R. C. NUGENT.

Machine for Turning Flanges on Boiler-Heads.

No. 166,715. Patented Aug. 17, 1875.

Fig. 1.

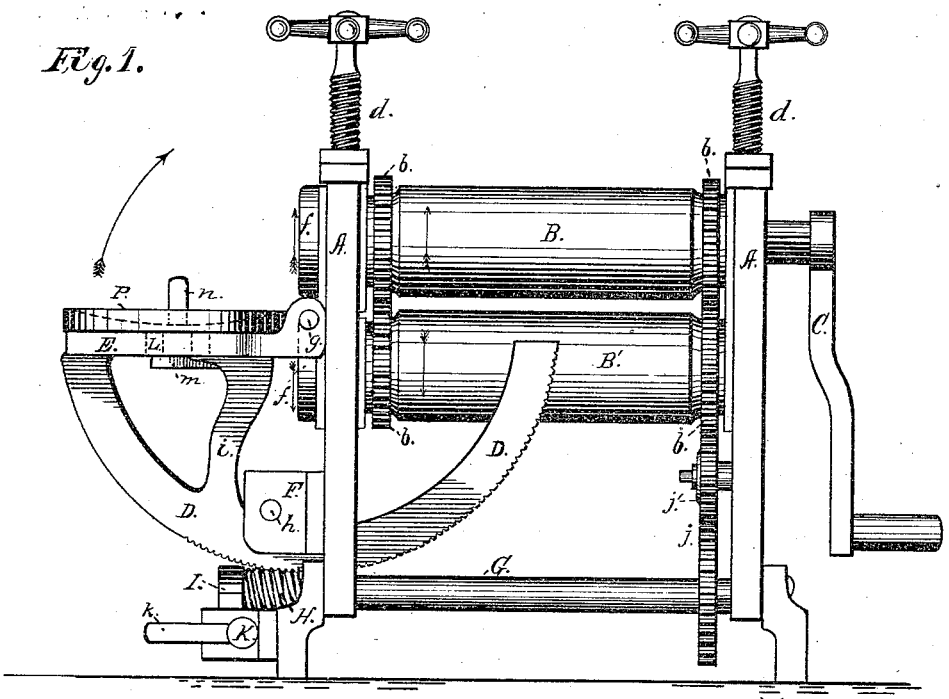


Fig. 2.

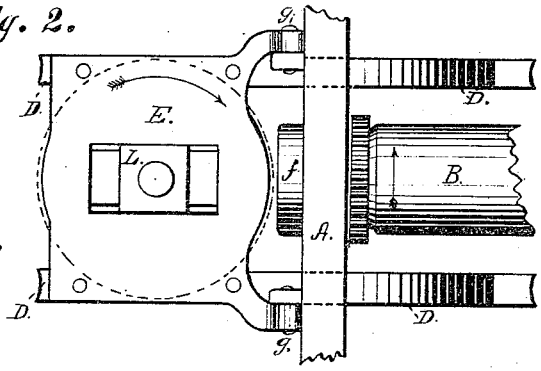


Fig. 3.

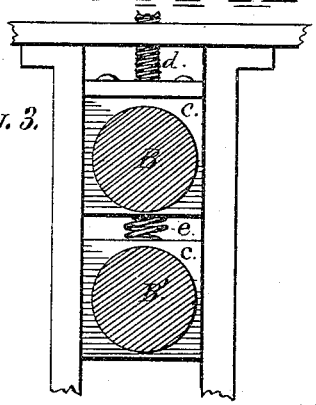


Fig. 4.

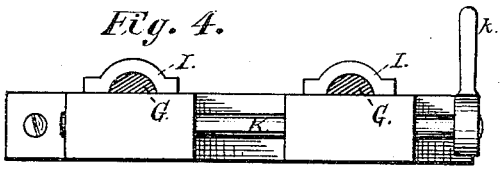
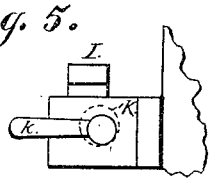


Fig. 5.



Witnesses;
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UNITED STATES PATENT OFFICE.

RICHARD C. NUGENT, OF DAYTON, OHIO, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO WILLIAM R. SPICKLER AND HENRY H. HENDRICK, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR TURNING FLANGES ON BOILER-HEADS.

Specification forming part of Letters Patent No. **166,715**, dated August 17, 1875; application filed June 30, 1875.

To all whom it may concern:

Be it known that I, RICHARD C. NUGENT, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Machines for Turning Flanges on Boiler-Heads; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of my invention is to provide a machine for flanging circular boiler-heads in a simple and rapid manner without subjecting the heads to the liability of strains and flaws, as is the case in most methods now in use for this purpose.

The improvements consist in the novel combination and arrangement of an adjustable rotating feeding-disk with a pair of ordinary rollers suitably arranged and connected, as will be hereafter described.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I would thus describe it, referring to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved machine. Fig. 2 is a plan view of the adjustable feeding-table. Figs. 3, 4, and 5 represent minor devices, which will be referred to respectively.

Corresponding letters of reference indicate like parts.

A A represent the frame of the machine, of any suitable shape and proportions, for supporting in their journals two adjustable rollers, B B′, arranged the one directly above the other. These rollers are connected by gear-wheels *b*, and are driven by any suitable power, a crank, C, being represented in the drawing. The journal-boxes *c*, Fig. 3, are adjustable in their bearings, and are operated by means of the screws *d*, and a spiral spring, *e*, set between them for the purpose of keeping them apart. These rollers are designed for any of the uses for which plain rolls are employed. An improvement, however, consists in having their ends project from six to ten inches beyond the outside face of the frame-work, as seen at *f f*, Figs. 1 and 2. D D represent two segments, to which are bolted a table, E, pivoted at *g*, which point is the center of the circle from which the segments are taken. These segments pass through the side of the frame-work, and are guided and work upon rollers *h* in bearings F. Their downward motion is limited by the braces *i*, at a point when the table E is perfectly horizontal. G is one of two shafts, the ends of which are seen in Fig. 4, suitably journaled in the frame-work parallel to the rollers B B′, from which they receive motion by means of connecting gearing *j j′*. Their forward ends are provided with worms H, which operate the segments D, whose under sides are geared to correspond. The forward journals I, in which the worms revolve, are adjustable up and down in boxes, and are placed upon an eccentric or cam shaft, K, Figs. 4 and 5. This shaft has a handle or crank, *k*, for turning it, by doing which the worms are thrown into or out of gear with the segments. L, Fig. 2, is an adjustable bearing-block, confined in ways in the table E and and clamped by means of a nut, *m*. This block is the pivotal bearing, in which the central stud of the feeding-disk P works. The disk is concave on its upper surface, and has projecting centrally from it a pin, *n*, over which the boiler-head to be flanged is slipped, and by which it is pivoted.

The operation of my machine may be described as follows: The circular head, either heated or cold, is placed upon the bed-plate P, with the pin *n* projecting through a central aperture. The plate P is then adjusted upon the table, so as to have the edge of the head extend between the projections *f* of the rollers B B′, and the size of the flange may be regulated accordingly. The adjustable bearing L is now clamped securely in position and the upper roller brought down upon the head, so as to hold its edge tightly. The machine is now put in motion, the parts moving as indicated. The friction of the rolls upon the edge of the head is sufficient to keep it in constant revolution. The handle of the eccentric shaft K is now turned, throwing the worms into gear with the segments; and the table, carrying the head to be flanged, gradually turns upon its pivotal points *g*, in the direction in-

dicated by the arrow, until it assumes a vertical position, and thus the flange is formed. This operation is thoroughly and quickly accomplished, and in such a manner that there is no liability of injury to the head from strain, as is the case in forming flanges by dies and heavy pressure.

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

1. The concave carrying-disk P, arranged to revolve upon the adjustable pivot *n*, in combination with the shifting-table E, and the ends of a pair of rolls, B B′, substantially as and for the purpose specified.

2. The pivoted shifting-table E, provided with the adjustable bearing L, in combination with the segments D and worms H, substantially as described.

3. The segments D, in combination with the worm-shafts G, eccentrics K, boxes I, bearings F, and rolls B B′, when the respective parts are arranged to operate in the manner and for the purpose specified.

4. The combination and arrangement of the rolls B B′, disk P, bed-plate E, segments D, bearings F, worms H, boxes I, eccentrics K, shafts G, and connecting gearing *j j′*, the whole substantially as described.

Witness my hand this 24th day of June, A. D. 1875.

RICHARD C. NUGENT.

Witnesses:
CHAS. M. PECK,
J. P. WHITMORE.