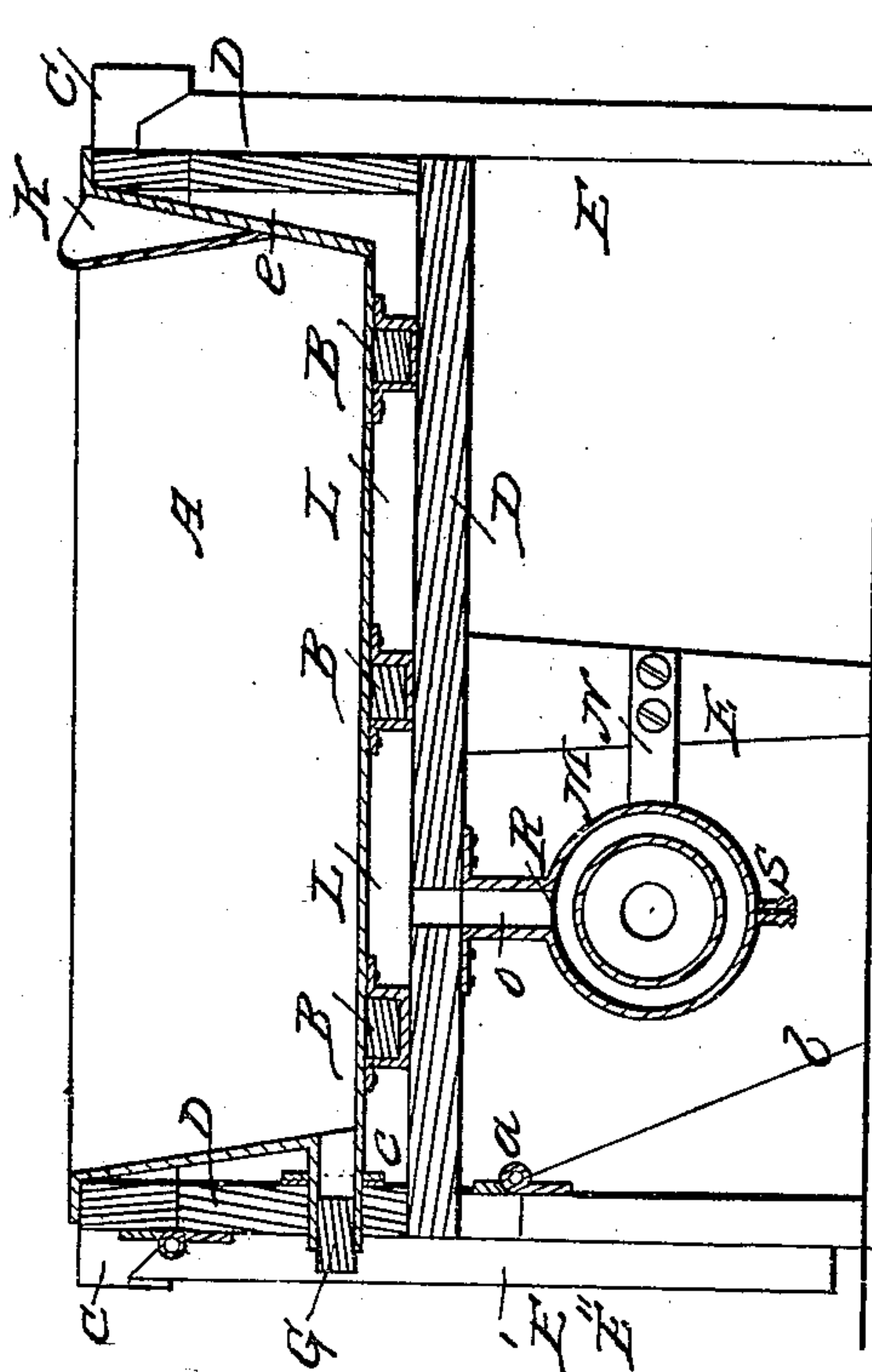
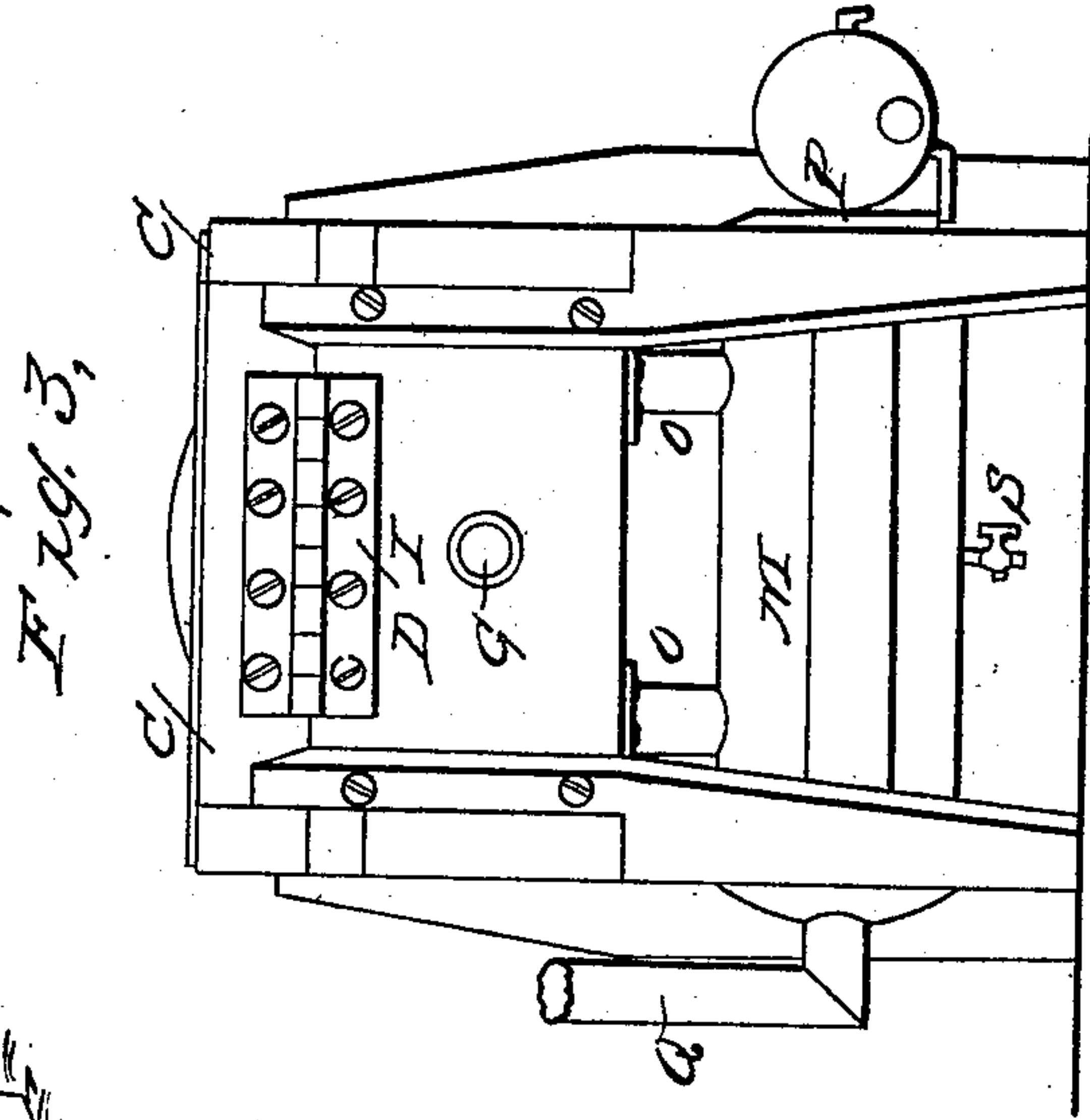
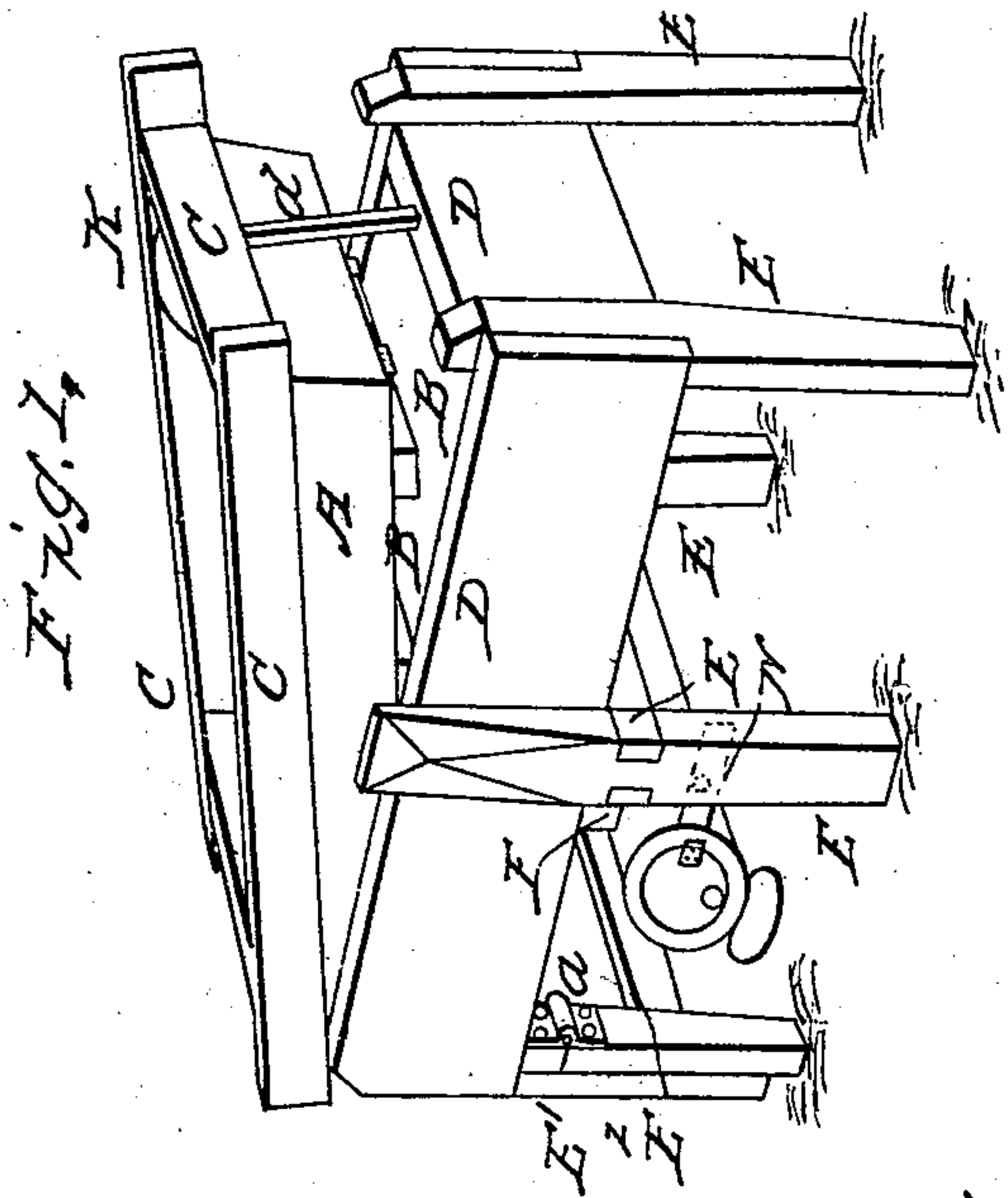


H. A. ROE.

Cheese Vat.

No. 20,663.

Patented June 22, 1858.



# UNITED STATES PATENT OFFICE.

HENRY A. ROE, OF WEST ANDOVER, OHIO.

## CHEESE-VAT.

Specification of Letters Patent No. 20,663, dated June 22, 1858.

*To all whom it may concern:*

Be it known that I, HENRY A. ROE, of West Andover, in the county of Ashtabula and State of Ohio, have invented new and  
5 useful Improvements in Cheese-Vats, for which a patent was granted to me on the 12th day of December, 1854; and I do hereby declare that the following is a full and accurate description of the construction and  
10 operation of the said improvement on my former patent, reference being had to the accompanying drawings, making part of this specification.

Figure 1, is a perspective view of my improved vat. Fig. 2 is a longitudinal vertical section, and Fig. 3, is an end view.

Like letters refer to like parts.

The vat A, Figs. 1 and 2, may be of any convenient size, to suit the magnitude of  
20 the operation where it is used, and should be made of tin plate, though other sheet metal as zinc, or tinned copper would answer the purpose. It is a little broader at the top than bottom, as shown in the figures. The bottom of the vat, is supported  
25 in three, or more, places, by bars of wood seen at B, B, Figs. 1 and 2. A wood frame C, surrounds the top of the vat, A, to which it is fastened by small nails or screws.  
30 This frame is two or three inches wide and rests upon the top of the outer part or casing of the vat, seen at D, D, D, Figs. 1, 2 and 3. This casing is supported upon six legs, two of which are in the middle, and  
35 two at each end, and are seen at E, E, and E'. The boards of which this outer casing is composed, are fastened to these legs with screws, the joints being previously treated with white lead paint, to prevent leakage.  
40 The inside should also be thoroughly painted to preserve the wood and keep it water tight. The middle part is supported by two pieces F, F, which are attached to the middle pair of legs. The legs E', are shorter  
45 than the legs E, by about 3 or 4 inches, for the purpose of allowing the vat to tip or incline toward the spout end so as to discharge the whey, through the spout G, Figs. 2 and 3.

50 In order to keep the vat in a horizontal position, I introduce an extra pair of legs E'', E'', Figs. 1 and 2. These are attached to the legs E', as seen at a, Figs. 1 and 2. These legs when vertical just equal in  
55 length, the legs E, E, thus preserving the vat in a horizontal position; but when it

is desirable to incline the vat, if the legs E'', are pushed back to the line a, b, Fig. 2, the superior gravity of that half of the vat will incline it forward, so that it will  
60 rest its weight upon the middle legs and the short legs E', the legs E'' occupying the position indicated by the dotted line a, b.

The spout G, is furnished with a flange c, that comes nearly in contact with the inner  
65 surface of the casing. This flange is packed with leather or india rubber packing, so that when the vat is horizontal in the casing, the hole in the casing through which the pipe G, passes, will be water tight in  
70 consequence of the weight of the vat and its contents, acting as a lever upon the packing, as hereinafter described.

In order to avoid the necessity of lifting the whole vat out of the case in order to  
75 allow the inside of the case to dry, as well as the outside of the vat, to prevent its rusting, I attach the end of the frame C, to the casing D, by a hinge or hinges, as seen at I, Fig. 3. By this arrangement, the  
80 vat can be raised at the end opposite to the whey gate or spout G, to the position seen in Fig. 1. This hinge also acts as a fulcrum, (the vat and its contents being the  
85 lever), in keeping the packing of the pipe G, in close contact with the inside of the casing at c.

The whey gate G, is used to draw the whey from the curd. It consists of a pipe passing through the walls of the water bath  
90 or casing D, and is stopped with a plug or other convenient method.

When the vat is horizontal as seen in Fig. 2, the pieces B, rest upon the bottom of the casing as represented. When the vat is  
95 raised as seen in Fig. 1, it can be supported by a prop or rod, as represented at d, Fig. 1.

For the purpose of introducing water into the bath, or outer casing, D, when the vat is horizontal as seen in Fig. 2, I attach a stationary kind of funnel K, Figs. 1 and 2,  
100 which consists of a curved piece of tin soldered to the inside of the end of the vat A, and having an orifice at the bottom seen at e Fig. 2, for the passage of the water into the  
105 water chamber L, Fig. 2, which forms the water bath of the cheese vat A. Below this water bath, and at right angles to its length, I introduce the heater M. This is cylindrical in form, and as long as the width of the  
110 casing or water bath, D, and is placed between the legs E and E', where it is sup-



ported by the arms N, Figs. 1 and 2, and also by the connecting pipes O, O, hereafter to be described.

The heater M, consists of two parts 5 united, the inner one being the fire box, having a door P, in one end, and a smoke pipe Q in the opposite. The space R, between the two parts, is filled with water, a connection being formed between the water space R, of 10 the heater and the water chamber L, Fig. 2, by means of metallic pipes O, O, Figs. 2 and 3, which also serve to support the heater. These pipes are riveted or screwed to the bottom of the water bath. At the bottom 15 of this water space R, there is a stop cock S, for the purpose of drawing off the water from the water bath and heater.

The advantages of this improvement over my former vat patented Dec. 12th 1854, are 20 as follows. In order to dry and air the former, the milk vat must be lifted entirely out of the water vat. The whey gate, passing as it did through the bottom, becoming oftentimes very tight by the swelling of the 25 wood, rendering its removal extremely difficult. In my improvement, the whey gate, (pipe G,) fits loosely into the hole in the walls of the casing D, and is made tight by the flange and packing c, Fig. 2 as before 30 described, which acts as a simple valve, requiring no force to open it except raising

one end of the vat, the opposite end being attached to the casing D, as before specified. If the water in the water chamber is suffered to remain for a number of days without 35 changing, the wood becomes water soaked, and the paint comes off. It also causes the rusting of the outside of the milk vat. If the water is drawn off, and the vat left standing in the casing, the air becomes 40 foul, and sometimes very offensive. By my improvement, all these difficulties are easily overcome, as the water can be daily drawn off, and the inside of the casing thoroughly 45 dried.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The attaching the milk vat to the casing by a hinge joint or its equivalent, and so arranging the whey gate, that the weight 50 of the milk vat and its contents will act as a lever in keeping the collar and packing c, in close contact with the inner surface of the water chamber.

2. I also claim in combination therewith, 55 the short legs E', and the jointed legs E'', all operating in the manner and for the several purposes set forth.

HENRY A. ROE.

Witnesses:

C. M. WILKINS,  
LEWIS F. WARNER.