

J. E. WELLS & G. W. BENTLEY.
Machines for Making Wash-Boilers.

No. 155,907.

Patented Oct. 13, 1874.

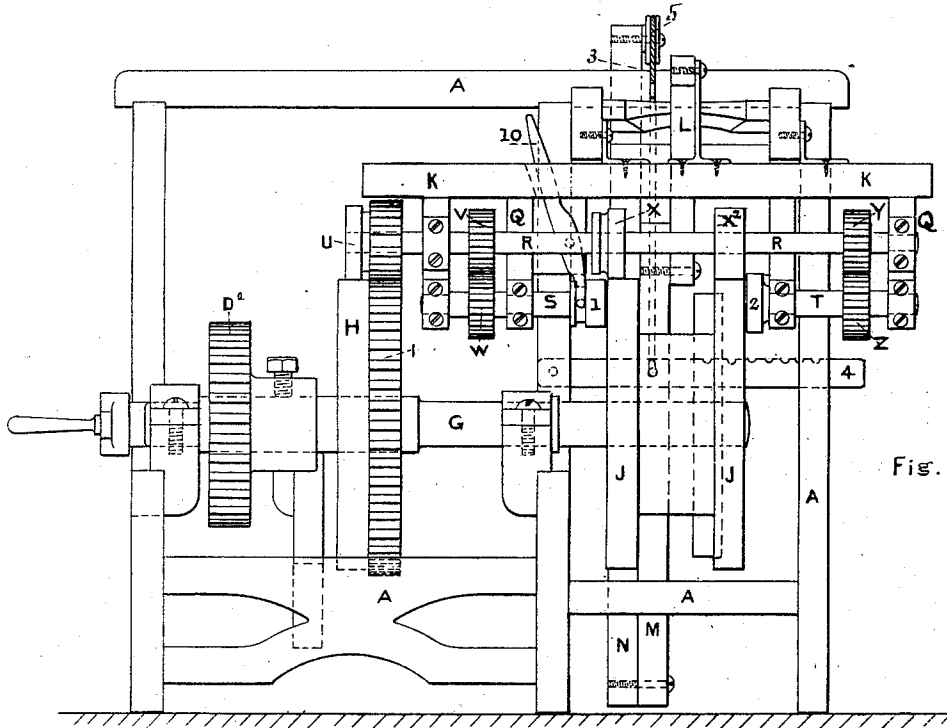


Fig. 1.

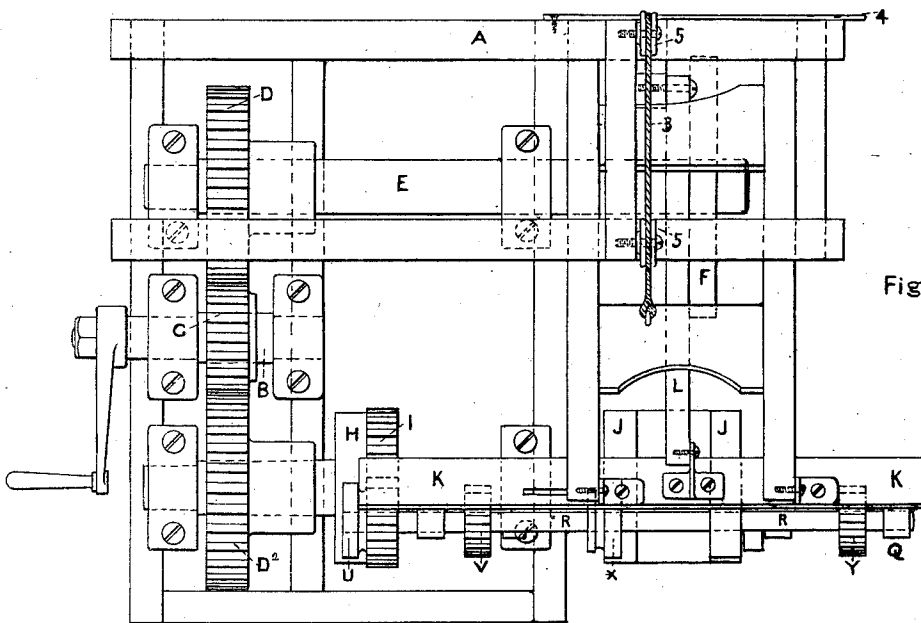


Fig. 2.

WITNESSES.

J. E. Wells
G. W. Bentley

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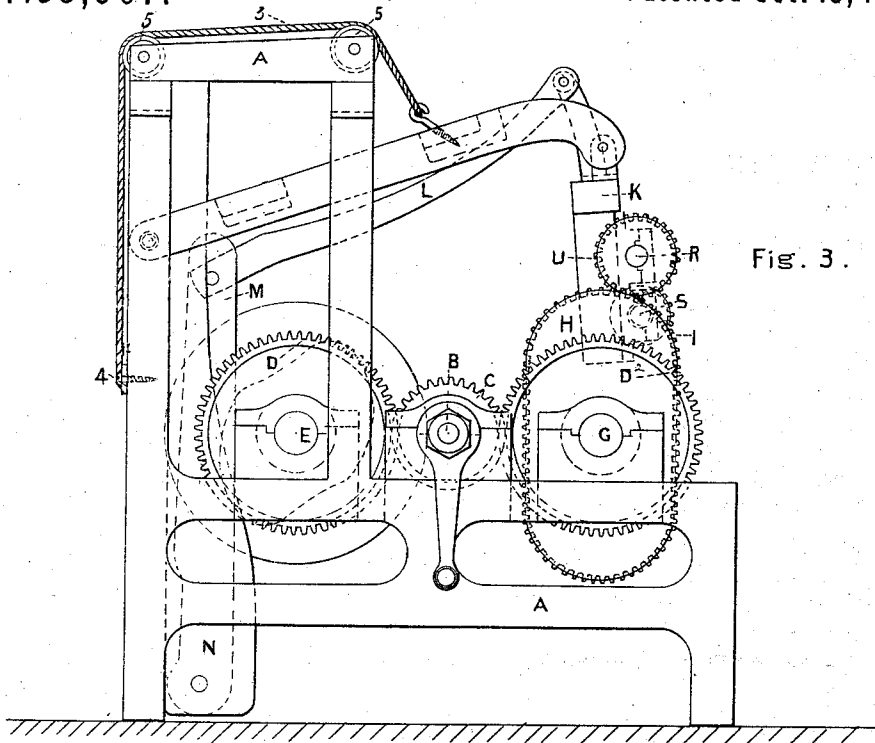


Fig. 3.

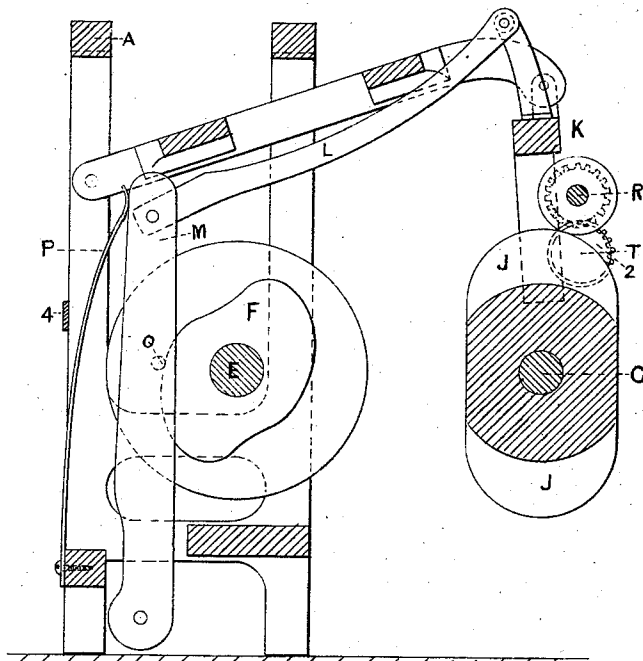


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES E. WELLS, OF NEW MILFORD, CONNECTICUT, AND GEORGE W. BENTLEY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING WASH-BOILERS.

Specification forming part of Letters Patent No. **155,907**, dated October 13, 1874; application filed April 3, 1873.

To all whom it may concern:

Be it known that we, JAMES E. WELLS, of New Milford, in the county of New Haven, Connecticut, and GEORGE W. BENTLEY, of Brooklyn, in the county of Kings, New York, have invented, made, and applied to use an Improved Machine for the Manufacture of Wash-Boilers; and that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawing, making part of this specification, and to the letters of reference marked thereon, in which—

Figure I is a side elevation of our invention. Fig. II is a top view of the same. Fig. III is an end view of the same. Fig. IV is a transverse section of the same, showing the cam governing the position of the frame K.

In the drawing like parts of the invention are designated by the same letters of reference.

The nature of the present invention consists in the construction, as more fully hereinafter set forth, of an improved machine for the manufacture of wash-boilers; the object of the invention being the construction of a machine by which the operations of setting in the bottom into the body of the wash-boiler, and wiring the top of the boiler, shall be expeditiously and cheaply done.

To enable those skilled in the arts to make and use our invention, the following description will be sufficient.

A shows the frame of the machine, serving to support its operative parts. B is the main or driving shaft, inserted in boxes in the frame A, and having keyed upon it a pinion, C, gearing into the cog-wheels D and D². D is a cog-wheel keyed upon a shaft, E, inserted in boxes in the frame A, and on the opposite end of this shaft is secured the cam F. D² is a cog-wheel keyed upon the shaft G, inserted in boxes in the frame A. Upon this shaft G is secured a head or form, H, one portion of which is provided with the teeth I, as shown, and upon this shaft G are secured the forming-heads J. K shows a secondary frame attached to the lever L, which lever L is attached, in turn, to an upright, M, swiveled at its lower end to the standard N, and provided with a stud and roller, O, playing in the cam F. P shows a flat spring, attached at its lower end to the

frame A, while its upper end bears against the upright M. The frame K is provided with the hangers Q, which hangers support the shaft R, and also the shafts S and T. Upon the shaft R are secured the faced roller U, provided with gearing engaging with the gearing upon the form H, the pinion V gearing into a pinion, W, secured upon the shaft S, the heads or rolls X X² having a bearing upon the forming-heads J, and the pinion Y gearing into the pinion Z upon the shaft T. Upon the shaft S is also placed a roll, 1, and upon the shaft T is placed the roll 2. Attached to an eye secured in the frame K is one end of the belt or chain 3, the opposite end of which is attached to the bar 4, swiveled at one end to the frame A. 5 shows pulley attached to the frame A, over which the belt or chain passes. The object of the belt or chain and bar is to enable the operator to elevate the frame K, when desired, by depressing the forward end of the bar 4.

Such being the construction, the operation is as follows: The frame K is elevated by the operator by depressing the forward end of the bar 4, to which is attached one end of the belt or chain 3, the opposite end of the same being attached to the frame K, so that, as the bar 4 is depressed, the belt or chain 3 is drawn down with the bar, and the frame K is raised. The body of the wash-boiler, which is formed of a section of a cylinder, is now placed by the operator upon the forming-head J, and the frame K is now lowered by relieving the hold upon the bar 4 until the rolls X X² shall bear upon the body of the wash-boiler. Motion is now communicated to the driving-shaft B, which, through the pinion C, secured upon it, and gearing into the cog-wheels D and D², as shown, causes the shafts E and G to revolve. As the shaft E revolves it carries with it the cam F, and as the shaft G revolves it carries with it the head H. This head H gears into the gearing upon the faced roller U upon the shaft R, and sets the same in motion, which, in turn, through the pinion V engaging with the pinion W, operates the shaft S, and, through the pinion Y gearing into the pinion Z, operates the shaft T. With the body of the boiler in position upon the forming-heads J, the roll

2 upon the shaft T having a bearing upon the metal of which the same is composed at one end, turns the metal out and up from the horizontal position into a vertical, or nearly vertical, position, ready for the bottom of the boiler to be received. The frame K is now elevated, as already described, and the machine is stopped that the bottom may be inserted in one end of the body of the boiler. The bottom having been inserted and the frame K lowered, as already described, the machine is again set in motion, and the roll X² upon the shaft R bears upon the edge of the bottom, and turns the same over the upturned or burred portion of the body of the boiler. The body of the boiler and the bottom may now be slipped or adjusted in position upon the forming-heads J sufficiently to give the roll X² a bearing upon its entire lower edge within which the bottom is contained, and the motion of the machine continuing, the projecting metal is flattened or set down to the boiler by this roll X².

During the operation just described the second operation of wiring the head or upper portion of the boiler is also being performed. The roller X is grooved and the roller 1 is filleted at one end, which filleted end is brought into line with the grooved roller by shifting the roller 1 into position by the shifter 10, and, as the top end of the boiler is received between the filleted roller 1 and the grooved roller X, the metal is turned up and over and around the wire inserted between these rollers, said operation arising from the metal being re-

ceived between the fillet and groove in the rollers. This completes the operation, and, the machine having been stopped, the boiler may be removed.

During the operations just recited the cam F has caused the frame K, with its adjuncts, to maintain a proper position relatively to the heads J for the operation of the machine.

It will be seen that by the employment of the machine boilers can be expeditiously made, and that the cost of such manufacture is greatly reduced, while uniformity of manufacture is secured.

Having now set forth our invention, what we claim as new is—

1. The combination of the forming-heads J with the geared head H, and the frame K, provided with the rolls X X² and rolls 2 and 1, when the same shall be constructed and operated substantially as and for the purposes set forth.

2. The combination, with the frame K, of the lever L, swiveled upright M, cam F, and belt 3, and bar 4, substantially as and for the purposes described.

JAMES E. WELLS.

In presence of—

JOHN S. TURRILL,
SILAS ERWIN.

GEORGE W. BENTLEY.

Witnesses to signature of G. W. BENTLEY:

A. SIDNEY DOANE,
WM. HASTINGS.