

(No Model.)

H. S. REYNOLDS.
MACHINE FOR FORMING WIRE BAILS.

No. 520,864.

Patented June 5, 1894.

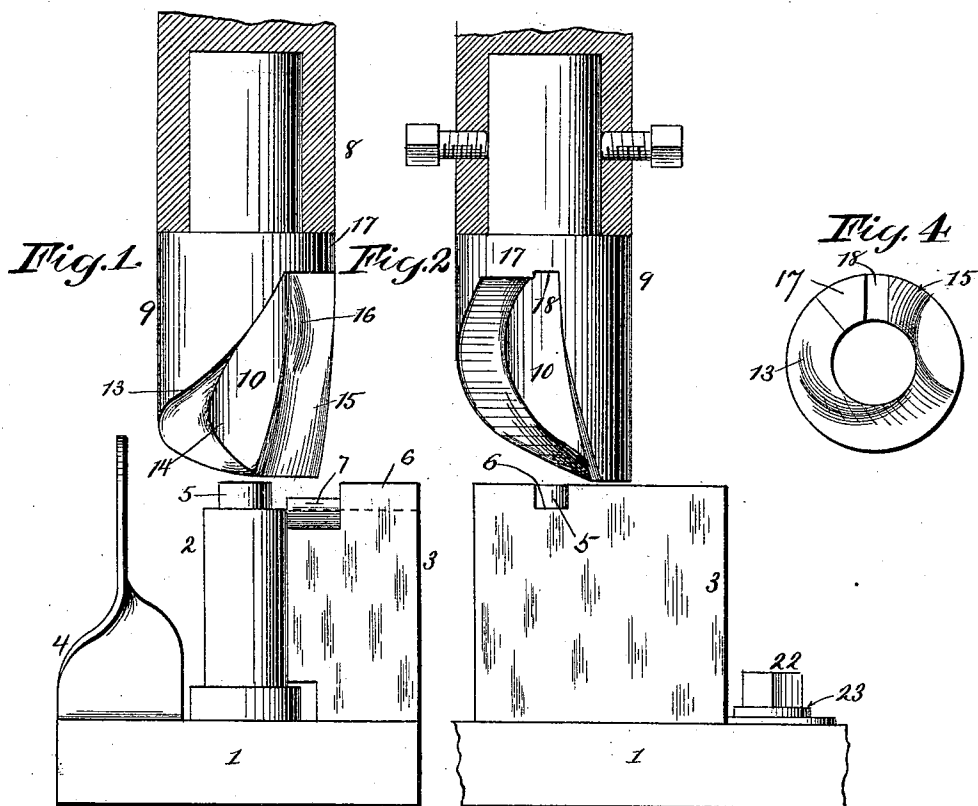
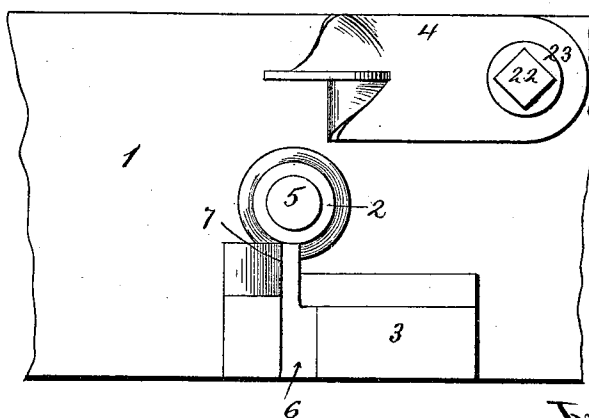


Fig. 3.



Witnesses:

Wm. Gardner
Frederic Canavan

Inventor:

Henry S. Reynolds
By *Emmet C. Webb* atty

UNITED STATES PATENT OFFICE.

HENRY S. REYNOLDS, OF BROOKLYN, NEW YORK.

MACHINE FOR FORMING WIRE BAILS.

SPECIFICATION forming part of Letters Patent No. 520,864, dated June 5, 1894.

Application filed April 4, 1892. Serial No. 427,716. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. REYNOLDS, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Machines for Forming the Ends of Wire Bails, of which the following is a specification.

My invention relates to certain improved machinery for forming the circular ends of wire bails for vessels, such as pots, pails and the like, and has for its object the formation of such circular ends rapidly, accurately and economically.

To this end my invention consists in the especial mechanism hereinafter more fully and particularly described and pointed out in the claims.

Referring to the drawings, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation of the tool. Fig. 2 is a front elevation. Fig. 3 is a top plan view of the base-plate and its attachment. Fig. 4 is a bottom plan view of the plunger or former, and Fig. 5 is a portion of a bail having a circular end ready to be secured in the ears of a vessel, formed in accordance with my invention.

1 is the base plate having rigidly mounted thereon the mandrel 2, the wire guide 3, and the adjustable wire gage 4. The mandrel 2 consists of an upright pillar or post having at its top the reduced circular portion 5. The wire guide is provided with a slot 6, of considerably greater width than the size of wire forming the bail. On the mandrel side of the guide proper, and in line with the diameter of the circular portion 5 of the mandrel, the bottom of the slot is extended or projected as far as the mandrel 2, and is provided with the shoulder 7, preventing any distortion of the bail near the circular end.

The plunger or former consists of the rod 8, and the tool 9 is interiorly hollowed as at 10, and having one of the walls surrounding said hollow or recess 10, spirally cut away, as at 13, the inner side 14 of said wall describing a greater curve than the outer wall thus producing a general screw action upon the descent of the tool. The opposite wall 15 of said tool is more or less cam-shaped, as shown, having at the inner side and near the top

thereof the cut-away bend, arc or chamfer 16 (Fig. 1). These walls 13 and 15 do not join at the top but are separated by the horizontal integral ring-shaped portion 17, provided with a slot or recess 18, which, on the full stroke is in line with the slot 6, in the wire guide 3, affording a passage-way for the unmanipulated wire of the bail.

The operation of my device is as follows:—The wire for the bail being first cut off to the required length, one end is introduced through slot 6 in guide 3 and inserted past the circular portion 5 of mandrel 2, opposite to the shoulder 7, until it strikes the adjustable gage 4. The drop is then sprung and the end of the wire is engaged by the spirally cut wall 13 of tool 9, and twisted about the circular extension 5 of the mandrel, producing the inner curve 19 of the wire, and upon the further descent of the tool, the opposite cam-shaped wall 15 of said tool provided with the bend, arc or chamfer 16, produces the outer curve 20 on the bail, (Fig. 5,) the unmanipulated portion of the wire extending through slot 18 of the tool and through the slot 6 of the guide. The adjustment of the gage 4 is such that the wire at the end of the bail does not describe a complete circle, but is left with the opening 21 (Fig. 5), affording a ready attachment to the ears on the vessel body. The guide 4, may be of any suitable or desirable construction, but I prefer to use a piece of angle-iron having its upwardly projecting portion curved or twisted to present a flat surface against which the end of the wire strikes and affording no obstruction to the end of the wire when subjected to the twisting action of the tool or plunger. This angle-iron may be secured to the bed-plate 1, through its horizontal portion by the jam nut 22, and washer 23.

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

1. A tool for forming the ends of wire bails for vessel handles, comprising an upright mandrel and a plunger adapted to surround said mandrel having a portion of its side cut away, the walls of said cut being curved to impart a screw action to the plunger, substantially as described.

2. A tool for forming the ends of wire bails for vessel handles, comprising an upright

mandrel and a plunger adapted to surround said mandrel, having a portion of its side cut away, one of the walls of said cut being spiral or screw shaped and the inner edge of said wall describing a greater spiral or curve than the outer edge, substantially as described.

3. A tool for forming the ends of wire bails for vessel handles, comprising an upright mandrel and a plunger adapted to surround said mandrel, having a portion of its side cut away, one of the walls of said cut being spiral or screw-shaped, and the other wall being substantially cam-shaped, substantially as described.

4. A tool for forming the ends of wire bails for vessel handles comprising an upright mandrel and a plunger adapted to surround said mandrel, having a portion of its side cut away, one of the walls of said cut being spiral or screw-shaped, and the inner edge of said wall describing a greater spiral or curve than the outer edge, and an opposite wall substantially cam-shaped, substantially as described.

5. A tool for forming the ends of wire bails for vessel handles comprising an upright mandrel, a plunger adapted to surround said mandrel having a portion of its side cut away, one of the walls of said cut being spiral or screw-shaped and the inner edge of said wall describing a greater spiral or curve than the outer edge, and an opposite cam-shaped wall provided on its inner edge with a bend, arc or chamfer, substantially as described.

6. A hollow plunger having a portion of its side cut away, one of the walls of said cut being spiral or screw-shaped and the opposite wall cam-shaped, said walls approaching each other at the top of the plunger and provided with the intermediate slot or recess, in combination with a mandrel adapted to be surrounded by said plunger substantially as described for the purposes set forth.

7. A tool for forming the ends of wire bails for vessel handles, comprising an upright mandrel, a plunger adapted to surround said mandrel having a portion of its side cut away,

one of the walls of said cut being spiral or screw-shaped and the inner edge of said wall describing a greater spiral or curve than the outer edge, and an opposite cam-shaped wall provided with a bend, arc or chamfer on its inner edge, said walls approaching each other at the top of the plunger but separated at that point by an integral ring-shaped portion provided with a slot or recess, substantially as described.

8. A tool for forming the ends of wire bails for vessel handles comprising a slotted wire guide, an upright mandrel in line with a portion of the slot in said guide and a screw acting plunger, substantially as described.

9. A tool for forming the ends of wire bails for vessel handles comprising a slotted wire guide, the bottom of said slot and one side thereof being prolonged to an upright mandrel, in combination with a screw acting plunger, substantially as described.

10. A tool for forming the ends of wire bails for vessel handles, comprising a slotted wire guide, the bottom of said slot and one side thereof being prolonged to an upright mandrel, in combination with a plunger adapted to surround said mandrel and having a portion of its side cut away, one of the walls of said cut being spiral or screw-shaped, and the inner edge of said wall describing a greater spiral or curve than the outer edge, and an opposite cam-shaped wall provided with a bend, arc or chamfer on its inner edge, said walls approaching each other at the top of the plunger, but separated at that point by an integral ring-shaped portion provided with a slot or recess, and a gage to limit the insertion of the wire, all combined and arranged to operate, substantially as described.

Signed at New York, in the county of New York and State of New York, this 30th day of November, A. D. 1891.

HENRY S. REYNOLDS.

Witnesses:

FREDERIC CANAGAR,
ERNEST C. WEBB.