

G. E. EVANS.
 WORK SUPPORT OR MANDREL.
 APPLICATION FILED APR. 28, 1909.

966,673.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

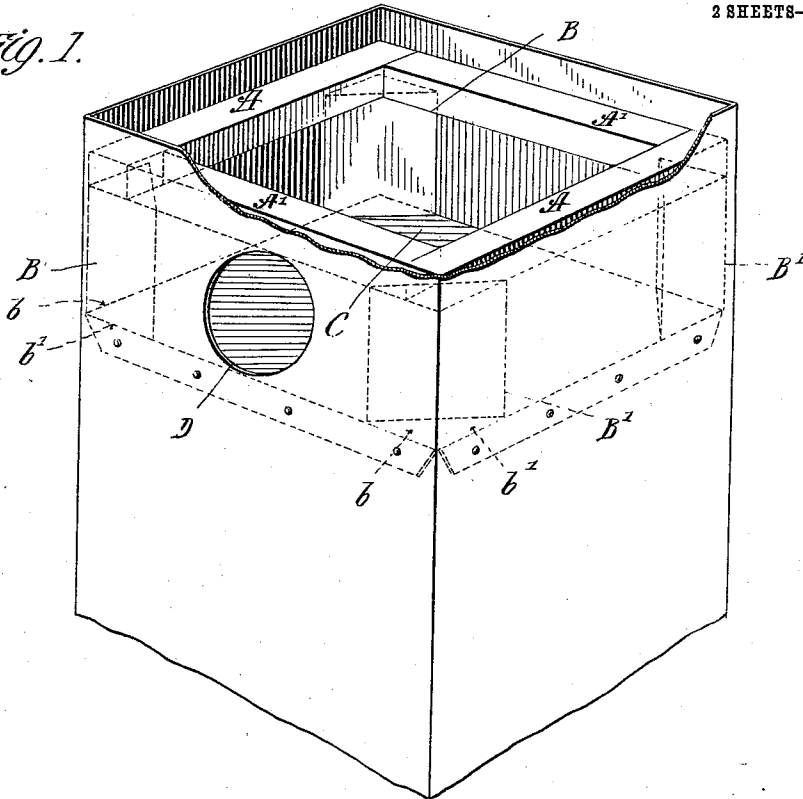
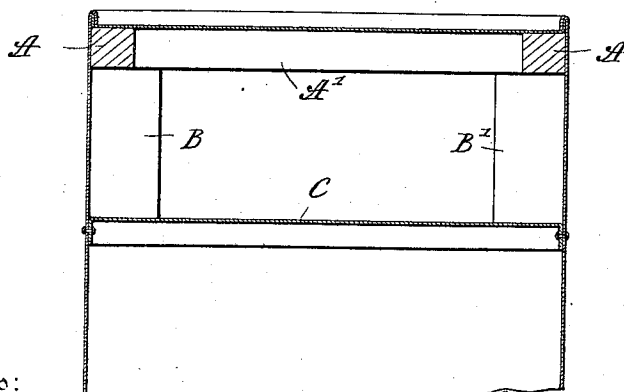


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

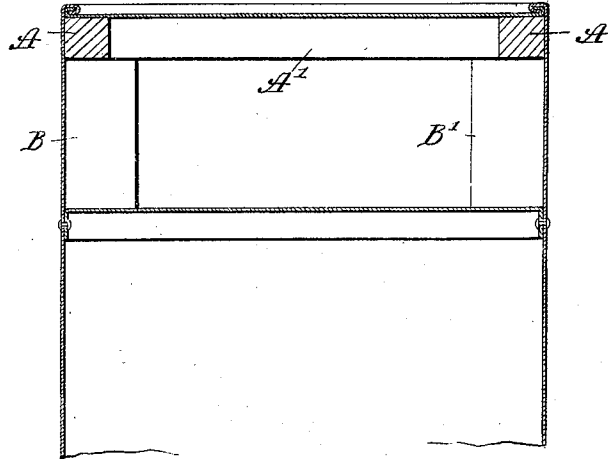
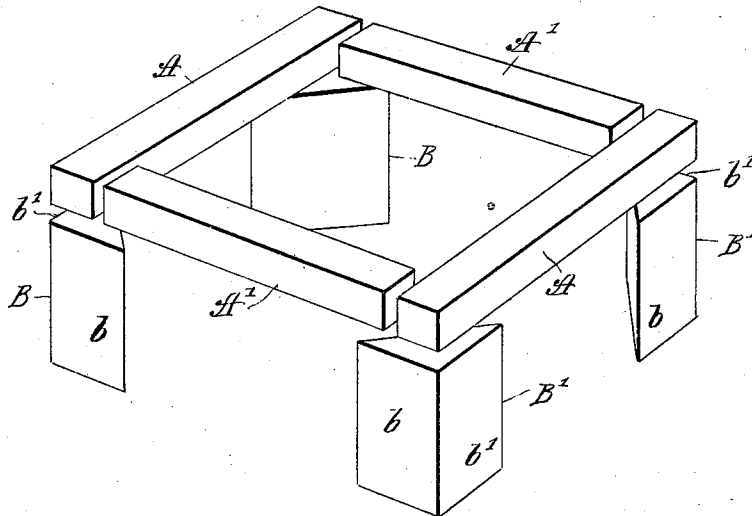


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE E. EVANS, OF MOLINE, ILLINOIS.

WORK-SUPPORT OR MANDREL.

966,673.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed April 28, 1909. Serial No. 492,728.

To all whom it may concern:

Be it known that I, GEORGE E. EVANS, of Moline, county of Rock Island, and State of Illinois, have invented a new and useful
5 Improvement in Work-Supports or Mandrels, of which the following is a specification.

This invention relates to mandrels or work supports for use more particularly in connection with the manufacture of tanks, boxes, and the like, for facilitating the attachment of the blind head thereto.

In the manufacture of metal tanks, it is usual to first form the body portion, then
10 attach one head, which may be performed through the opposite open end, and finally to attach the other head, known as the "blind" head. The attachment of the heads is preferably effected by seaming or folding
15 into interlocking engagement, the edges of the body and head blanks, and after one head has been thus secured, which may be easily effected by introducing a supporting mandrel or frame through the opposite open
20 end of the tank, the attachment of the blind head is attended with the difficulty of providing a means, which, while capable of giving proper internal support to the parts while the blind head is being attached, may nevertheless be removed from the interior of the
25 tank after the attachment of the head and after the tank is thus closed.

The aim of my invention is to provide a work support or mandrel to meet these conditions, and the invention consists of a mandrel formed of a number of disconnected separable sections adapted to be assembled within the tank in operative relation to the head to be attached, and arranged to be
30 removed therefrom separately through the contracted filling opening or bung, which is usually formed in the tank.

Referring to the drawings: Figure 1 is a perspective view of the blind-head end of a tank, showing my improved mandrel assembled therein; Fig. 2 is a sectional view through one side of the tank at its end, showing the edges of the side and blind head interlocked in the preliminary stage of the formation of the seam; Fig. 3 is a similar
40 view, showing the interlocked edges bent down and the seam complete; and Fig. 4 is a perspective view of the mandrel removed, showing the members or sections of the same
45 as they appear when assembled for use.

In the accompanying drawings: My im-

proved mandrel or support comprises a plurality of supporting members A, A', etc., in the present instance four, in order to give support at the four sides of the tank and
50 head; and a plurality of sustaining devices or props B, B', etc., corresponding in number to the supporting members and adapted to sustain the same at the ends thereof. In the present instance, the supporting mem-
55 bers are rectangular in cross-section, so as to fit in the angle formed between the sides and head of the tank, and these members are adapted when in use to be assembled in the form of a rectangular frame, corresponding
70 to the cross-sectional shape of the body of the tank, the ends of two of the opposing members abutting against the sides of the other members at their ends, as shown in Fig. 1.

The props or sustaining devices B, B', present in cross-section, right-angularly related sides *b, b'*, which, when the devices are assembled as in Fig. 1, beneath the ends of the supporting members, fit in the corners
80 of the tank, and serve to sustain the supporting members in their assembled relations in operative position with reference to the edges of the tank body and the edges of the head.

In the use of the device, after the first head has been attached by any suitable means, the supporting members A, A', of the mandrel are assembled in the form of a frame within the opposite end of the tank,
85 and the sustaining devices B, B', are applied beneath the corners of the frame to sustain the same at these points, the opposite ends of the sustaining devices being given suitable support either by the opposite
90 end of the tank, or, as shown in the drawings, by a partition C, which in this instance the tank is shown as being provided with. With the parts assembled in this manner, the edges of the blind head and body of the
100 tank may be secured together by suitable and appropriate means, they being in the present instance folded over and interlocked with each other to form a double-seam, as shown in Fig. 3, the firm support given to
105 the parts by the mandrel, permitting the seaming operation to be speedily and effectively performed. When the attachment of the head is completed, the mandrel is collapsed by the separation of its parts, the
110 sustaining devices or props being first removed from beneath the corners of the man-

drel frame, which action will permit the members of the latter to be separated from each other, whereupon all of the disconnected parts may be withdrawn separately from the interior of the tank through the contracted filling opening or bung D, with which the tanks are provided.

While I have illustrated and described my improved device in the form I prefer to adopt, and which has been found to answer to an admirable degree the objects in view, it is manifest that the same is susceptible of many changes and modifications, such as would suggest themselves to the skilled mechanic, and this without departing from the limits of my invention; and I desire to be understood that the invention is not limited to any specific form or arrangement of parts, except in so far as such limitations are specified in the claims. It is manifest also, that the device is capable of use in connection with tanks of forms other than rectangular in cross-section, and for other and analogous purposes, provided the operation is substantially as above described.

Having thus described my invention, its construction and mode of operation, what I claim and desire to secure by Letters Patent of the United States is as follows:

1. The improved mandrel for use in attaching the blind heads of tanks, boxes, and the like, the said mandrel comprising a plurality of elongated supporting members,

adapted to be assembled within the tank, end to end, in the form of an open collapsible frame, in operative relation to the sides of the tank and the head to be secured, and means for temporarily holding the said members in assembled relations; whereby when the blind head has been fastened in place, the mandrel may be collapsed and its members removed separately from a contracted opening in the tank.

2. The improved mandrel for use in attaching the blind heads of tanks, boxes, and the like, said mandrel comprising a plurality of disconnected elongated supporting members, adapted to be assembled within the tank, end to end, in the form of an open collapsible frame, in operative relation to the sides of the tank and the head to be secured, and corner props adapted to be assembled in operative relation to the corners of the collapsible frame to give support to the same; whereby when the blind head of the tank is secured in place, the members of the frame and the corner props may be removed separately from the tank.

In testimony whereof, I hereunto set my hand this 24th day of February, 1909, in the presence of two attesting witnesses.

GEORGE E. EVANS.

Witnesses:

GRACE LEWIS,
HAZEL MALMBURG.