No. 646,741. Patented Apr. 3, 1900.

G. W. KNAPP.

ATTACHING WIRE BAILS TO SHEET METAL VESSELS.

(Application filed Dec. 22, 1899.)

(No Model.)

Fig. 1.

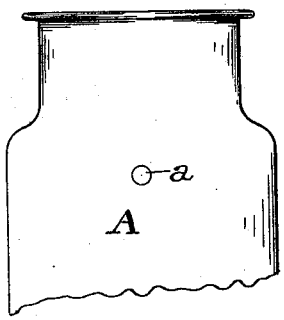


Fig. 4.

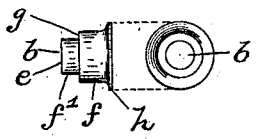


Fig. 3.

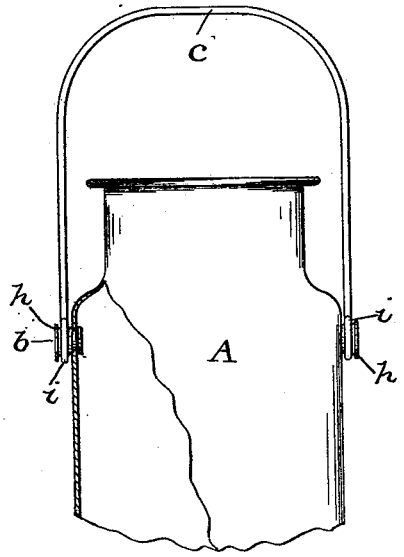


Fig. 2.

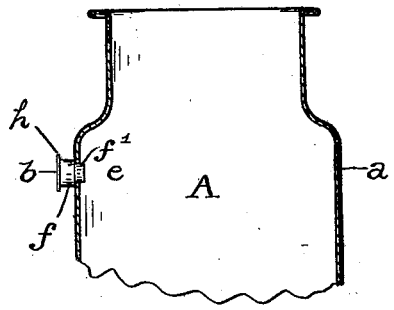
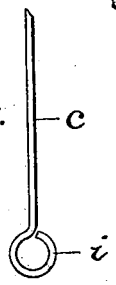


Fig. 5.



Witnesses:—

Charles B. Mann Jr.

Charles Vietsch.

Inventor:—

George W. Knapp

By

Chas B. Mann

Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. KNAPP, OF BALTIMORE, MARYLAND.

ATTACHING WIRE BAILS TO SHEET-METAL VESSELS.

SPECIFICATION forming part of Letters Patent No. 646,741, dated April 3, 1900.

Application filed December 22, 1899. Serial No. 741,278. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. KNAPP, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Attaching Wire Bails to Sheet-Metal Vessels, of which the following is a specification.

My invention relates to means for attaching wire bails to sheet-metal vessels—such, for example, as buckets.

My present invention relates to a shell rivet attached to the wall of the vessel, said shell rivet serving for attachment of the bail.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the upper part of a sheet-metal vessel and shows a hole in the wall to receive my improved shell rivet. Fig. 2 illustrates a vertical section through a sheet-metal vessel and shows one rivet in place and ready to be secured and the hole on the opposite side. Fig. 3 is a part section and part side elevation of a sheet-metal vessel, illustrating the bail in position and also shows the condition of the rivet on the inside of the vessel after it has been flattened down. Fig. 4 illustrates two views, a side and a front view, of the shell rivet on a larger scale. Fig. 5 illustrates a side view of one of the end loops of the bail.

In the drawings, A designates the vessel, having in its side a hole *a*, *b* the shell rivet, and *c* the wire bail or handle. The rivet comprises a hollow shell which is closed at one end *e*, and this closed end is reduced in size, so that the shell has two diameters *f f'*, united by a shoulder formation internally and externally. The external shoulder *g* takes against the outside of the vessel-body around the hole *a*, while the reduced end *f'* projects through the hole. The outer edge of the large diameter of the shell is provided with a flange *h*.

In applying the shell rivet to vessels the reduced end *f'* of the rivet is first inserted from the outside into the hole *a* of the vessel, and a suitable tool is then inserted into the larger part of the shell and bears against the internal shoulder, and another tool is used to flatten or clench the closed end on the inside of the vessel, as shown in Fig. 3.

The wire bail or handle *c* is coiled at its ends *i* around the large diameter *f* of the hollow shell of the rivet, and the flange *h* keeps it in position.

Having thus described my invention, what I claim is—

1. The combination of a vessel; a shell rivet at each side of said vessel, said shell having a closed end and two diameters and a shoulder between, which latter takes against the exterior of the vessel, and the smaller diameter and closed end passing through the wall of the vessel to the inside and flattened, and the outer and large end provided with a flange; and a wire bail coiled at each end around the larger diameter of said hollow shells and retained in place by means of the flange thereon.

2. The combination of a vessel; a hollow rivet at each side of said vessel—said rivet projecting only from the outer wall of the vessel and comprising a shell having two diameters united by a shoulder formation internally and externally—the external shoulder taking against the exterior of the vessel when the closed end is inserted through the wall of the vessel and said closed end flattened; and a wire bail having each end coiled around the larger diameter of said hollow rivets.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE W. KNAPP.

Witnesses:
CHARLES VIETSCH,
F. W. BARNACLO.