

J. FRASER & T. GRAY.
MACHINE FOR EDGING METALLIC PLATES.
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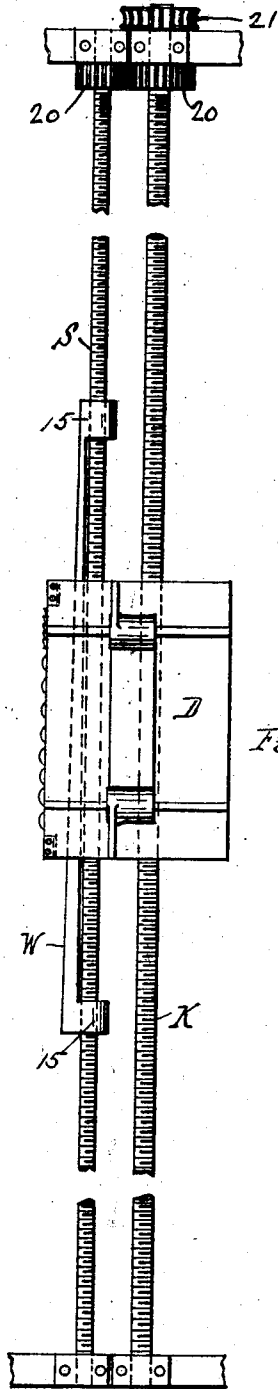


Fig. 2

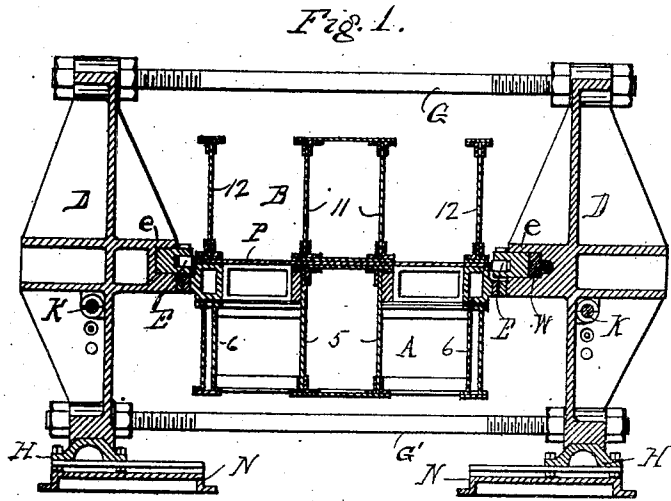


Fig. 1.

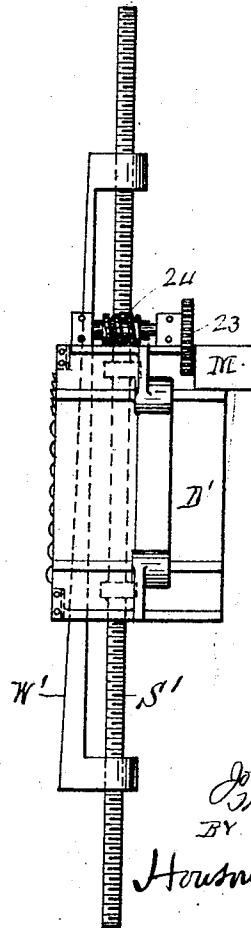


Fig. 3.

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MACHINE FOR EDGING METALLIC PLATES.

936,109.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed October 22, 1908. Serial No. 459,051.

To all whom it may concern:

Be it known that we, JOHN FRASER, a citizen of the United States of America, residing in Hackensack, in the county of Bergen, in the State of New Jersey, and THOMAS GRAY, a subject of the King of Great Britain and Ireland, residing in Paterson, in the county of Passaic, in the State of New Jersey, have invented certain new and useful Improvements in Machines for Edging Metallic Plates, of which the following is a specification.

Our invention relates to machines for planing or otherwise operating upon the edges of metallic plates, more particularly to prepare them for the manufacture of pipes, tanks and other tubular objects by bending the plates and joining the edges together with lock bar joints longitudinally of the joints.

The main object of our invention is to so construct such a machine that the plates shall be automatically planed on the sides to a slightly tapering width longitudinally, so that when the plates are rolled up and joined by the lock-bars into tubular form, each tube section will be of slightly smaller diameter at one end than at the other, and it becomes possible to fit the small end of one section within the large end of another section.

In the accompanying drawings Figure 1 is a transverse section of a plate edging machine to which our improvement has been applied; Fig. 2 is a plan view of the parts on one side of the machine; Fig. 3 is a similar view of a modification.

In Figs. 1 and 2, we have shown our improvement as applied to an edging machine of the type in which the table and clamping frame for the plate are stationary and the tool standards travel, the tool standards being tied together above and below the table by tie rods, as described in our application for patent Serial No. 444,858, filed July 22, 1908. In Fig. 3, we have indicated the application of our invention to the construction of machine forming the subject of our Patent 897,256, dated August 25, 1908 and in which the table and clamping frame holding the plate travel while the tool standards on opposite sides of the table and connected together above and below the table by tie rods, are stationary.

In the construction illustrated by way of example in Fig. 1, A is the work table,

which may be built up of longitudinal beams or girders 5 and 6, and supported in a stationary position upon masonry at its opposite end, as described in our said application Serial Number 444,858. A suitable clamping frame B, which may be composed of beams 11, 12 clamps the plate P upon the table with its edges in position to be operated on by the tools E. These tools, which may be the usual planing and up-setting tools are held in horizontal guides *c* on the inner faces of the two tool standards D, adjustably tied together above and below the work table by tie rods G, G¹. In the construction of machine shown in this figure the travel of these tool standards longitudinally of the work table and work is provided for by mounting the standards to slide upon longitudinal guide ways H, H, laterally adjustable by any suitable means upon bed plates N; the feed mechanism includes two longitudinal screw-threaded rods K, K, (see also Fig. 2) mounted in fixed bearings in the frame and threaded into suitable feed nuts held in the standards D, D. These feed screws may be driven by any suitable means, such as a worm and worm wheel motion 21, Fig. 2.

The construction so far described corresponds in all essential respects with the construction disclosed in our said application Serial No. 444,858. In order to construct such a machine to make plates of tapering width as before explained, we introduce within the guides *c* in the standard on one side of the machine, and back of the tools E, a long wedge W, Figs. 1 and 2. The opposite ends of this wedge W have lugs threaded for the reception of a threaded feed screw S, which is mounted in bearings in the end frames (Fig. 2) and may be driven by gears or pinions 20 from the adjacent feed screw K. The relative pitches of these two feed screws K and S are such as to cause the wedge to travel slowly through the standards D, while the latter is traveling from end to end of the planer bed. The resulting action of the wedge will thus force the tools laterally in the direction of the plate or allow them to be pressed outwardly. The action of the wedge will be constant to give a corresponding uniform taper to the plate. If a different taper is required, a different wedge will be put into the machine. These wedges may be applied to both sides of the machine, but the application of the

wedge to one standard, as described, is sufficient.

In Fig. 3, the tool-carrying standard D¹, shown in plan view, is supposed to be stationary for use in connection with a longitudinally traveling work table. The wedge W¹ is arranged as before back of the tools in the standard and fed longitudinally by a rotating feed screw S¹ which may be driven from a motor M through gearing 23 and worm and worm wheel 24.

We claim as our invention:

1. A machine for edging plates having a thrust producing tool, an abutment member adapted to take up the thrust of the latter, in combination with means interposed between said tool and its abutment whereby said tool is advanced or allowed to retreat as the work progresses along the plate to produce a plate tapering in width, said interposed means being suitably arranged to transmit the thrust of the tool to the abutment member.

2. A machine for edging plates having a thrust producing tool, an abutment member adapted to take up the thrust of the latter, in combination with wedge means interposed between said tool and its abutment and adapted to transmit the thrust of said tool to said abutment, together with means to move said wedge means and tool with relation to each other as the work progresses along the plate so as to produce a plate tapering in width, substantially as described.

3. A machine for edging plates having a thrust producing tool, an abutment member adapted to take up the thrust of the latter and provided with a guide way in which said tool may move to and from the work, in combination with a wedge member interposed in said guide way between said tool and abutment member, and means whereby said wedge member and tool are moved with relation to each other as the work progresses along the plate whereby the tool advances or recedes so as to form a plate tapering in width, substantially as described.

4. A machine for edging plates having a thrust producing tool, an abutment member adapted to take up the thrust of the latter and provided with a guide way in which said tool may move to and from the work, in combination with a wedge member interposed in said guide way between said tool and abutment member, and means whereby said wedge member is moved past said tool as the work progresses along the plate whereby the tool advances or recedes so as to form a plate tapering in width, substantially as described.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses.

JOHN FRASER.
THOMAS GRAY.

Witnesses:

JOHN H. WINANT,
JULIA DEMAREST.