Dec. 29, 1925. 1,568,033

H. P. BEECHER

SHIPPING RECEPTACLE

Filed Nov. 13, 1920 2 Sheets-Sheet 1

Fig. 1

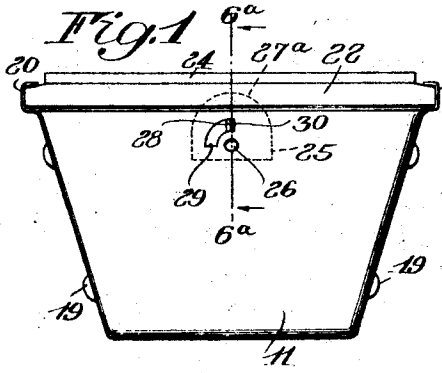


Fig. 2

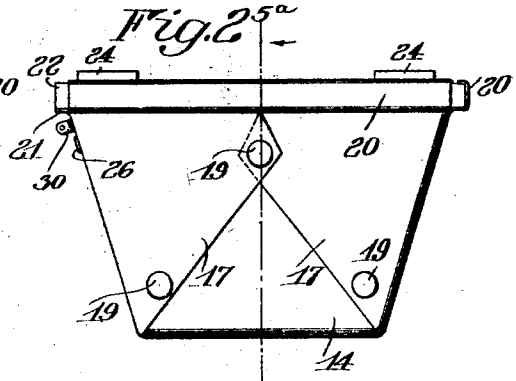


Fig. 3

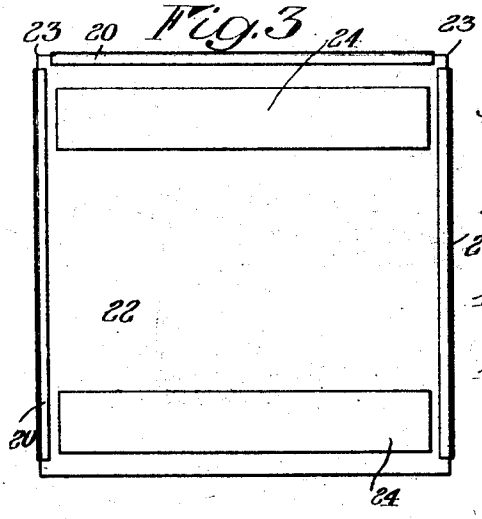


Fig. 4

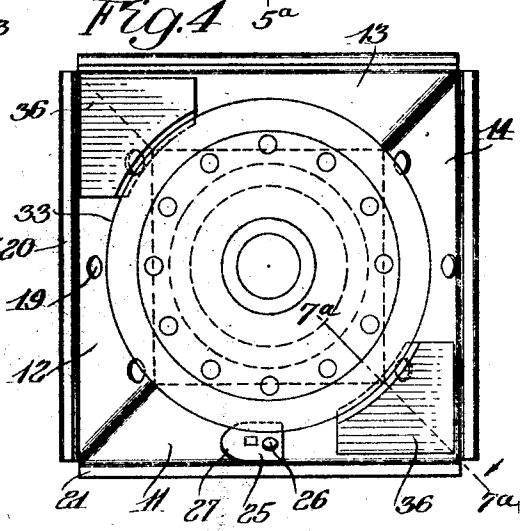


Fig. 5

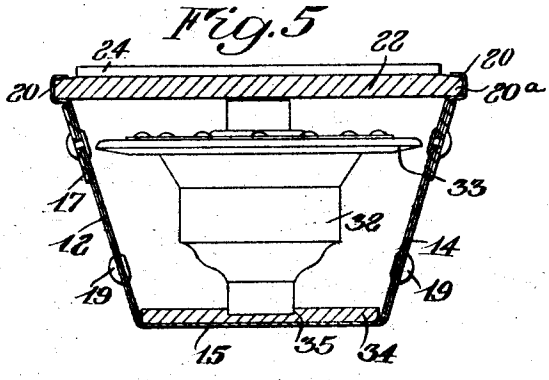
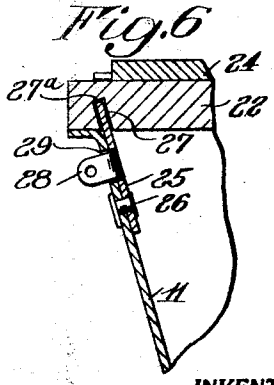


Fig. 6



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SHIPPING RECEPTACLE

Filed Nov. 13, 1920 2 Sheets-Sheet 2

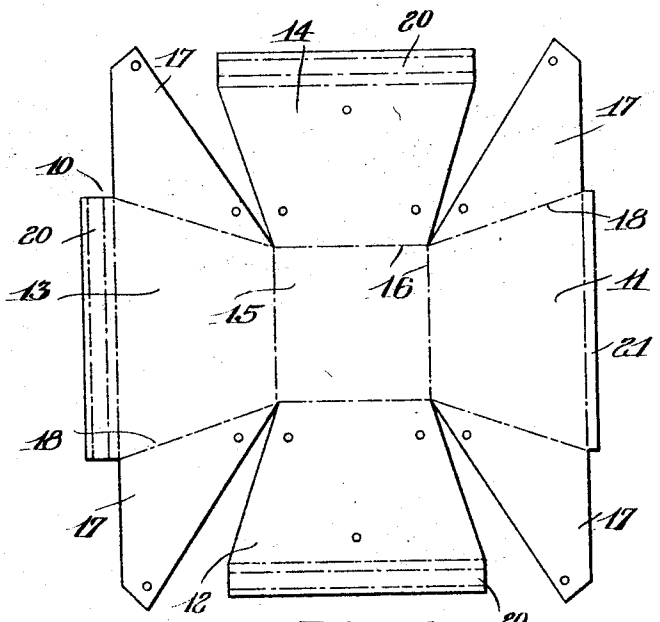


Fig. 9

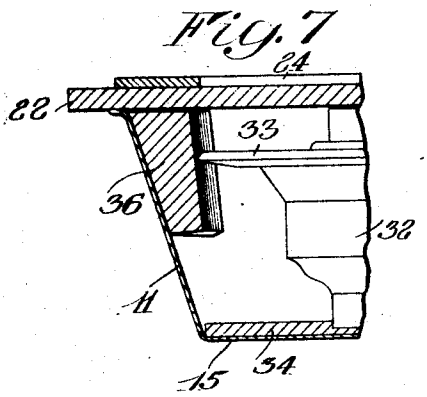


Fig. 7

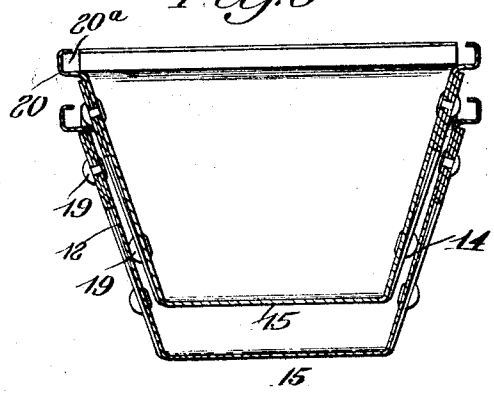


Fig. 8

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UNITED STATES PATENT OFFICE.

HERBERT P. BEECHER, OF ROCHESTER, NEW YORK.

SHIPPING RECEPTACLE.

Application filed November 13, 1920. Serial No. 423,900.

To all whom it may concern:

Be it known that I, HERBERT P. BEECHER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Shipping Receptacles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference numerals marked thereon.

This invention has to do with receptacles and more particularly with those adapted to serve as shipping receptacles or cases for containing articles of inconvenient shape or considerable weight or which require protection against injury in handling, the chief object of the invention being to provide a strong and durable receptacle of a practical form affording complete protection for the article, while at the same time facilitating the handling of the receptacle in transit, and permitting convenient packing or stacking of a quantity of such receptacles when emptied after use in a small space for return to the shipper for re-use. To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a front elevation of a receptacle embodying the present invention.

Figure 2 is a side elevation of the same.

Figures 3 and 4 are top plan views with the cover or closure in place and removed respectively.

Figure 5 is a sectional elevation on the line 5^a—5^a of Figure 2.

Figure 6 is a fragmentary sectional view on the line 6^a—6^a of Figure 1.

Figure 7 is a similar view on the line 7^a—7^a of Figure 4.

Figure 8 is a view in sectional elevation showing two of the receptacles in nested arrangement, and

Figure 9 is a view showing in flat condition the sheet metal blank from which the receptacle is formed.

Similar reference characters throughout the several views indicate the same parts.

The embodiment of the invention herein shown and described is intended merely by way of illustration of the principles involved and a preferred practical application thereof, being capable of various modifications in the details of construction employed. The invention is applied in the present instance to the provision of receptacles particularly adapted for use in the shipment of the so-called "differential" gearing used in the power transmitting systems of automobiles. Such articles are not only unwieldy in shape and of considerable weight and therefore inconvenient to handle, but require protection against injury by impact with other objects during shipment. The invention comprises a substantial receptacle for use in shipping these articles, formed mainly of sheet metal, having advantages of construction and arrangement which provide adequate protection for the article while at the same time facilitating the handling thereof, and the compact packaging and return of the empty receptacles to the shipper for repeated use.

Referring to the drawings and first to Figure 9 thereof, there is shown a blank, preferably of sheet metal, indicated generally at 10, of substantially rectangular shape with incisions made therein at the four corners to provide four side portions 11 to 14 inclusive and a bottom portion 15, the top of the metal portion of the receptacle being left open. The side portions are folded upwardly along the broken lines 16, first the sides 12 and 14 and subsequently the sides 11 and 13, the latter sides having wing portions 17 which are bent inwardly along the broken lines 18 so as to overlap the sides 12 and 14, and also each other at the extremities of the wings. Where the latter overlap each other and the sides 12 and 14, the portions are secured together, preferably, by means of rivets 19 having, exteriorly of the receptacle, rounded projecting heads serving a purpose presently to be described. As indicated in the drawings, the sides are so folded and disposed as to taper inwardly from top to bottom, thus giving to the receptacle, for purposes which will later appear, the shape substantially of a truncated square pyramid. The sheet metal employed is sufficiently heavy to withstand an impact or pressure of considerable force.

For the purpose of retaining the closure or cover over the open top of the receptacle, the sides of the latter, with the exception of side 11 which forms the front side, are formed at their outer or top edges

with leaf portions 20 which are folded along the broken lines shown in Figure 9, first laterally in an outward direction, thence upwardly and then inwardly, forming guideways or grooves 20ª in which the closure is adapted to slide. On the sides of the receptacle where the wings 17 are overlapped, it is to be noted that the upper edges of these wings abut from below and support or brace the adjacent cover retaining portions 20 to stiffen the structure. The front side 11 has a leaf 21 which is turned outwardly to provide on that side also a substantial bearing surface for cover. The cover or closure is shown at 22 and preferably comprises a rectangular plate or board of wood, or other material having cushioning qualities, adapted to be inserted in the ways or grooves 20ª at the front of the machine and slid into place to completely close the receptacle. As indicated in Figures 3 and 4, the cover retaining means or groove portions 20 are discontinued or cut away at the corners of the receptacle so that the corners of the rectangular closure are arranged to project laterally beyond the metal portions of the receptacle to form shock absorbing or cushioning surfaces. To the same end the upper side of the closure is provided with projections or cleats 24 projecting above the metal portions at the top of the receptacle, so that when the latter is disposed with the closure side down it rests upon the wooden cleats which form additional shock absorbing or cushioning surfaces for a purpose which will more fully appear hereafter.

For securing the cover in closed position on the receptacle there is provided on the inside of the front wall 11 thereof adjacent the top a locking plate 25 rotatably supported on the receptacle wall by an eccentrically disposed rivet or other means 26, the side 27 of the plate having the greater radius being rounded as best shown in Figure 4. The under surface of the cover is provided in corresponding position with a kerf 27ª with which the edge 27 of plate 25 is adapted to be engaged when in the position shown in Figure 1. For rotating plate 25 to engage the kerf and lock the cover in position and for releasing the cover for removal, there is struck up from the plate a lug 28, Figures 1 and 6, turned outwardly and movable in an arcuate slot 29 in the receptacle wall. In cutting the slot 29 a portion thereof is preferably struck up at one end to form a lug 30 adjacent the locking position of lug 28, and both lugs may be perforated as shown to provide for the attachment of means for securing them together with lug 28 in locking position.

Figure 5 shows the receptacle with the contained article or differential 32 with its bevel gear 33 in position therein, and for securing the article against movement in the receptacle the latter is preferably provided with a removable bottom plate 34, of wood or other suitable material, having a depression 35 therein receiving the lower end of the article. To hold the upper end of the latter there are preferably provided wedges 36, of wood or other suitable material, constructed to fit in the corners of the receptacle and having their faces adjacent the gear 33 cut to conform to the shape of the latter so the wedges may be driven between the sides of the receptacle and the article at two or more corners of the latter, thus securely holding it against movement and possible injury during shipment. The pyramidal shape of the receptacle, conforming to the shape of the article, conserves space and facilitates the securing of the article therein, as by the wedges described.

As is apparent from the drawings, the heaviest portions of the differential and the receptacle are adjacent the top of the latter so that when the receptacle with the article therein is dropped on and slides down a metal lined chute, as is frequently the practice, for delivery from one elevation to another, the receptacle tends to rest top downward on its cover portion so that the projecting cleats and corners of the latter contact with the metal surface of the chute and serve to cushion the shocks received and to prevent the receptacle from sliding too rapidly down the chute, as would occur in the case of contact of metal on metal.

The pyramidal shape of the receptacle not only adapts it to the shape of the contained article so as to economize space, but likewise makes possible the packing or nesting of a plurality of the receptacles together in small space, as shown in Figure 8, so that when emptied they may be conveniently disposed for return to the shipper for repeated use. When placing the receptacles in the nested relation shown, the closure and interior securing wedges, as also the wooden bottom plate if desired, may be removed, and separately assembled, or the shipper may replace such auxiliary parts. This feature, which makes feasible the salvage and return of the receptacles effects of course the saving of a material item of expense. As already stated the sides of the receptacle are fastened together by rivets having projecting heads which latter serve to space the walls of the adjacent receptacle in nested relation due to the engagement of the rivet heads with the metal walls and prevent the receptacles from becoming jammed or wedged together so that they may be readily separated when again put to use.

In the use of the receptacle the bottom plate 34 is first inserted, and the article to

be shipped is then placed in the receptacle and the securing wedges 36 forced into place, so that these, together with the bottom plate, securely hold the article against movement. The closure or cover is then inserted and locked in closed position, after which the receptacle is ready for shipment. As apparent from the drawings the latter is simple and practical in construction and well adapted to fully protect the contained article against injury. In addition the receptacle is so constructed and arranged as to facilitate the handling of the same, and also to provide for the assembly of a plurality of the receptacles into small space, after they have been used, for return to the shipper and reused in this manner for an indefinite number of times.

I claim as my invention:

1. A shipping receptacle comprising a blank of sheet metal cut and folded to form the sides and bottom of the receptacle with laterally extended closure retaining portions at the top edges of the sides and overlapping portions on opposite ones of said sides arranged to support said laterally extended portions, a closure plate of cushioning material removably carried by said retaining means and arranged to project beyond the top and adjacent corners of the receptacle, and article securing means within the receptacle.

2. A shipping receptacle comprising a blank of sheet metal cut and folded to form inwardly tapering sides and a bottom for the receptacle with overlapping metal portions on opposite ones of said sides secured together by rivets having projecting heads, closure retaining means on the upper edges of said sides, and a closure of cushioning material removably carried by said retaining means and arranged to project beyond the metal portions at the top and corners of the receptacle.

3. A shipping receptacle comprising a blank of sheet metal cut and folded to form inwardly tapering sides and a bottom for the receptacle with overlapping metal portions on opposite ones of said sides secured together by rivets having projecting heads, closure retaining means on the upper edges of said sides, a closure of cushioning material removably carried by said retaining means and arranged to project beyond the metal portions at the top and corners of the receptacle, locking means for holding the closure against removal, and securing means in the receptacle for supporting the contained article against movement.

HERBERT P. BEECHER.