

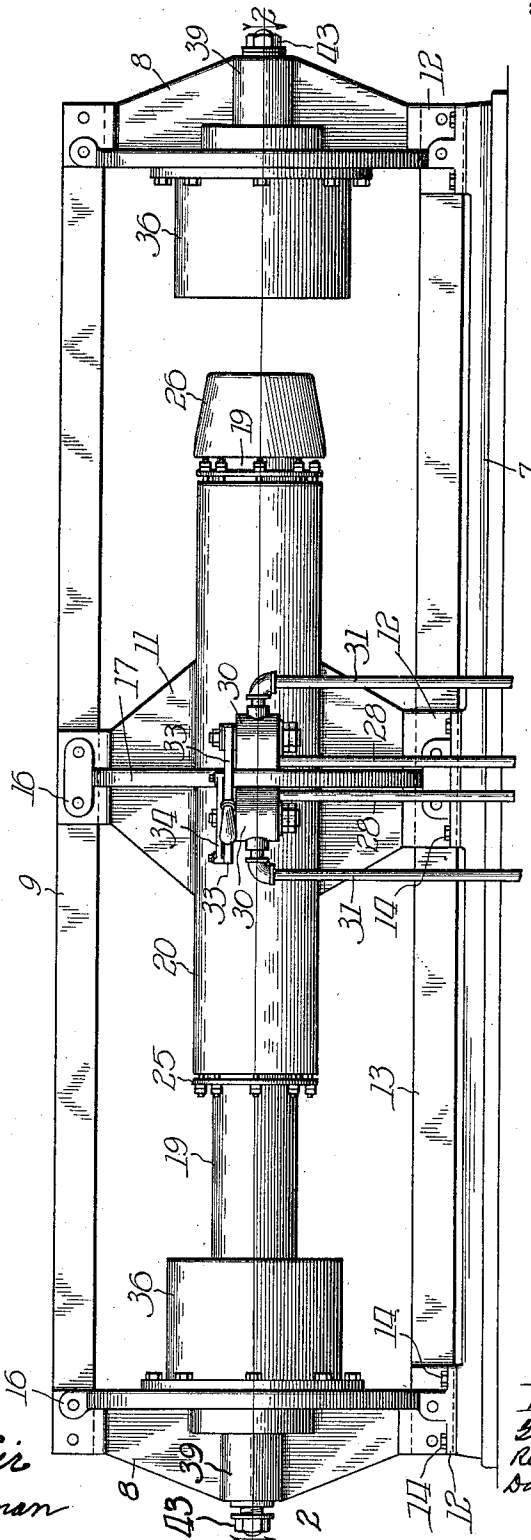
G. WEISS.
MACHINE FOR FORMING SECTIONS OF METAL BARRELS.
APPLICATION FILED SEPT. 8, 1910.

1,000,468.

Patented Aug. 15, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
Robert H. Weir
Robert Dobberman

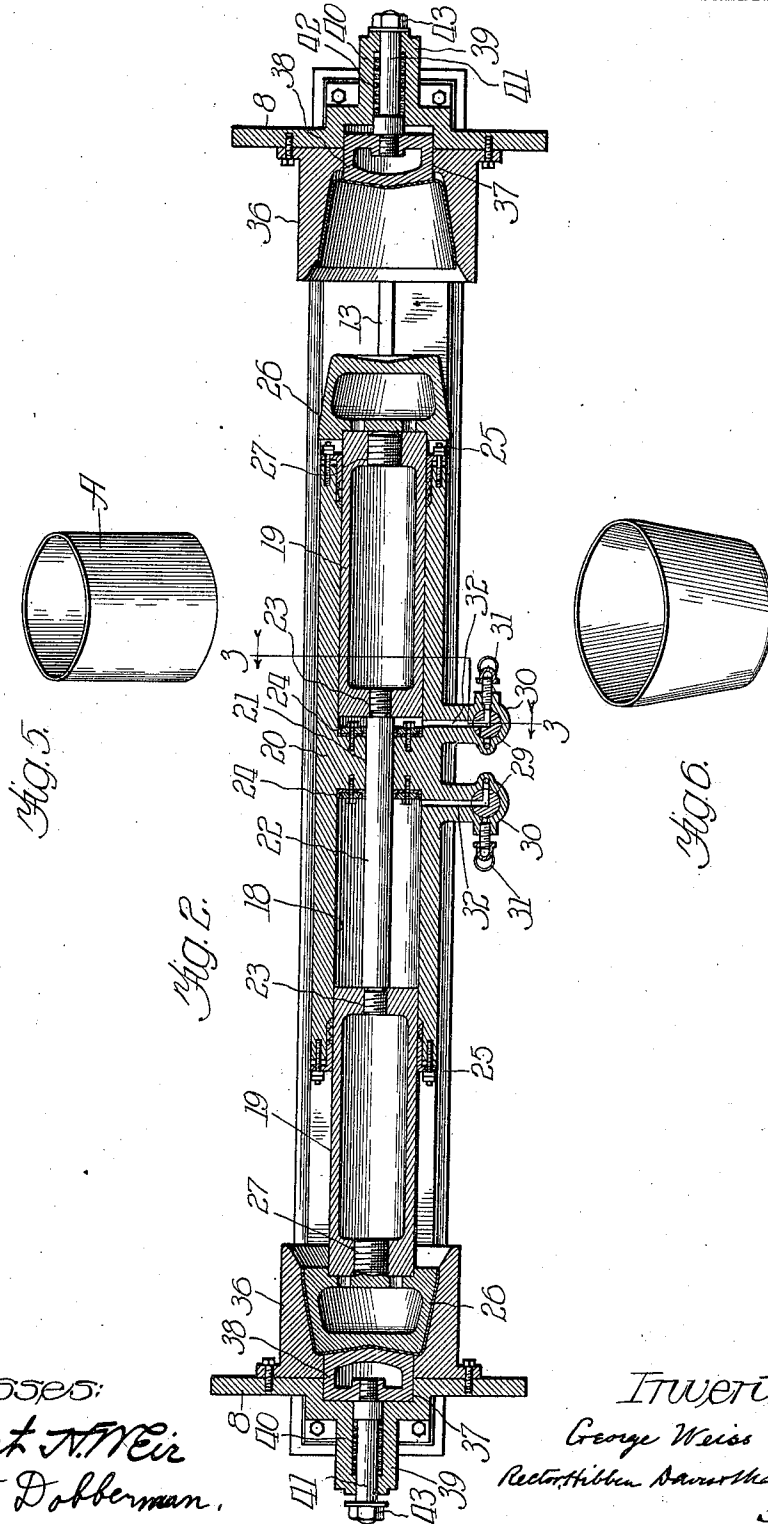
Inventor:
George Weiss
Reed, Hibben,
Davis & Macaulay
Attys.

G. WEISS.
MACHINE FOR FORMING SECTIONS OF METAL BARRELS.
APPLICATION FILED SEPT. 8, 1910

1,000,468.

Patented Aug. 15, 1911.

3 SHEETS—SHEET 2.



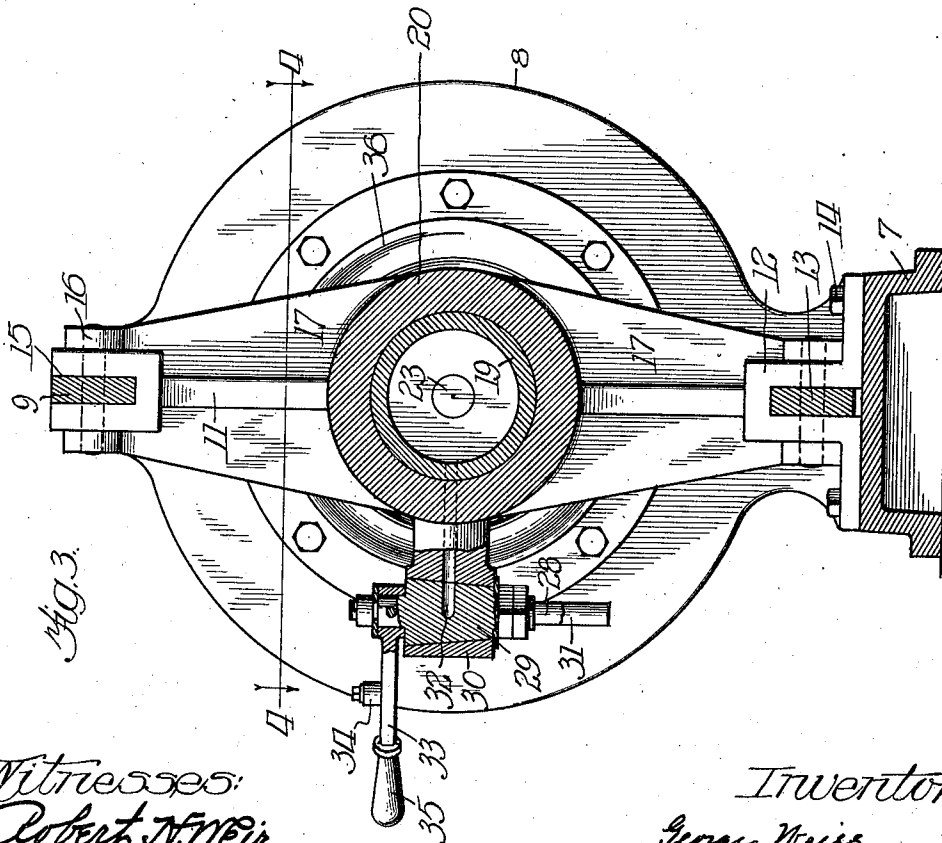
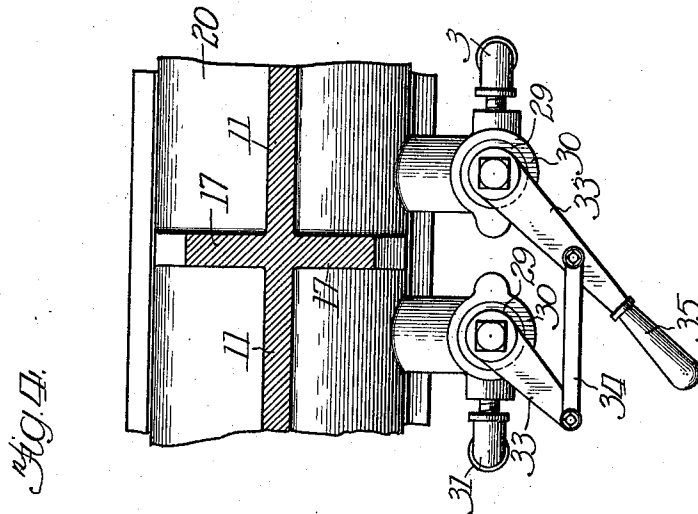
Witnesses:
Robert A. Meir
Robert Dobberman.

Inventor:
George Weiss
Reed, Hibben, Barnhart & Co.
Attys.

G. WEISS.
MACHINE FOR FORMING SECTIONS OF METAL BARRELS.
APPLICATION FILED SEPT. 8, 1910.

1,000,468.

Patented Aug. 15, 1911.
3 SHEETS—SHEET 3.



Witnesses:
Robert N. Meir
Robert Dobberman

Inventor:
George Weiss
Rector, Hibben, Davis & Macanay
Attys:

UNITED STATES PATENT OFFICE.

GEORGE WEISS, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHARLES H. WACKER, OF CHICAGO, ILLINOIS.

MACHINE FOR FORMING SECTIONS OF METAL BARRELS.

1,000,468.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed September 8, 1910. Serial No. 581,017.

To all whom it may concern:

Be it known that I, GEORGE WEISS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Forming the Sections of Metallic Barrels, of which the following is a specification.

My invention relates more particularly to machines which form metallic barrels in two sections, each of which is drawn or formed from a single blank. The sections, after reduction to the final shape, are joined by seaming, welding or otherwise, the seam or joint being located around the bilge of the barrel midway between the ends thereof. The machine of the present invention operates upon the barrel sections or halves when they are in the form of hollow sheet metal cylinders with one end closed and expands the open end of the cylinder, at the same time dishing the closed end.

My invention, broadly speaking, consists in a machine having oppositely-mounted dies with an intermediate motor to which are connected forming heads coöperating with the dies.

My invention further consists in an extractor for releasing the formed sections from the dies and in other details which are pointed out in the claims.

In the drawings which accompany the specification and form a part of the application Figure 1 is a side elevation of the machine; Fig. 2 a horizontal section through the center of the machine on the line 2—2 of Fig. 1; Fig. 3 a vertical section on the off-set line 3—3 of Fig. 2; Fig. 4 is a fragmentary section on the line 4—4 of Fig. 3; Fig. 5 is a perspective view of one of the blanks from which the barrel sections are formed; and Fig. 6 is a perspective view of a barrel section after it has been operated upon by my machine.

In the particular embodiment of my invention shown in the accompanying drawings the frame consists of a base 7, end supports 8, 8, a central support 11, and upper and lower brace or tension rods 9, 13. The supports 8 and 11 are cast in a substantially circular shape with reinforcing ribs or webs at right angles to the bodies of the supports. Each support is bolted to the base as at 14 and provided with open-ended slots at its upper and lower ends for the reception of

tension bars 9 and 13 respectively. It will be apparent that this particular form of frame is not essential to my invention though it serves as a convenient mounting for the mechanism which I employ. The central support 11 has cast or formed integral therewith a cylinder 17 which is bored from either end, as at 18, for the reception of a piston 19, a web 20 being left at the longitudinal center of the cylinder. This web, however, is also bored at 21 for the passage of the piston rod 22 to which the pistons 19 are connected by threaded joints 23. Suitable packing rings 24 surround the piston rod on either side of the web 20 to prevent leakage of the motive fluid, in this case water, from one cylinder to the other. Glands 25 are provided for packing the cylinder around the pistons at the outer ends of the former and the pistons carry former heads 26 on their outer extremities secured thereto by screws 27 tapped into the ends of the pistons. The two cylinders are further provided at their adjacent ends with passages 32 for the influx and efflux of the working fluid and each of these passages leads to a valve casing 30 including a turning plug 29 and connected to inlet and exhaust pipes 28, 31. The turning plugs have rectangular passages shown in Fig. 2, and the positions of the inlet and exhaust passages and the passages 32 are such that by turning the valves the interior of the cylinders may be connected with either the inlet pipes or outlet pipes at pleasure. In order to secure the simultaneous operation of the valves, however, the turning plugs are provided with arms 33, 33, which are connected together by a link 34 and one of which is extended into the handle 35, the connection being such that as one valve is turned to connect the corresponding cylinder with the exhaust the other valve is turned to connect its cylinder with the supply and vice versa.

Upon the end sections 8, 8, of the frame are mounted the female die sections 36, 36, with which the former heads 26 coöperate. At the bottom of each die is formed a cylindrical recess 37 within which is mounted for reciprocation an extractor 38, the outer face of which is flush with the operative surface of the die member when in its retracted position and is properly shaped to form the head of the barrel section. Each extractor extends into a recess formed in the end sec-

tion of the frame, which latter is provided with a further cylindrical extension 39 with a bore 40 of smaller diameter than the extractor through which extends a stem 41 connected to the extractor 38 and surrounded by a coiled spring 42. The stem further extends through an opening in the frame section and is provided with a nut 43 beyond the same which limits the movement of the extractor.

The operation of my barrel-forming machine will now be clear. With the parts in the position shown in Fig. 2 a blank such as shown at A (Fig. 5) is placed in the right-hand die and the valves turned to admit fluid to the right-hand cylinder and connect the left-hand cylinder to the exhaust. Thereupon the pistons 19 move to the right, carrying the former heads with them and that upon the right-hand piston enters the blank and expands it causing it to assume the shape of the interior of the die 36 which is also the shape of the exterior of the former 26. Under the pressure of the former head the extractor 37 retreats within its recess until its outer wall is flush with the surface of the die. When the former head has completed its work the position of the valves is reversed so that fluid is admitted to the left-hand cylinder and cut off from the right-hand cylinder, another blank in the meantime having been placed in the die, shown at the left of Fig. 2. The right-hand former head is then withdrawn from its die and thereupon the extractor 37 being relieved of the pressure moves forward under the pressure of its spring to force the completed barrel section from the die. This operation may be repeated indefinitely.

It will be apparent that in my machine a section is formed at each movement of the former head in either direction and that the extractor releases the formed section from the die as soon as the corresponding former head is withdrawn so that by my machine it is possible to form the product with great rapidity and with minimum of attention on the part of attendants. It will also be apparent that my invention is not confined strictly to the formation of barrels as it is well adapted for the manufacture of a number of similar products.

Various changes may be made in the particular form of this apparatus without departing from my invention. Thus it will be obvious that the cylinders might be made in separate castings and secured to the central support, or the valve casings might be made

separate from the cylinders and attached thereto, but these and other changes which will suggest themselves to those skilled in this and analogous arts, are still within the scope of my invention as stated in the following claims.

What I claim is:

1. In a device of the class described, a frame, a pair of hollow dies oppositely mounted on the frame, a pair of cylinders intermediate the dies, pistons in the cylinders connected for joint operation, valves for controlling the supply and exhaust of fluid to the cylinders, and former heads mounted on the respective pistons.

2. In a device of the class described, a frame, a pair of hollow dies oppositely mounted on the frame, a pair of cylinders intermediate the dies, pistons in the cylinders connected for joint operation, valves connected for simultaneous action for controlling the supply and exhaust of fluid to the cylinders, and former heads mounted on the respective pistons.

3. In a device of the class described a frame comprising end supports 8—8; hollow dies mounted upon said supports; a reciprocating motor intermediate the dies; a pair of former heads connected to the motor and adapted and arranged to cooperate with the respective dies, each die having an opening in its bottom, a recess in the corresponding support registering with the opening and an extractor mounted in each opening in the die and recess in the standard.

4. In a device of the class described, a frame; a pair of hollow dies oppositely mounted on the frame; a movable extractor for each die with means for moving the same; a pair of cylinders intermediate the dies; pistons in the cylinders connected for joint operation; valves for controlling the supply and exhaust of fluid to the cylinders, and former heads mounted on the respective pistons.

5. In a device of the class described, a frame comprising oppositely mounted supports 8—8; a hollow die mounted on each support; an extractor in each die having means for moving the same; and a pair of former heads connected together, each adapted to cooperate with one of the hollow dies; and hydraulic means for simultaneously operating the former heads.

GEORGE WEISS.

Witnesses:

JOHN B. MACAULEY,
LOUIS B. ERWIN.