

J. H. KILLION.

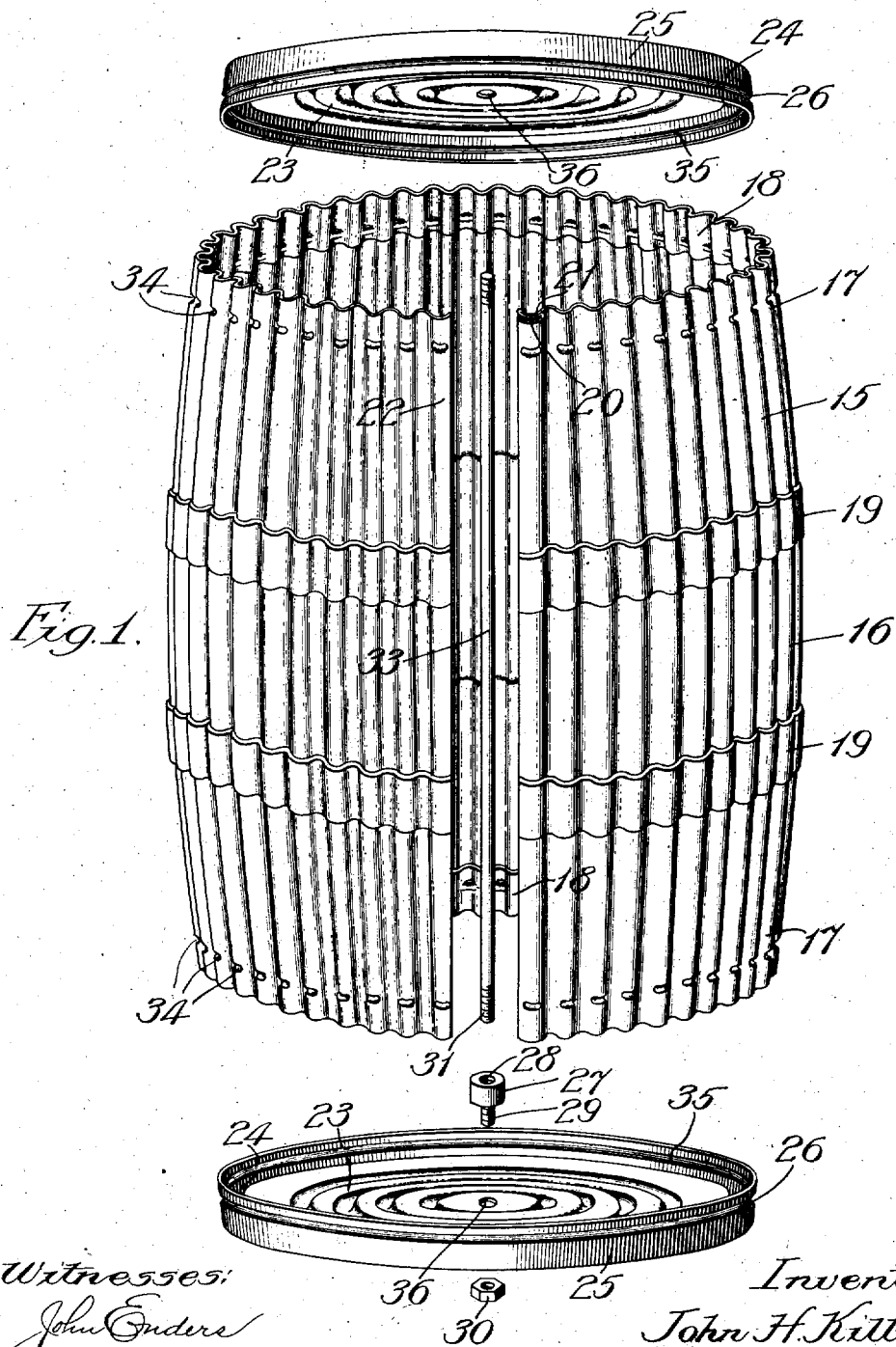
PACKING CASE.

APPLICATION FILED FEB. 9, 1909.

Patented Mar. 14, 1911.

2 SHEETS—SHEET 1.

986,467.



Witnesses:

John Enders
Chas. H. Buell

Inventor:

John H. Killion.

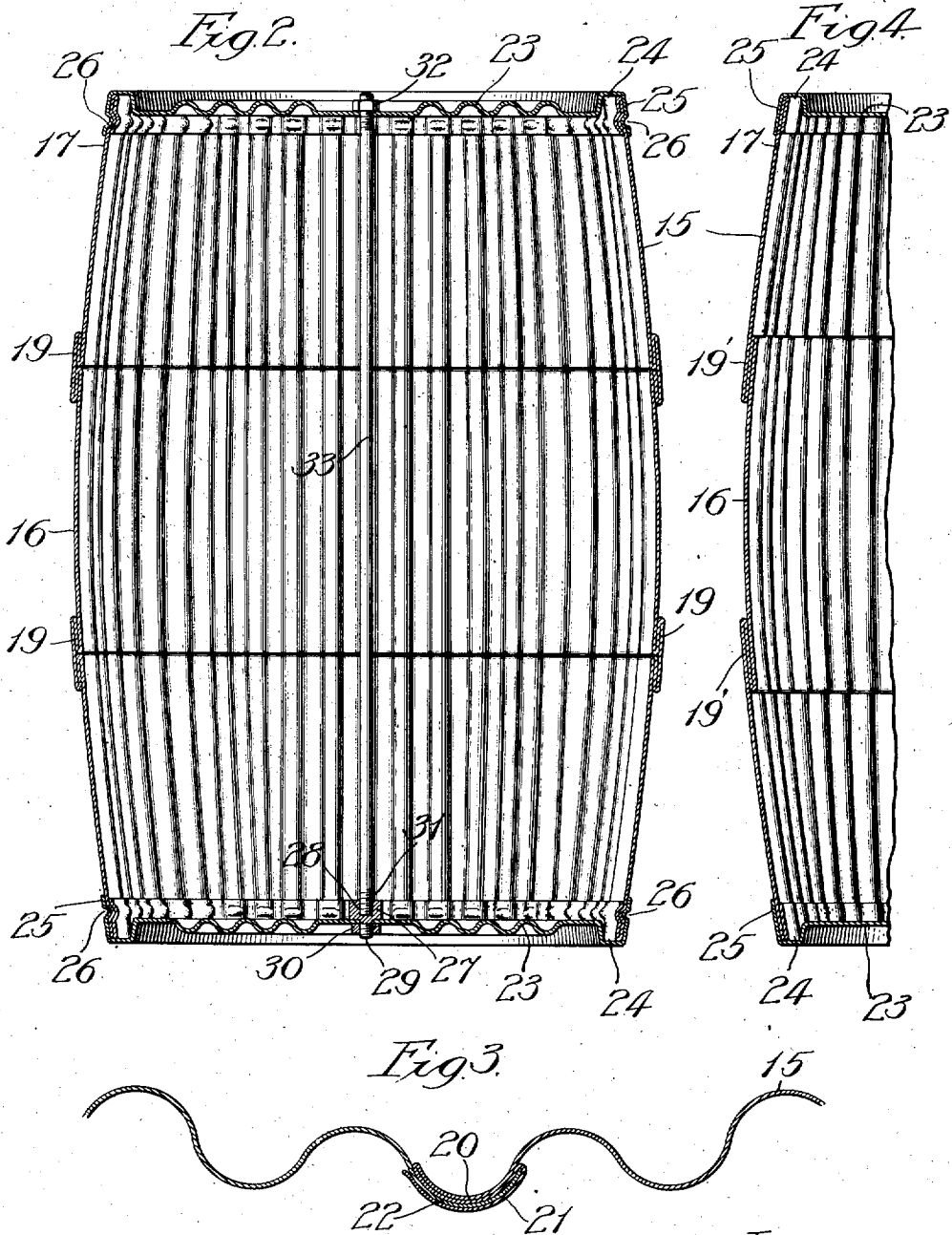
By Sheridan, Wilkinson & Scott,
Attys #

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UNITED STATES PATENT OFFICE.

JOHN H. KILLION, OF CHICAGO, ILLINOIS.

PACKING-CASE.

986,467.

Specification of Letters Patent.

Patented Mar. 14, 1911.

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To all whom it may concern:

Be it known that I, JOHN H. KILLION, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Packing-Cases, of which the following is a specification.

The principal object of my invention is to provide a new and improved sheet metal packing case.

Another object is to provide a sheet metal packing case that can be knocked down when empty and can have its parts quickly assembled in operative relation when desired.

Another object is to provide a sheet metal packing case that shall have great strength in proportion to the quantity of material employed.

Other objects will be more readily apparent in connection with the following specification taken with the accompanying drawings.

With all these objects in view, the invention consists of the combination of elements recited in the appended claims.

In the accompanying drawings, I have illustrated one particular embodiment of my invention which is one of several forms thereof preferred by me at the present time. I have also illustrated in the drawings a modification with respect to a detail of the structure.

Figure 1 is a perspective view showing the various elements of my improved sheet metal packing case slightly spaced apart. Fig. 2 is a longitudinal section when assembled. Fig. 3 is a sectional view of a detail. Fig. 4 is a longitudinal partial section showing a modification.

The side wall 15 of the barrel consists of a single sheet of metal corrugated longitudinally of the barrel. The corrugations are made a little deeper toward the ends 17, so that the perimeter of the barrel is less at the ends than at the central part 16. Before the sheet 15 is corrugated its ends are folded inwardly as indicated by the reference numerals 18. Also folds or tucks 19 are made as shown in section in Fig. 2. The folded ends 18 and the intermediate folds 19 serve to strengthen the barrel somewhat as hoops strengthen an ordinary wooden barrel.

The longitudinal meeting edges of the side wall sheet 15 will now be described. One edge is folded back on the outside, as indicated by the reference numeral 20, and is then folded forward again as indicated by

the reference numeral 21, a narrow space being left between the two folds 20 and 21, which is adapted to receive the opposed edge 22 of the side wall sheet 15.

The two heads of the barrel are alike and they are preferably stamped by means of dies in the shape shown in the drawings. The main part 23 of each head is corrugated slightly in concentric circles, thus facilitating a slight degree of yielding without rupture. Around the circumferential border of the head 23 is a groove or trough 24, its width being substantially equal to the depth of the corrugations at the ends of the side wall 15. This trough 24 is bordered on the outer side by a flange 25 that laps down around the side wall 15.

Holes 36 are made centrally in the two heads. A compound nut 27-30 is permanently attached in one of these holes. This nut consists of a cylindrical body 27 having an internally threaded socket 28 and an externally threaded projection 29 adapted to pass through the hole 36 and have the nut 30 screwed tight on the outside. Into this socket 28 the threaded end 31 of the longitudinal tie-rod 33 may be screwed. The other threaded end 31 of the tie-rod 33 will project through the opposite hole 36, where it can receive a nut 32 on the outside, and thus tie the heads 23 together. If deemed desirable, the heads can be further secured in place by providing a circumferential series of notches 34 in the outer corrugations around the ends of the side wall 15. Then a groove 26 is formed around the outside of the flange 25 of the head 23, this groove 26 on the outside making a bead 35 on the inside, such bead being adapted to fit into the notches 34 when the barrel is assembled.

The process of manufacturing the corrugated sheet metal side walls 15, naturally delivers them in curved shape with the longitudinal edges spaced apart somewhat more widely than is shown in Fig. 1. Thus, these sheet metal side walls 15 can be readily nested for shipment. It will be seen that the heads 23 will also nest readily, and thus a large number of these barrels can be packed in a small space for shipment when in knocked-down condition.

To assemble the barrel, the meeting edges 20-21 and 22 of the side wall are matched together as already explained. Then the lower head 23 is applied, the compound nut 27-30 having been previously assembled in

the hole 36. Next the tie-rod 33 is screwed into the socket 28. The lower head and the side wall having been assembled, the barrel can be filled with whatever commodity it is intended to receive, such for example as dry powdered cement. Then the upper head 23 is applied, the end of the tie-rod 33 projecting through the hole 36, and finally the nut 32 is screwed on, thus securely tying the barrel heads together, and also through them securing the side wall 15. The annular grooves 24 in the heads 23 brace the ends of the side wall 15 against either inward or outward displacement.

When it is desired to open the barrel, the nut 32 can be withdrawn and the head 23 lifted up. If it is desired to let the barrel stand and to remove its contents with a scoop, the tie-rod 33 can be unscrewed from the socket 28 and lifted out, thus removing any obstruction that might otherwise be offered to the scoop.

It will be seen that the particular embodiment of my invention which I have described and illustrated in the drawings is adapted to satisfy the objects stated at the beginning of this specification. This barrel has the advantages that a plurality of them can be readily nested for shipment in knocked-down condition, that the parts of a single barrel are few and simple, and that they can be quickly and easily assembled into operative relation for receiving a desired commodity. The corrugation of the side wall and the convexity thereof give great strength in proportion to the amount of material employed. The strength is further increased by the inturned end lips 18 and by the folds or hoops 19.

The barrel can be easily opened when desired without destroying any part of it or impairing its utility, and the parts can again be assembled, so that it can be used repeatedly. At any stage of its use, if desired, it can be knocked down and then later on completely reassembled.

The beads 35 on the flanges 25 of the heads 23, in conjunction with the notches 34 in the corrugations on the side wall 15, assist in holding the parts together. In some cases it may be desirable to dispense with the beads and the notches, and rely wholly upon the central tie-rod 33. In other cases, it may be desirable to dispense with the central tie-rod and depend wholly upon the beads and notches to keep the parts together. And in still other cases it may be desirable to use both means simultaneously.

I claim:

1. In a device of the class described, a continuous flexible sheet metal side wall corrugated longitudinally, its periphery being greatest at the middle and decreasing toward the ends, inherent integral means to detachably unite the meeting edges of the

side wall, removable heads, and a plurality of coacting means to secure said heads to said side wall including engaging heads and notches in said wall and head elements.

2. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, one of the meeting edges being folded double and corrugated so as to form a curved recess to receive and detachably interlock with the opposite meeting edge, removable heads, and means to secure said heads to said side wall.

3. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, integral means to detachably unite the meeting edges of the side wall, removable heads, and a central tie-rod extending between said heads and detachable from the bottom head so as to facilitate access to the contents when the top head is removed.

4. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, inherent means to detachably unite the meeting edges of the side wall, removable heads with peripheral guide grooves to fit upon the end edges of the side wall, and detachable and removable means to tie said heads together.

5. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, integral means to detachably unite the meeting edges of the side wall, removable heads each having a peripheral flange adapted to detachably embrace and interlock with the adjacent end edge of the side wall, and detachable auxiliary means to tie said heads together.

6. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, its periphery being greatest at the middle and decreasing toward the ends, means to detachably unite the meeting edges of the side wall, removable heads, said heads having peripheral end grooves to engage the end edges of the side wall and prevent lateral displacement thereof, and auxiliary means to tie the heads together.

7. In a device of the class described, a side wall composed of a single piece of flexible sheet metal, said side wall having a peripherally extending fold therein to reinforce and strengthen the same, means to detachably unite the meeting edges of the side wall, removable heads, and means to secure said heads to said side wall.

8. In a device of the class described, a side wall composed of a single piece of flexible sheet metal, said side wall having a peripherally extending fold of triple thickness therein to reinforce and strengthen the same, means to unite the meeting edges of the side

wall, removable heads, and means to secure said heads to said side wall.

9. In a device of the class described, a side wall composed of a single piece of flexible sheet metal with a peripheral fold therein and also corrugated longitudinally, means to detachably unite the meeting edges of the side wall, removable heads, and means to secure said heads to said side wall.

10. In a device of the class described, a side wall composed of a single piece of flexible sheet metal having its end edges folded inwardly and the whole sheet corrugated longitudinally, means to unite the meeting edges of the side wall, removable heads, and means to secure said heads to said side wall.

11. In a device of the class described, a side wall composed of a single piece of flexible sheet metal with its end edges folded inwardly and with circumferential reinforcing folds between the ends, said sheet also being corrugated longitudinally, means to unite the meeting edges of the side wall, removable heads, and means to secure said heads to said side wall.

12. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, means to unite the meeting edges of the side wall, removable heads, each head having a peripheral groove of the same width as the depth of the corrugations in the side wall, said groove being adapted to fit upon the corresponding end edge of the side wall, and means to secure said heads to said side wall.

13. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, means to detachably unite the meeting edges of the side wall, removable heads having peripheral grooves adapted to receive the end edges of the side wall, one of said heads having a central hole therein, a tie-rod detachably attached to the inner side and center of the other head and projecting through said hole, and a nut screwed upon the projecting end of the tie-rod.

14. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, means to unite the meeting edges of the side wall, removable heads with central holes therein, an internally threaded outwardly extending socket with an externally threaded projection through one such hole, a nut on said projection, a tie-rod with screw threaded ends, one of them engaging said socket and the other passing through the hole in the other head, and a nut upon the projecting end of the tie-rod.

15. In a device of the class described, a

side wall composed of a single piece of flexible sheet metal corrugated longitudinally, means to unite the meeting edges of the side wall, removable heads with peripheral flanges adapted to surround the end edges of the side wall, each flange having an internal circumferential bead, and the corrugations on the side wall being correspondingly notched to receive such bead.

16. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, means to detachably unite the meeting edges of the side wall, removable heads with flanges adapted to surround the end edges of the side wall, and resilient interlocking means between said flanges and said side wall.

17. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, means to detachably unite the meeting edges thereof, removable heads with flanges surrounding the resilient end edges of the side wall, interlocking means between the flanges and the side wall, and a central tie-rod between the two heads.

18. In a device of the class described, a side wall composed of a single piece of flexible sheet metal corrugated longitudinally, one edge thereof being doubled back and then forward, the backward and forward folds being spaced slightly to receive the opposite edge, both edges containing a half wave of corrugation, removable heads with annular recesses to engage the end edges of the side wall, and means to secure the heads to the side wall.

19. In a device of the class described, a single piece, flexible sheet metal side wall having two opposite edges detachably joined by means of a compression and tension joint consisting of a hook-like curvature on one edge fitting into a correspondingly curved socket on the other edge, said sheet being corrugated parallel to the said edges, interchangeable heads having cap-like form with end retaining groove for the side wall extremities and beaded flange to engage corresponding notches in the wall corrugation ridges, and a tie-rod having one end detachably fastened to the inner side of one head and held by a nut on the outer side of the other head.

In testimony whereof, I have subscribed my name.

JOHN H. KILLION.

Witnesses:

CARL A. RICHMOND,
HENRY A. PARKS.