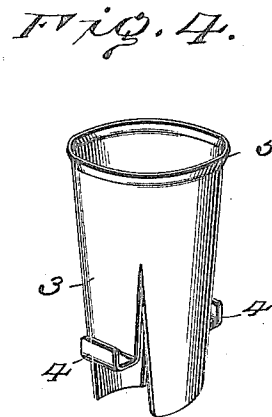
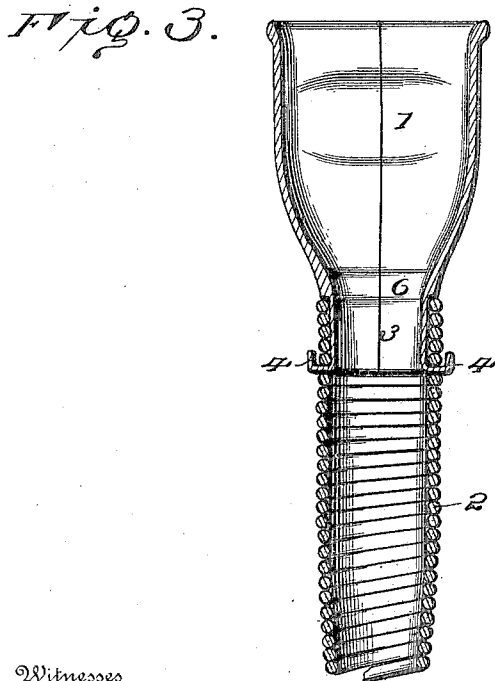
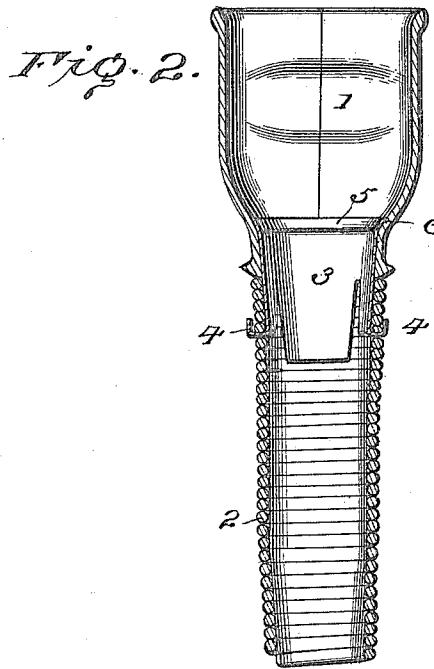
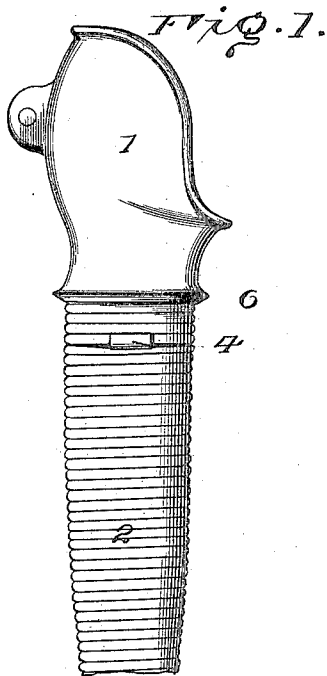


No. 680,748.

Patented Aug. 20, 1901.

J. E. WELLING.
GRAIN TUBE CONNECTION.
(Application filed Apr. 9, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JOHN E. WELLING, OF CYNTHIANA, KENTUCKY, ASSIGNOR TO WALTER C. RENAKER, OF SAME PLACE.

GRAIN-TUBE CONNECTION.

SPECIFICATION forming part of Letters Patent No. 680,748, dated August 20, 1901.

Application filed April 9, 1901. Serial No. 55,091. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. WELLING, a citizen of the United States, residing at Cynthiana, in the county of Harrison and State of Kentucky, have invented certain new and useful Improvements in Grain-Tube Connections; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object to provide a firm, positive, and secure connection between a grain-tube and the cup and which will admit of the tube being readily removed from and attached to the cup without the use of tools.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and the drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the upper portion of a grain-tube and cup connected in accordance with this invention. Fig. 2 is a vertical section thereof. Fig. 3 is a view similar to Fig. 2 of a modification, the coupling being integral with the cup. Fig. 4 is a perspective view of the coupling.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The cup 1 and tube 2 are of ordinary construction, such as usually provided for grain-drills, the tube being flexible and composed of spring-wire formed into a coil the elements of which lie close together, so as to form a continuous tube without any break or interruption. As heretofore noted, the invention deals more particularly with the means of connection between the tube and cup, and advantage is taken of the spiral formation of the grain-tube to join the parts by a screw-thread connection. The coupling 3 may be integral

with the cup 1 or separate therefrom, the latter construction being preferred, as it enables the application of the invention to cups and grain-tubes already in use and upon the market.

The coupling 3 in either form, whether integral with the cup or separate therefrom, consists of a bushing, cuff, sleeve, or short tube and is formed with offstanding lugs 4 at different points in the length of the coupling corresponding to the relative location of the coil or coils of the tube 2, with which said lugs engage when the parts 1 and 2 are connected. As shown in Fig. 3, the coupling 3 is integral with the cup and the lugs 4 project laterally therefrom, and the tube 2 fits over the said coupling, the lugs 4 passing between the coils or turns of the tube near its upper end as the said tube 2 is screwed thereon.

The coupling (shown most clearly in Figs. 2 and 4) fits within the lower portion of the cup 1 and has an outer flange 5 at its upper end to overlap the inner shoulder 6 at the lower end of the cup 1, so as to prevent disengagement of the parts 1 and 3 when properly positioned and the tube 2 is in place. Corresponding slits are formed in the sides of the coupling 3 and extend from the lower end upward for a short distance, and the portions of the coupling between said slits are bent to form the lugs 4, said lugs being preferably of hook form to make a firm and secure connection. This form of coupling enters the upper end of the tube 2 and is held in the cup 1 by the upper end of the tube 2 engaging with the lower end of the cup, as indicated most clearly in Fig. 2. When the tube 2 is disconnected from the coupling, the latter can be readily removed from the cup; but when the parts are assembled, as indicated in Fig. 2, they are firmly and securely connected and are not liable to casual detachment because of the upward pressure exerted upon the lower end of the cup 1 by the tube 2. The coupling may be formed in any way found most advantageous and may be applied to the cup 1 in any practical way, so as to admit of attaining the objects of this invention.

Having thus described the invention, what is claimed as new is—

1. In combination with a grain-tube consisting of a wire coil, and a cup, a coupling applied to said cup and formed with offstanding lugs to make screw-thread connection
5 with the grain-tube by passing between adjacent turns or coils thereof, substantially as set forth.
2. In combination with a grain-tube consisting of a wire coil, and a cup, a coupling
10 applied to the cup and having offstanding lugs of hook form to engage with the grain-tube by a screw-thread connection, substantially as set forth.
3. In combination with a grain-tube consisting of a wire coil, and a cup, a coupling
15 separate from the cup and adapted to be fitted thereto and formed with offstanding lugs to make screw-thread connection with elements of the grain-tube, the latter serving in
20 conjunction with the cup and coupling to hold the latter in place, substantially as set forth.
4. In combination with a grain-tube consisting of a wire coil, and a cup, a coupling for connecting the grain-tube and cup and
25 having portions separated by cuts from the body and bent to provide engaging lugs, substantially as set forth.
5. In combination with a cup having an inner shoulder, and a grain-tube consisting of
30 a wire coil, a coupling having an outer flange at its upper end to engage with the inner shoulder of the cup and having offstanding lugs to make screw-thread connection with the grain-tube, which latter normally exerts
35 an upward pressure against the lower end of the cup to hold the parts in engagement, substantially as set forth.

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

JOHN E. WELLING. [L. S.]

Witnesses:

J. W. BOYD,

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