

No. 627,444.

Patented June 20, 1899.

F. T. REID.
MANDREL HOLDER.
(Application filed May 9, 1898.)

(No Model.)

Fig.1

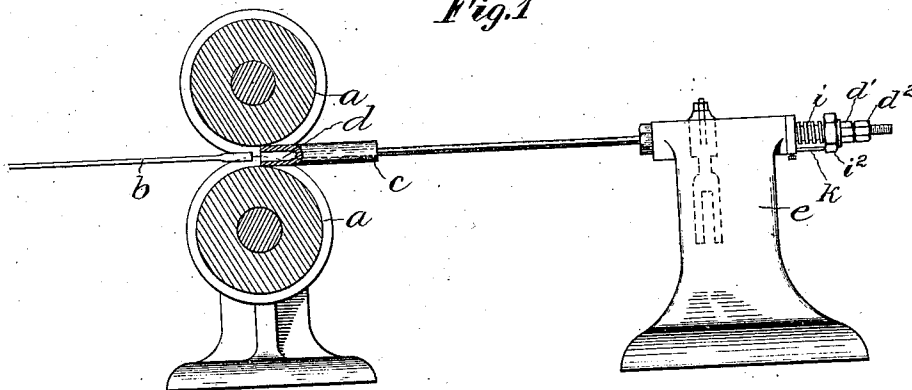


Fig.2

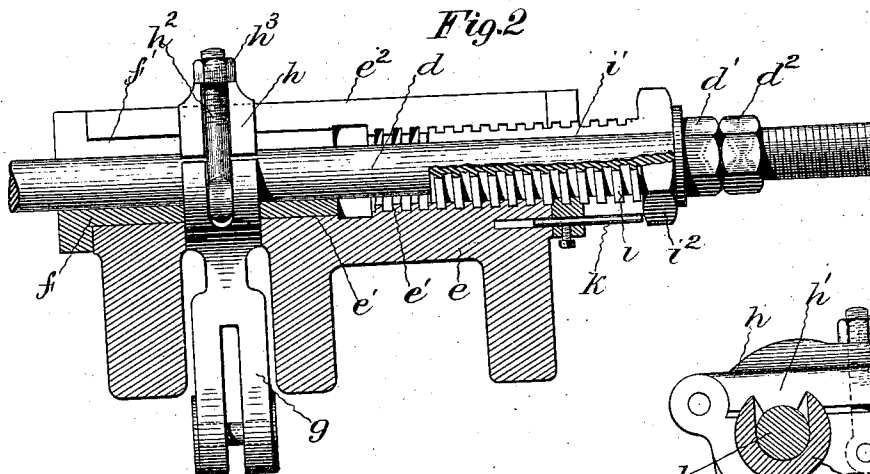
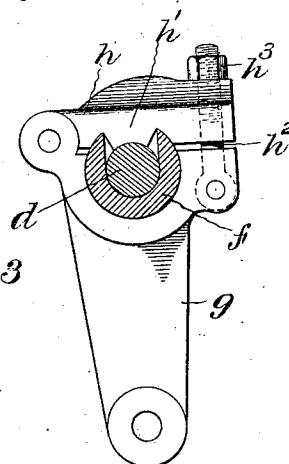


Fig.3



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UNITED STATES PATENT OFFICE.

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MANDREL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 627,444, dated June 20, 1899.

Application filed May 9, 1898. Serial No. 680,094. (No model.)

To all whom it may concern:

Be it known that I, FRED T. REID, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Rolling-Mills, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates more particularly to the class of mills used for reducing tubes; and the object of my invention is to provide means for ready removal of the mandrel over which the tube is formed and in a manner to avoid disturbing the adjustment of the mandrel with reference to the rolls.

To this end my invention consists in the device as a whole, in the combination of parts composing the device, and in the details of construction of parts and their combination, as hereinafter described and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a diagram view in section through a set of rolls and in side view of the mandrel-table, illustrating the use of my improvement. Fig. 2 is a detail view in section through the mandrel-table, showing my improved device. Fig. 3 is a detail view of the lever bearing the pivoted clamp.

In the accompanying drawings the letter *a* denotes a set of rolls, *b* the end of a mandrel located at one side of the rolls, and *c* a billet located on a mandrel *d* and being reduced in the form of a tube by the action of the rolls *a*, the mandrel *d* being located on the opposite side of the rolls from the mandrel *b* and supported at one end by a mandrel-table *e*.

In the operation of reducing a billet in the form of a tube the billet, located on a mandrel, is inserted between the rolls and is drawn off from one mandrel and passes onto another mandrel, this operation being repeated back and forth between the rolls until the billet has acquired the proper size. In this operation of forming the tube it is necessary that the mandrels shall be constantly located at a given point with reference to the rolls, this being done by means of an adjusting and lock nut located on the outer end of the mandrel. Prior to my invention when it has been nec-

essary to remove a mandrel for any purpose the nuts are removed from the end and the mandrel removed by a lengthwise movement in the mandrel-table. This requires considerable time in removing the nuts, and the adjustment of the mandrel with reference to the rolls is lost, which when the mandrel is again placed in position must be regained at the expense of much time. By the use of my improved invention the mandrel can be quickly removed or inserted in place, and in such removal and insertion the adjustment is maintained, so that in replacing the mandrel it assumes the position with reference to the rolls that it had before removal.

The mandrel-table *e* is preferably formed of metal having an opening *e'* extending across the table. A groove *e''* extends from this opening *e'* to the upper surface of the table, and a sleeve *f* is inserted in this opening from one edge of the table. A clamp-lever *g* extends upward through an opening made depthwise through the table, and a clamp *h* is pivoted to the upper end of this lever. This clamp is provided with a lug *h'*, formed to rest against the mandrel *d* to hold it in place, a clamp-bolt *h''* being pivoted to the lever and adapted to lie within a bolt-socket in the clamp-lever, the clamp-nut *h'''* on the upper end of the bolt being employed to hold the lever against the mandrel *d*. The clamp *h* is shown as mounted on the table by pivoting to the clamp-lever *g*; but it is obvious that this clamp may be mounted on the table in any desired manner and yet come within the scope of my invention, a pivoting to the lever not being essential. An adjusting-screw *i* is inserted in the opening *e'* in that edge of the table opposite the sleeve *f*, this adjusting-screw fitting the screw-threaded surface of the opening *e'*. This adjusting-screw has a hole for the reception of the mandrel *d*, and a groove *i'* extends from the central opening to the outer surface thereof. A groove *f'* is also located in the sleeve *f*, these grooves *f'* being adapted to register with the groove *i'* in the upper surface of the table.

It is to be understood that in an operative mill the table provided with the openings *e'* located side by side is also provided with all of the parts herein described located appar-

tenant to each opening. The adjusting-sleeve is provided with means for turning, in the form shown an enlargement i^2 being shaped in the form of a hexagon for the reception of a wrench, and the mandrel d is provided with an adjusting-nut d' for locating the mandrel in proper position with relation to the rolls and with a lock-nut d^2 for securing the adjusting-nut in position. A stop k is adjustably secured to the table for the purpose of determining the proper position of the adjusting-sleeve i , the enlargement i^2 of which may rest against this stop when the sleeve is in proper position of adjustment, the proper location of the adjusting-screw i having been determined by means of the stop k to locate the mandrel d in proper position with relation to the rolls. When it is desired to remove the mandrel for any purpose, the adjusting-screw is turned so that the grooves in the sleeve and table register, the clamp h being loosened for the purpose of allowing such removal. The approximate adjustment of the mandrel with relation to the rolls is effected by means of the nut d' and the final adjustment by means of the adjusting-screw i .

I claim as my invention—

1. A mandrel-table, a mandrel-socket in the table, a groove extending into said socket, and means located in the socket and having rotary movement to lock the mandrel against lateral displacement.

2. A mandrel-table, a mandrel-socket in the table, a groove extending into said socket whereby a mandrel may be inserted laterally thereof into the socket, and locking means located in the socket and having a groove

adapted to register with the groove in the table.

3. A mandrel-table, a mandrel-socket located in the table, a groove opening from said socket to the outer surface of the table, an adjusting-screw located in the socket and having a lengthwise opening for the reception of the mandrel, and a groove extending from the outer surface of the screw to the central opening therein.

4. A mandrel-table, a mandrel-socket located in the table, a groove opening from said socket to the outer surface of the table, an adjusting-screw located in the socket and having an opening for the reception of the mandrel, and means for retaining a mandrel in the socket in the table.

5. A mandrel-table, a mandrel-socket located in the table, a groove extending from said opening to the outer surface of the table, an adjusting-screw located in the mandrel-socket, and a swinging clamp closing the groove into the socket in the table.

6. A mandrel-table, a mandrel-socket located in the table, a groove extending from the socket to the outer surface of the table, a swinging clamp closing the mouth of the groove, an adjusting-screw located in the mandrel-socket, a mandrel-opening extending lengthwise through the screw and a groove extending from said opening to the outer surface of the screw.

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