To all whom it may concern:

Be it known that I, WILLIAM A. DUNLAP, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful improvements in Metallic Shipping-Cases, of which improvements the following is a specification.

My invention relates to metallic collapsible shipping cases, such, for example, as are illustrated and described in my pending application, Serial No. 822,862. It has been found desirable in some instances to have the interior configuration of the box such that no portion of the hinge projects within the planes of the side walls. This is particularly the case when the box is used for shipping articles packed in cartons or other packing receptacles having angular corners, and where a projection of the hinge within the planes of the side walls necessarily causes a space to intervene between the outer walls of the cartons and the inner walls of the metal packing case. A space thus formed may cause looseness in the packed contents, or the projecting hinges may abrade or otherwise injure such contents.

In the box illustrated in my above mentioned application the body portions of the side-wall hinges lie within the planes of the interior of the box, as is particularly shown in Figures 5 and 7. As distinguished from this construction, it is the object of my present invention to provide a hinge for the side-walls of the box, which hinge will lie entirely without the interior walls, but which will at the same time permit adjacent side-walls to lie in the same plane or parallel planes when the packing case is collapsed.

In the accompanying sheet of drawings, which form part of my specification, I have illustrated the preferred embodiment of my invention.

Fig. 1 is a perspective view of the case; Fig. 2 a transverse sectional view in which the hinges are shown to enlarged scale and portions of the side-walls broken away; Fig. 3 a view similar to Fig. 2, but showing the side-walls collapsed; and Fig. 4 a detail of a modified form of hinge.

The general arrangement and construction of the box may be such as is, fully shown and described in my above mentioned application. As shown in Fig. 1 of the drawings of my present application the box comprises side walls A and B, end walls C and D, cover E, and bottom F. The adjacent edges of the side and end walls are hinged together in a manner presently to be described, while the rear edge of the cover E is hinged to the upper edge of the wall B, and the front edge of the bottom F to the lower edge of the wall A, in the manner shown and described in my earlier application, or in any other suitable manner.

The material from which the box is made is preferably flat sheet metal, although other materials and other forms of sheet metal may be used, if desired.

The hinges for the corners of the box are so constructed that, when the box is in a position for being packed, the body portion of the hinges will lie without the angle formed between the general planes of adjoining wall members, as is illustrated in Fig. 2, but also of such construction that, when the box is collapsed, the interior faces of adjacent wall members may either lie in a single plane, or in parallel planes. In Fig. 3 the interior faces of the wall members B and C lie in a single plane, while the interior faces of the members A and C lie in parallel planes. It will be understood that, by collapsing the box in the opposite direction, the faces of A and C will lie in a single plane while those of B and C will lie in parallel planes. Pintle hinges are used at the corners of the box. Considering particularly the hinge between the walls A and D, for purposes of description, the pintle lies, with relation to the inside of the box, disposed exteriorly of the wall D and interiorly of the projection or general plane of the wall A. As shown, a plurality of slots 2 are formed near the edges of adjoining side and end members, the slots in one member alternating with the strips 3 between adjacent slots of the adjoining member. These strips are bent around the pintle 1, and the continuous edge 4 of the sheet is spot welded or otherwise secured to the sides and ends of the box. The strips 3 and edge 4 may extend around the pintle in such manner as to be connected to the outer face of the walls, as seen in Figs. 2 and 3, or they may be bent in the opposite direction and fastened to the inner faces thereof, as
shown in Fig. 4. In the event of the edges being secured to the inside of the box, the walls are offset to receive such edges, thus maintaining the inner faces plane. By providing the vertical walls of collapsible boxes with hinges of the character thus shown and described, no portion of the hinge will project within the planes of the inner faces of its walls, the result being that, when articles, packed in cartons, are shipped in the box, there will be no unoccupied space affording prejudicial looseness thereof, or no points or surfaces liable to abrade or otherwise injure such contents.

I claim as my invention:

1. In a sheet metal collapsible packing case, the combination of vertical wall members, and vertical hinges between adjacent edges of said members, each hinge comprising a pintle disposed on the outside of one wall member and on the inside of the general plane of the adjacent wall member, the hinged edges of the wall members being continuous, and the body portions forming the hinge being provided with a plurality of alternating closed slots and with intervening alternating strips bent around said pintle.

2. In a metallic packing case, the combination with vertical wall members hinged together at the corners of the case, of a top member hinged to the upper edge of one vertical wall member, and a bottom member hinged to the lower edge of the opposite vertical wall member, each of the vertical hinges between the wall members comprising a pintle disposed on the outside of one wall member and on the inside of the general plane of the adjacent wall member, the hinged edges of the adjoining wall members being continuous, and the body portions forming the hinges being provided with a plurality of alternating closed slots and with intervening alternating strips bent around said pintle.

In testimony whereof I have hereunto set my hand.

WILLIAM A. DUNLAP.

Witnesses:
P A U L N. CRITCHLOW,
F R A N C I S J. T O M A S S O N.

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