its closed position as shown in Figure 1 where the end portions of the arc of the spring 25 tends to force the cover in an opening direction to the limit provided by the inturned ends 26 while after the cover is swung beyond approximately an angle of 45 degrees to the plane of the body, the spring ends swing the cover towards closed position and tend to hold the edge surfaces of the walls of the body and cover in abutting relation as shown in Figures 2, 5, and 6.

The two plates attached in hinged relation and complete with spring are attached to the body and cover sections at the same time by placing the same on an anvil and striking one hammer blow.

The above manner of fastening the hinges in position serves to very effectively attach the hinges and by having a plurality of points attached to hold the plates against the rear walls of the box, both the hinge and rear walls are stiffened to a substantial extent as one supports the other. The snap which is provided by reason of this stiffness is very much increased and the plates which are made of rather soft material become the desired stiffness after attached to the box.

I claim:

1. In a cardboard box a body section and a cover section, each section having vertically disposed rear walls with their edges abutting, a

4

metal plate extending along the inner surface of the rear wall only of each section, each plate having a plurality of holes along its length with a plurality of integral projections along the edge of each hole embedded in the rear wall over which the plate extends with the free ends of the projections deflected outwardly in a plurality of different directions and clinched over the outer surface of the rear wall of the section and firmly securing the plate to the section, said plates having their adjacent edges hingedly attached together, each of said plates having intermediate its length an opening providing a lip, an arcuate spring with inturned ends engaging said lips and urging said plates in an opening or closing direction depending on the relative position of the plates.

2. In a cardboard box as is claim 1 wherein the plates have their adjacent edges hingedly attached together throughout the major portion of their length.

3. In a cardboard box as in claim 1 wherein the projections along the edge of each hole are arcuate in cross section.

4. In a cardboard box as in claim 1 wherein each hole is generally circular and the projections along the edge of each hole are arcuate in cross section.

LEWIS DOUGLAS YOUNG.

References Cited in the file of this patent UNITED STATES PATENTS

Number	Name	Date
649,761	Saltzkorn	May 15, 1900
800,243	Popple	Sept. 26, 1905
1,430,029	Rhodes	Sept. 26, 1922
1,552,916	Farrington	Sept. 8, 1925
1,626,301	Rhodes	Apr. 26, 1927
2,174,430	Valentine	Sept. 26, 1939
2,206,918	Powell	July 9, 1940