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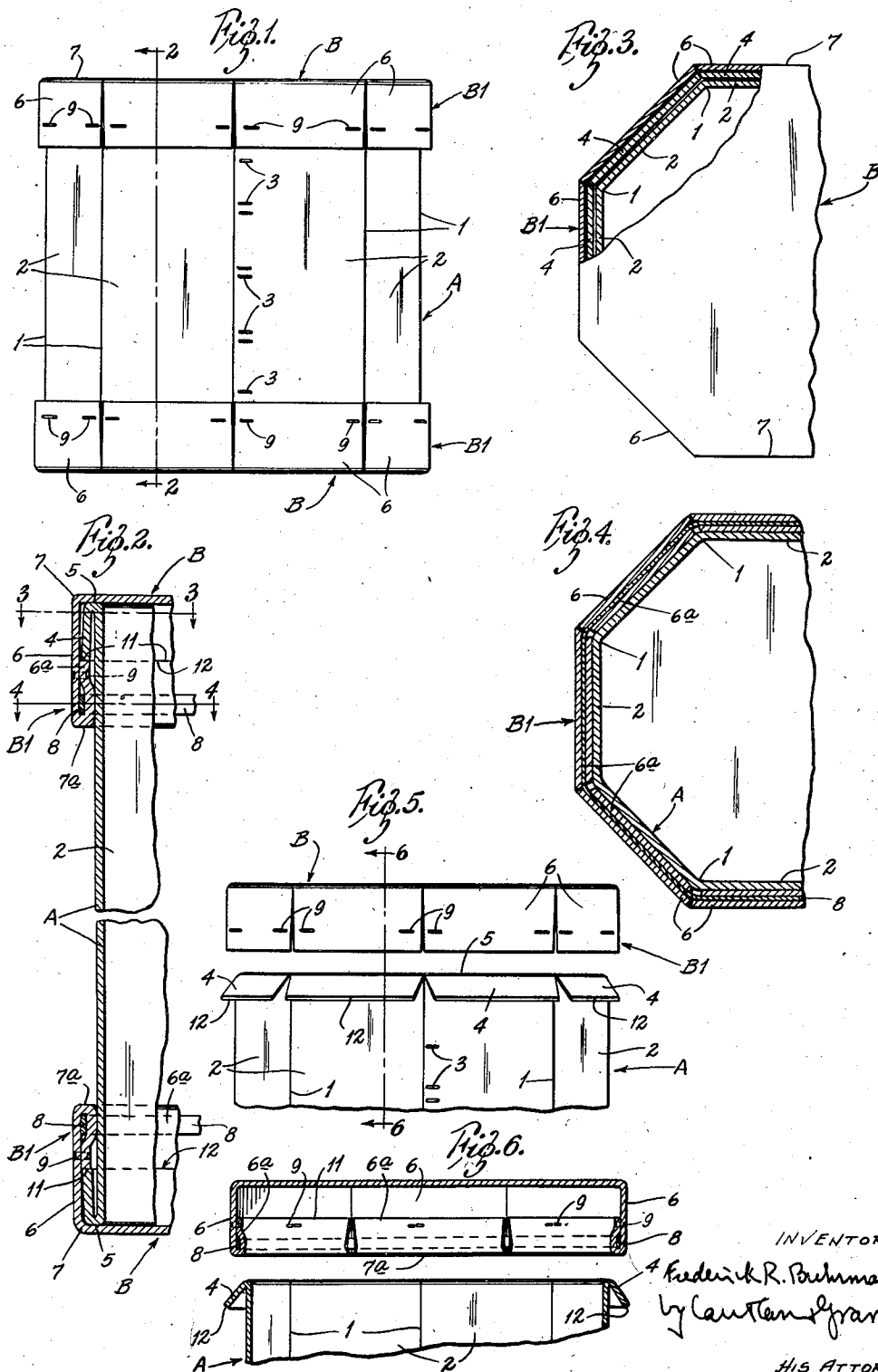
F. R. BUHRMASTER

2,410,148

HEAVY DUTY PAPER SHIPPING CARTON HAVING INTERLOCKING END CLOSURE

Filed July 13, 1944

2 Sheets-Sheet 1



Oct. 29, 1946.

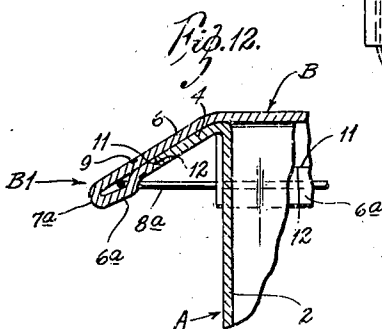
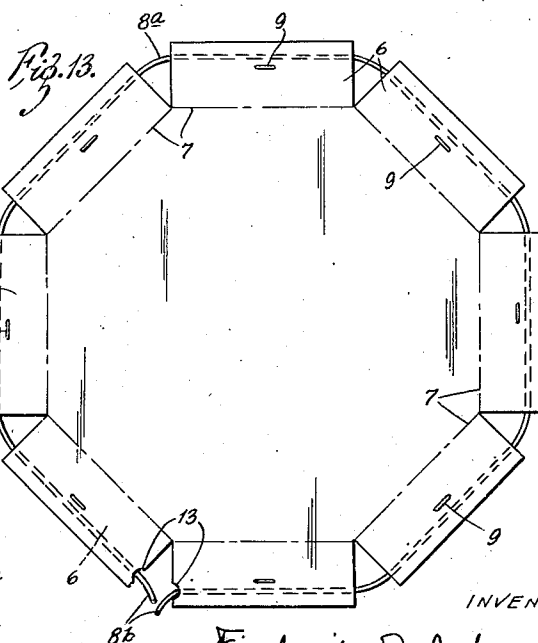
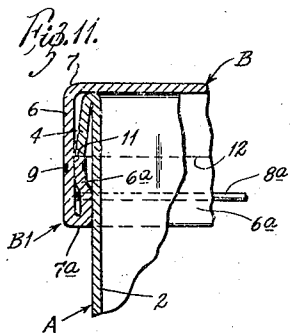
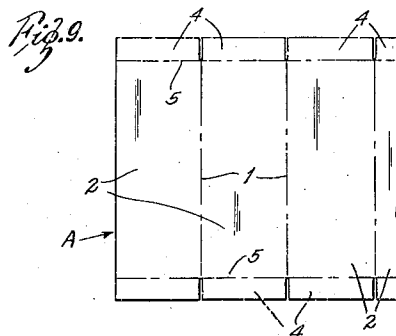
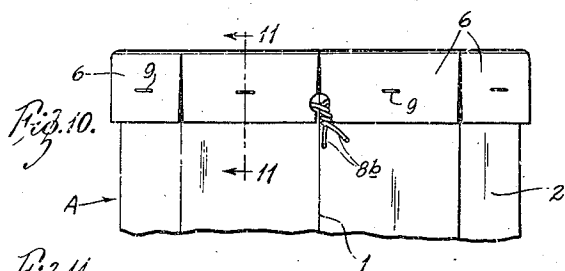
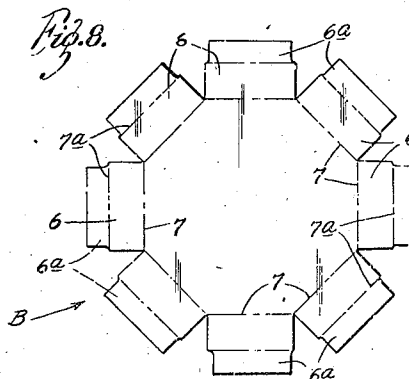
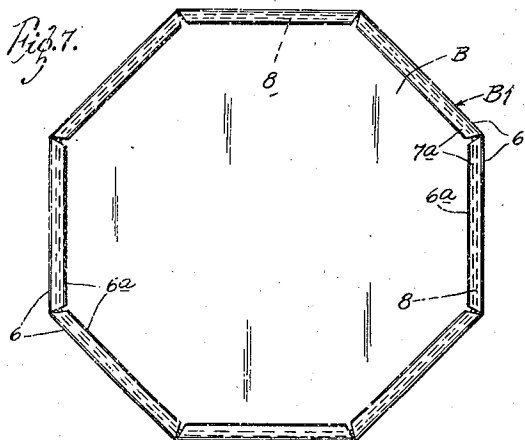
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HEAVY DUTY PAPER SHIPPING CARTON HAVING INTERLOCKING END CLOSURE

Filed July 13, 1944

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,410,148

HEAVY-DUTY PAPER SHIPPING CARTON
HAVING INTERLOCKING END CLOSUREFrederick R. Buhrmaster, Webster Groves, Mo.,
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Application July 13, 1944, Serial No. 544,685

10 Claims. (Cl. 229-47)

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This invention relates to containers, particularly heavy duty shipping cartons of the kind shown in Beaman Patent No. 2,214,220 dated September 10, 1941 wherein the tubular body and end closures of the carton have side flaps that are held in interlocking engagement by an exterior encircling band. The principal object of the present invention is to simplify the cover locking arrangement of such cartons and the operation of attaching the cover to the body. The invention consists in a carton having a tubular body with end flaps that are adapted to be folded against the outside face thereof and end closures with rim flaps that overlap the folded body flaps and have rebent end portions that are disposed in endwise abutting relation to the free ends of said folded body flaps and thus prevent endwise removal of the end closures from said body. The invention also consists in the means for locking the rebent end closure flaps in rim forming relation; and it also consists in the carton closure and in the parts and combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this specification, and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a side elevational view of a shipping carton embodying my invention,

Fig. 2 is an enlarged partial vertical sectional view on the line 2-2 in Fig. 1,

Fig. 3 is a fragmentary end elevational view of the carton, the carton being shown partially in horizontal cross-section on the line 3-3 in Fig. 2,

Fig. 4 is a fragmentary cross-sectional view on the line 4-4 in Fig. 2,

Fig. 5 is a side elevational view showing the body and end closure before assembly,

Fig. 6 is a vertical sectional view of said body and end closure on the line 6-6 in Fig. 5,

Fig. 7 is an inner end view of said end closure,

Fig. 8 is a plan view of the cover blank,

Fig. 9 is a partial elevation of the body blank,

Fig. 10 is a partial side elevational view of a shipping container provided with an end closure of modified form,

Fig. 11 is an enlarged fragmentary vertical sectional view on the line 11-11 in Fig. 10,

Fig. 12 is a view similar to Fig. 11, showing the positions of the cooperating end closure and body tabs before said tabs are drawn inwardly into locked position; and

Fig. 13 is a plan view of the modified end closure, the flaps thereof in the position shown in Fig. 12.

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My invention is shown embodied in a heavy duty shipping carton of the type shown in Beaman Patent No. 2,214,220. The carton shown in Figs. 1 to 9, inclusive, includes a tubular body A and preformed slip covers or closures B for the ends thereof, all made of corrugated board, fiberboard or other bendable material. The tubular body A is divided by longitudinal creases or scores 1 into side panels 2 and is made from a flat blank whose ends are overlapped and permanently secured together, preferably by staples 3. Each side panel 2 has at each end thereof a projecting flap 4 adapted to be folded into proximity with the outside face of said panel, a score line 5 being provided to facilitate folding of said flap.

Each end closure B is of a shape corresponding to the shape of the paneled body member A and has side marginal flaps 6 corresponding in number to the body flaps 4. The side marginal flaps 6 of the end closure B are bent along score lines 7 at right angles to the body portion thereof and have extensions or continuations 6a that are marked off by means of wide scores or creases 7a and folded or rebent on their inner sides. The bent side marginal flaps 6 are permanently connected together in end to end relation around the periphery of the end closure B to form a rigid rim B¹ therefor. The connecting means for the bent rim forming flaps 6 preferably comprises a closed circular band or hoop 8 of metal or other suitable material which lies within the folded portions 6a of said flaps and extends from one flap to another and holds them in rim forming relation. The rebent portion 6a of the end closure flaps 6 are rigidly and permanently secured thereto preferably by means of staples 9; and these staples are located between the retaining ring or hoop 8 and the free longitudinal edges of said rebent portions of said end closure flaps and thus serve to retain said ring or hoop within the rim portion B¹ of the end closure B.

By the arrangement described, when the end closure B is forced over the end of the body A, the outstanding flaps 4 on said end of said body are bent inwardly by the rim B¹ of said closure against the outside face of said body. Continued endwise movement of the end closure B causes the rebent portions or extensions 6a of the rim forming flaps 6 thereof to ride over the folded body flaps 4 which yield inwardly with said body and then spring outwardly across the ends of said rebent portions of said rim forming flaps. By this arrangement, the internal shoulder 11 formed in the rim B¹ of the end closure B by the rebent portions 6a of the rim forming flaps 6

thereof abuts against the external shoulder 12 formed on the body A by the folded end flaps 4 thereof, thus permanently locking said end closure to said body.

The hereinbefore described construction has several important advantages. It is simple and economical and permits the end closure B of the carton to be quickly and easily mounted on and securely locked to the body A. The continuous hoop or band 8 in the rim B¹ of the end closure B serves to rigidly hold the bent flaps 6a of said end closure in end to end rim forming relation, whereby said rim is rigid enough to force the side panels 2 and the end flaps 4 thereof inwardly when said end closure is telescoped over the end of said body and to prevent lateral disengagement of the abutting shoulders 11 and 12 after said side panel flaps snap over the rebent portions 6a of said end closure flaps.

In the modified form of end closure shown in Figs. 10 to 13, inclusive, the band for holding the side marginal flaps 6 of the end closure B in rim forming relation is in the form of a wire 8a that is located in the folded portions 6a of said flaps with its two ends extending outwardly through notches 13 provided therefor in the meeting ends of two adjacent flaps. With this form of retaining band, the end closure B is placed over the end of the body A with the free longitudinal edges 11 of the rebent portions 6a of the inclined end closure flaps 6 in edgewise abutting relation to the free ends 12 of the inclined body flaps 4, after which the wire 8a is tightened to swing the engaged end closure and body flaps inwardly alongside of the body panels 2. The cooperating flaps are then securely locked in such position by twisting together the exposed ends 8b of the wire 8a. By this arrangement, the end closure is locked tightly to the body but may be quickly and easily removed therefrom by cutting the locking wire 8a or untwisting the exposed twisted ends 8b thereof.

Obviously, the hereinbefore described carton construction admits of considerable modification without departing from the invention. Therefore, I do not wish to be limited to the precise arrangements shown and described.

What I claim is:

1. A carton comprising a tubular body and a closure for an open end thereof, said body having an external peripheral shoulder thereon adjacent to said end thereof, and said closure having a rim portion that surrounds said end of said body and has an internal shoulder disposed in abutting relation to the external shoulder thereof, said rim portion of said closure comprising a plurality of side marginal flaps on said closure bent into rim forming relation and having portions folded upon and secured directly to the inner sides of said bent flaps to form said internal shoulder, and means inclosed within the folded portions of said bent flaps without being directly secured thereto for holding them in such rim forming relation.

2. A carton comprising a tubular body and a closure for an open end thereof, said body having an external peripheral shoulder thereon adjacent to said end thereof, and said closure having a rim portion that surrounds said end of said body and has an internal shoulder disposed in abutting relation to the external shoulder thereof, said rim portion of said closure comprising a plurality of side marginal flaps on said closure bent into rim forming relation and having portions folded upon and secured directly to the inner sides of said bent flaps to form said in-

ternal shoulder, and a band infolded within said folded portions of said bent closure flaps for holding them in such rim forming relation.

3. A carton comprising a tubular body and a closure for an open end thereof, said body having an external peripheral shoulder thereon adjacent to said end thereof, and said closure having a rim portion that surrounds said end of said body and has an internal shoulder disposed in abutting relation to the external shoulder thereof, said rim portion of said closure comprising a plurality of side marginal flaps on said closure bent into end to end rim forming relation and thence rebent on their inner sides to form said internal shoulder, a band infolded within said rebent portions of said closure flaps for holding them in such rim forming relation, and means for securing said rebent portions directly to said closure flaps and for retaining said band therein.

4. A carton comprising a tubular body and a slip closure for an open end thereof, said body having an external peripheral shoulder thereon adjacent to said end thereof, and said closure having a rim portion with an internal shoulder adapted to ride over and seat back of said external shoulder when said closure is slipped over said end of said body, said rim portion of said closure comprising a plurality of side marginal flaps on said closure bent into rim forming relation and having portions folded upon and secured directly to the inner sides of said bent flaps to form said internal shoulder, and means located within said folded portions of said bent closure flaps without being directly secured thereto for permanently holding them in such rim forming relation.

5. A carton comprising a tubular body and a slip closure for an open end thereof, said body having an external peripheral shoulder thereon adjacent to said end thereof, and said closure having a rim portion with an internal shoulder adapted to ride over and seat back of said external shoulder when said closure is slipped over said end of said body, said rim portion of said closure comprising a plurality of side marginal flaps on said closure bent into rim forming relation and having portions folded upon and secured directly to the inner sides of said bent flaps to form said internal shoulder, and a closed band infolded in the folded portions of all of the bent flaps of said closure for permanently holding them in rim forming relation.

6. A carton comprising a tubular body and a closure for an open end thereof, said body having an external peripheral shoulder thereon adjacent to said end thereof, and said closure having a rim portion that surrounds said end of said body and has an internal shoulder disposed in abutting relation to the external shoulder thereof, said rim portion of said closure comprising a plurality of side marginal flaps on said closure bent into rim forming relation and thence rebent on their inner sides to form said internal shoulder, a band located within said rebent portions of said closure flaps for holding them together in such rim forming relation, and means for securing said rebent portions directly to said closure flaps between the ends thereof and said band, said band comprising a wire having its ends extending outwardly between two adjacent closure flaps and secured together.

7. A carton comprising a tubular body and a slip closure for an open end thereof, said body having a plurality of flaps at said end adapted to fold against the outer side face thereof to form

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an external peripheral shoulder thereon, and said end closure having a rim portion that surrounds said bent body flaps and an internal shoulder disposed in abutting relation to said external shoulder, said rim portion of said closure comprising a plurality of side marginal flaps on said closure bent into rim forming relation and thence rebent to form said internal shoulder, means for securing said rebent portions directly to said flaps, and a continuous band inclosed within the rebent portions of said flaps for holding them in such rim forming relation.

8. A carton comprising a tubular body and a slip closure for an open end thereof, said body having a plurality of flaps at said end adapted to fold against the outer side face thereof to form an external peripheral shoulder thereon, and said end closure having a rim portion that surrounds said bent body flaps and has an internal shoulder disposed in abutting relation to said external shoulder, said rim portion of said closure comprising a plurality of side marginal flaps on said closure bent into rim forming relation and thence rebent to form said internal shoulder, means for securing said rebent portions directly to said flaps, and a continuous band inclosed within the rebent portions of said flaps for holding them in such rim forming relation, said band

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comprising a wire having its ends extending outwardly between two adjacent closure flaps and detachably secured together.

9. A carton closure having a rim portion with an internal peripheral shoulder, said rim portion comprising a plurality of side marginal flaps on said closure bent into rim forming relation and thence rebent on their inner sides and rigidly secured directly thereto to form said internal shoulder, and means inclosed within the rebent portions of said flaps for holding them together in such rim forming relation.

10. A carton closure having a rim portion with an internal peripheral shoulder, said rim portion comprising a plurality of side marginal flaps on said closure bent into rim forming relation and thence rebent on their inner sides and rigidly secured directly thereto to form said internal shoulder, and a band located within the rebent portions of said flaps for holding them together in such rim forming relation, said band comprising a wire having its ends extending outwardly between two adjacent flaps, whereby said flaps are adapted to be drawn into rim forming relations by tightening said wire and locked in such relation by securing together the ends of the tightened wire.

FREDERICK R. BUHRMASTER.