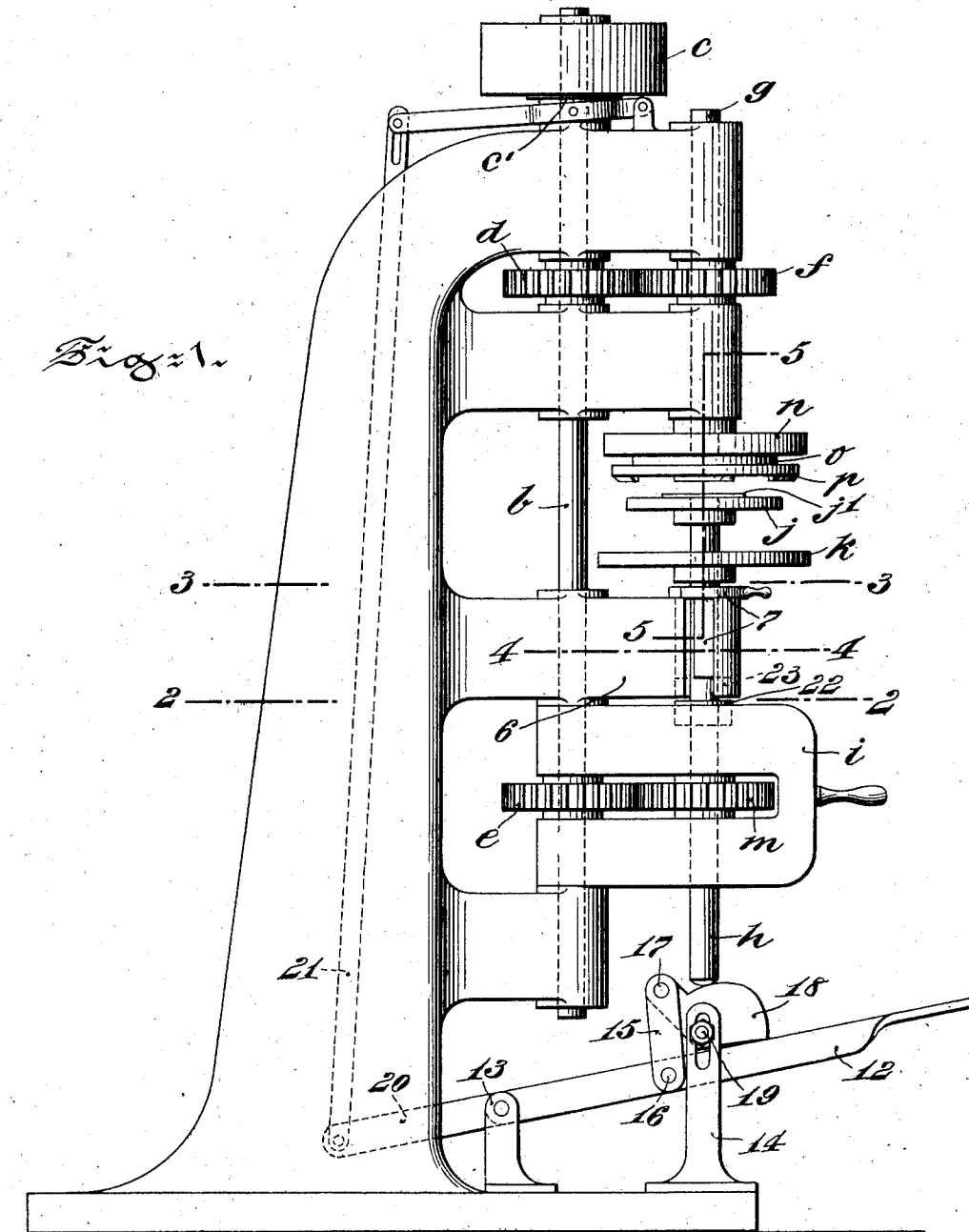


No. 874,149.

PATENTED DEC. 17, 1907.

E. J. WITTEBOLLE.
MACHINE FOR MAKING SHEET METAL VESSELS.
APPLICATION FILED APR. 9, 1907.

3 SHEETS—SHEET 1.



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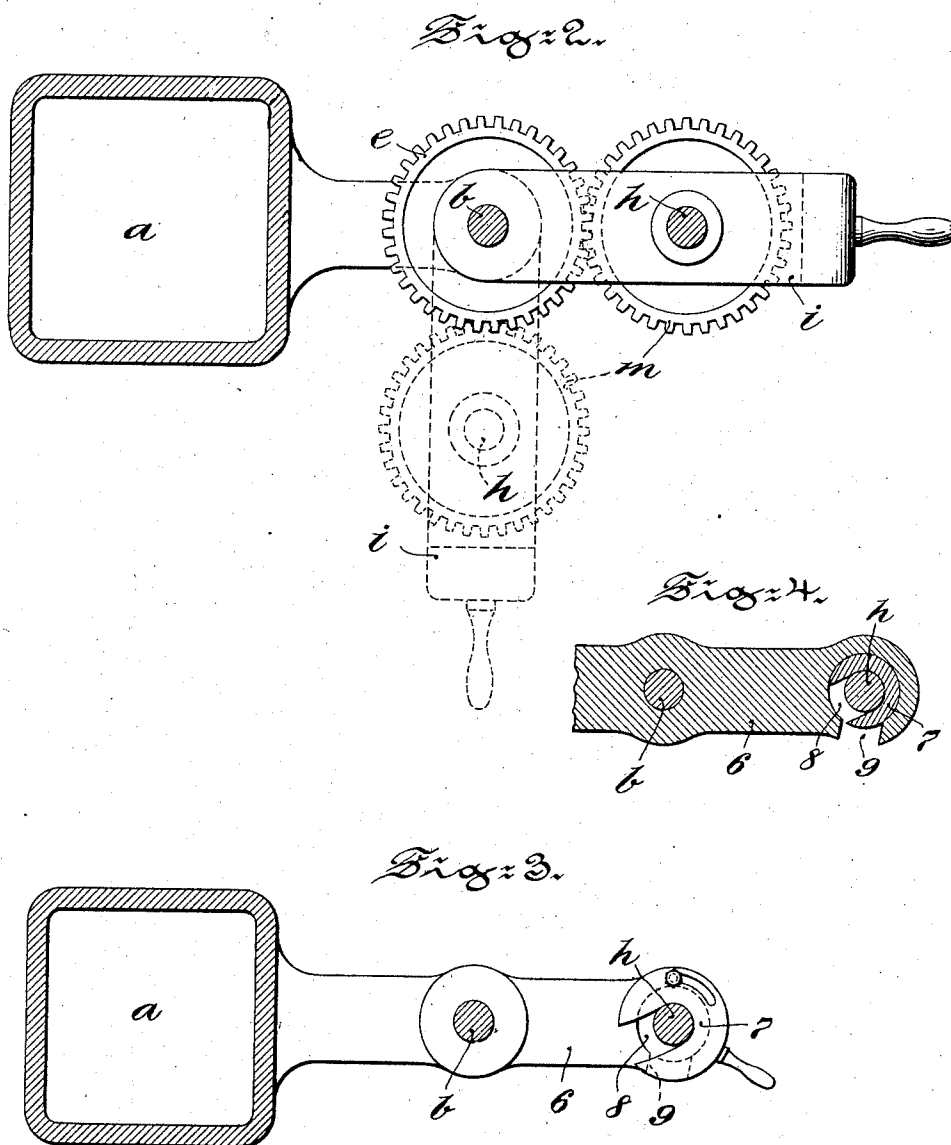
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3 SHEETS—SHEET 2.



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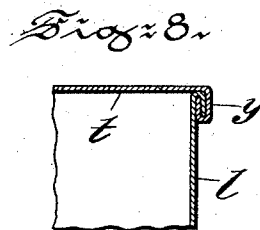
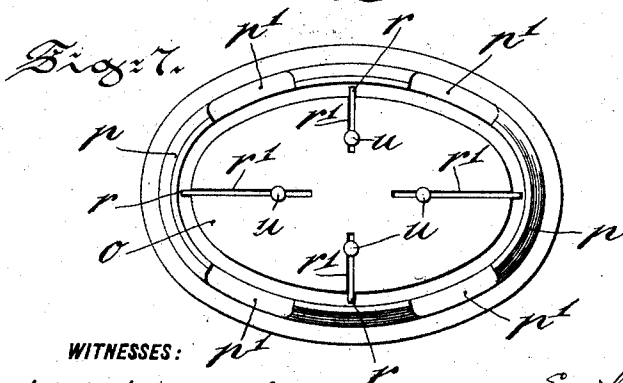
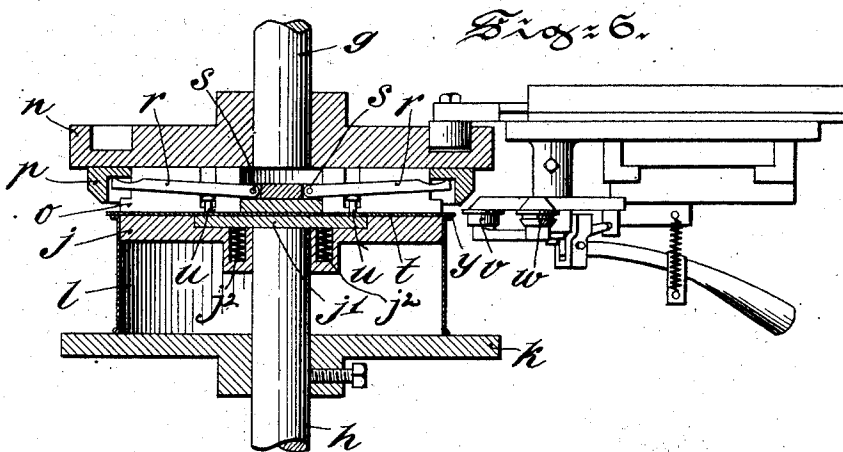
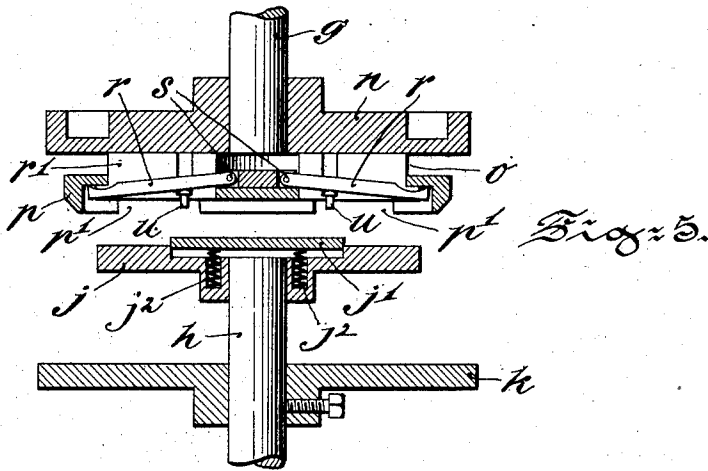
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR MAKING SHEET-METAL VESSELS.

No. 874,149.

Specification of Letters Patent.

Patented Dec. 17, 1907.

Application filed April 9, 1907. Serial No. 367,222.

To all whom it may concern:

Be it known that I, EMILE J. WITTEBOLLE, a citizen of the United States, and a resident of the city and county of Camden, State of New Jersey, have invented certain new and useful Improvements in Machines for Making Sheet-Metal Vessels, of which the following is a specification.

My invention relates to improvements in machines for automatically securing the bottom to the sides or body of a sheet metal vessel, and more particularly to improvements for double seaming a perfectly flat bottom to the body of a vessel.

My invention is particularly adapted for securing an oval bottom to an oval body or for securing a bottom having straight sides and rounded corners to a body of similar form, but it is equally well adapted for securing a round bottom to a body of circular cross section or for securing bottoms of irregular form to bodies having a section of corresponding form.

In the accompanying drawings forming part of this specification, and in which similar letters of reference indicate similar parts throughout the several views:—Figure 1, is a side elevation of my machine for seaming the bottom to the body of a sheet metal vessel; Fig. 2, a section of Fig. 1 on line 2—2; Fig. 3, a section of Fig. 1 on line 3—3; Fig. 4, a section of Fig. 1 on line 4—4; Fig. 5, a section, on an enlarged scale, of Fig. 1 on line 5—5. Fig. 6, a view similar to that shown in Fig. 5, the body carrying part of the machine being shown in its raised position and carrying the bottom and body of a vessel; also showing, diagrammatically, the seaming tool. Fig. 7, a bottom plan view of the device for centering the bottom of the vessel preparatory to securing it to the body. Fig. 8, a sectional view through a portion of the bottom and body of a vessel showing the manner in which they are interlocked, or seamed, by the machine.

My machine consists of a main frame *a* which carries a vertical driving shaft *b* furnished with the usual pulley *c* which is driven by a belt in a well known manner, and with a clutch *c'* which may be engaged or disengaged as may be desired to cause the pulley *c* to drive the shaft *b*. The shaft *b*

carries the spur gears *d*—*e* the former of which gears with and drives a spur gear *f* which is carried by a shaft *g* which is carried in suitable bearings in the frame *a*, and the latter of which gears with and drives a spur gear *m*, which is carried by a shaft *h* which is carried in suitable bearings in a swinging frame *i* which frame is carried by the main frame *a* and the shaft *b* and swings around the shaft *b* as a center as shown in Figs. 1 and 2. The shaft *h* carries upon its upper end the platen or form *j* which corresponds in plan to a cross section of the interior of the body of the vessel to be bottomed.

j' is a plate carried centrally of the platen *j* upon springs *j'*.

k is a stop or shelf carried by the shaft *h* beneath the platen *j*, the distance between the top of the platen *j* and the top of the stop *k* being equal exactly to the height of the body of the vessel *l* as shown in Fig. 6. The stop or shelf *k* is preferably, as is usual in machines of this class, adjustable vertically of the shaft *h* so that vessels of varying depths may be operated on by the machine, both the platen *j* and the stop or shelf *k* are well known in machines of this nature and they will need no detailed description.

As has been before stated the shaft *h* is carried by a swinging frame *i* which swings around the shaft *b* as a center, hence the gears *e* and *m* are always in gear the former driving the latter and the shaft *h* positively. When the frame *i* is swung out, as shown by dotted lines in Fig. 2, the platen *j* is entirely out of line of the shaft *g* and the parts carried by this shaft and hence the body of the vessel may be conveniently placed upon the platen or the completed vessel as conveniently removed. The shaft *g* carries the device for centering and holding the bottom of the vessel before and during the operation of securing it to the body.

n is a head carried on the lower end of shaft *g* and secured to, or forming part of this head is a plate *o* which carries a centering ring *p* which is movable on said plate towards and away from the head proper *n*. The interior periphery of the ring *p* corresponds in shape and size to the periphery of the blank from which the bottom of the vessel is to be formed and this centering ring corresponds in shape

to that of the platen *j* and is always in register with the platen when the shafts *g* and *h* are in alinement owing to the gears *d—f, e—m*, which are all of the same pitch causing the shaft *b* to drive the shafts *g—h* both at the same speed. The movements of the swinging frame *i* will not disturb the relation of the shafts *g—h* because the teeth of the wheels *e—m* are always in engagement.

We will suppose now that the frame *i* is swung open, as shown by dotted lines in Fig. 2; and that the body *l* of the vessel to be bottomed is on the platen. The next operation is to swing the frame *i* into the position shown in the full lines, Fig. 2. This is done by hand and after being so moved the rotating split bushing 7, Figs. 1, 3 and 4, which is carried by the arm 6 of the frame *a*, and into which the shaft *h* passes when the frame *i* is swung in, is rotated on its vertical axis causing the opening 8 in it to pass out of register with the opening 9 in the arm 6, as shown in Fig. 4, thus locking the shaft *h* in alinement with shaft *g*. The next operation is to put the bottom into the centering ring *p*; this is done by hand and the bottom is held in this ring by the fingers, the bottom of the ring being cut away at intervals as shown at *p'*, Figs. 5 and 7 for the passage of the fingers, until the shaft *h* and its connected parts are lifted, which lifting first causes the spring plate *j'* to engage the under side of the bottom permitting the fingers to be now withdrawn. As the shaft *h* is further lifted the pressure causes the spring plate *j'* to recede into its seat in the top of platen *j* and the top *t* of the vessel bottom to engage and lift the pins *u* the tops of which bear against the under side of levers *r* the inner ends of which are pivoted at *s* to fixed points and the outer ends of which engage a flange on the centering ring *p*. The levers *r* operate in slots *r'* formed in the plate *o* and when their outer ends are lifted as above described they carry with them the centering ring *p* so that it will be out of the way of the seaming rolls *v—w*, Fig. 6.

I have shown in Fig. 1 a means for operating the shaft *h* and the clutch *c'* which consists of a foot lever 12 pivoted at 13 and working in a guide 14. To the lever 12 is pivoted a link 15, at 16, said link being pivoted at 17 to a cam 18 which is pivoted to the guide 14 at 19. As the outer end of the lever 12 is depressed the cam 18 is rotated lifting the shaft *h*, the platen *j* and causing the movements above described. After the shaft *h* has been lifted so as to cause the top of the platen *j* to firmly hold the bottom *t* between it and the under side of the plate *o* a projection 20 of the lever 12 will cause the arm 21 to throw the clutch *c'* into gear and the pulley *c* will then rotate the shaft *b*. This

clutch operating gear is well known and will not be described.

22, Fig. 1, is a collar on shaft *h* which when this shaft is lifted enters a corresponding recess 23 in the arm 6 of the frame *a* and acts in conjunction with the split bushing 7, formerly described, to keep the shaft *h* in alinement with shaft *g* during their operative movements.

The seaming rolls *v—w*—Fig. 6 are so well known, both in construction and operation, that it is thought unnecessary to describe them here.

Having thus described my invention I claim as new and desire to secure by Letters Patent:—

1. In a machine for making sheet metal vessels, in combination, a main frame, a main shaft carried by said frame, a head carrying shaft and head, a bottom centering ring carried by said head, a gearing connecting said main and head carrying shafts, a frame swinging around said main shaft as a center, a platen carrying shaft and platen carried by said swinging frame, a gearing connecting said main shaft and said platen carrying shafts means for bringing said platen and said head into operative contact, and means operated by the movement of said platen for lifting said centering ring clear of the bottom of said head when said head and said platen are in contact.

2. In a machine for making sheet metal vessels, in combination, a main frame, a main shaft carried by said frame, a shaft carried by said frame for carrying the bottom of the vessel, a frame swinging around said main shaft as a center, a shaft carried by said frame for carrying the body of the vessel, gear wheels connecting said main shaft and each of said other shafts, means carried by one of said latter shafts for carrying the body of the vessel and by the other shaft for carrying the bottom, means for bringing said bottom and body into contact, and means for seaming said bottom to said body.

3. In a machine for making sheet metal vessels, in combination, a head, a movable ring for centering a bottom carried by said head, pivoted arms carried by said head and engaging said centering ring, a platen for carrying a body, means for advancing said head and said platen into engagement, means operated by said movement for causing said arms to lift said centering ring away from the bottom of said head, and means for rotating said head and said platen.

4. In a machine of the character described, in combination, a body carrying platen, a spring supported plate carried by the top of said platen, a bottom carrying head, a centering ring movably carried by said head, arms pivoted to said head and engaging said ring,

pins carried by said head engaging said arms and adapted to be engaged by said platen, and means for bringing said head and platen into contact.

- 5 5. The combination with the main frame, the swinging frame, the shaft carried by said latter frame, and means for lifting said shaft,

of a collar on said shaft adapted to enter a corresponding recess in said main frame when said shaft is lifted.

EMILE J. WITTEBOLLE.

Witnesses:

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CHARLES A. RUTTER.