S. DEAN.

ADJUSTING DEVICE FOR ROLLING MILLS.

APPLICATION FILED AUG. 26, 1908.

949,464. Patented Feb. 15, 1910.

Fig. 1

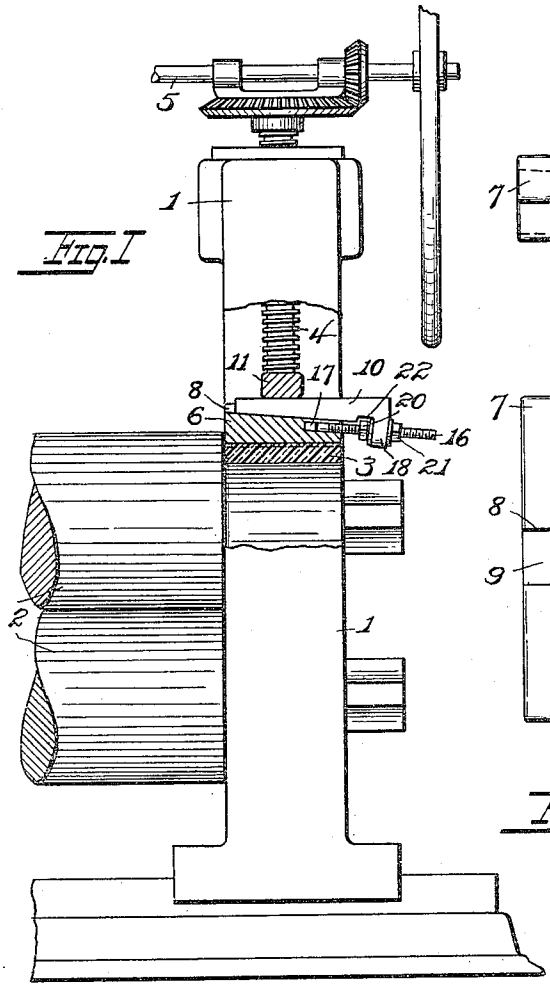


Fig. 2

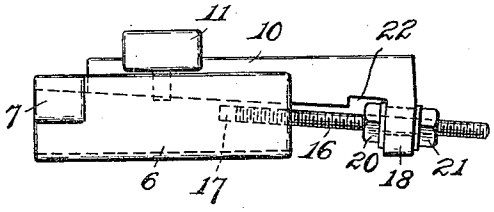


Fig. 3

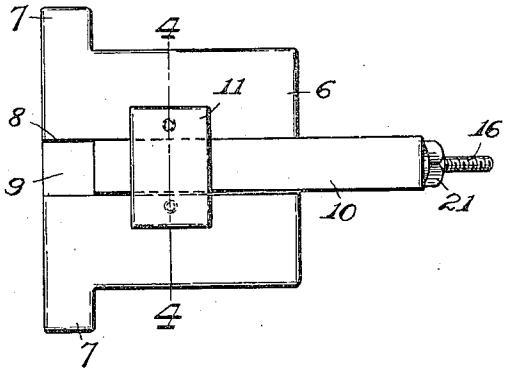


Fig. 4

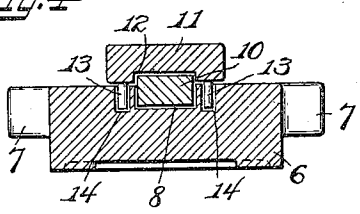


Fig. 5

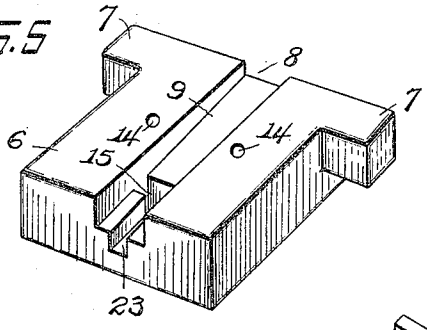


Fig. 6

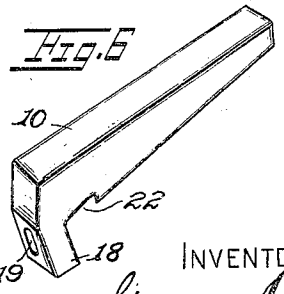
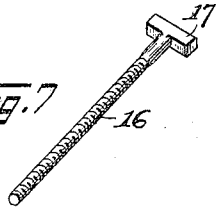


Fig. 7



WITNESSES:

H. E. Arthur

E. A. Leonard

INVENTOR

Simeon Dean

BY H. E. Davis

ATTORNEY

UNITED STATES PATENT OFFICE.

SIMEON DEAN, OF STEUBENVILLE, OHIO.

ADJUSTING DEVICE FOR ROLLING-MILLS.

949,464. Specification of Letters Patent. Patented Feb. 15, 1910.

Application filed August 26, 1908. Serial No. 450,320.

To all whom it may concern:

Be it known that I, SIMEON DEAN, a citizen of the United States of America, and resident of Steubenville, county of Jefferson, and State of Ohio, have invented certain new and useful Improvements in Adjusting Devices for Rolling-Mills, of which the following is a specification.

This invention relates to improvements in pressure-adjusting devices for rolling-mills, and it has for its principal object to provide means whereby the pressure-screws of a connected-screw rolling-mill may be quickly and conveniently adjusted for exerting an equal pressure upon the opposite ends of the rolls.

A further object of the invention is to provide a simple and inexpensive device by means of which any inequality in the pressure exerted by the opposite ends of the rolls may be readily and accurately corrected so that plates or sheets passed therethrough will be of an equal thickness on gage throughout.

With these and other objects in view, the invention finally consists in the particular construction, arrangement and combination of parts which will hereinafter be fully described, reference being herein had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a front elevation, partly in section, of a rolling-mill, illustrating the application of my invention thereto; Fig. 2 is an enlarged side elevation of the device which constitutes my invention; Fig. 3 is a top plan view of the same; Fig. 4 is a cross section on the line 4—4, Fig. 3; Fig. 5 is a perspective view of the rider; Fig. 6 is a similar view of the wedge; and—Fig. 7 is a similar view of the adjusting-bolt.

Referring to said drawing, in which like reference characters designate like parts throughout the several views—1 indicates a mill-housing, 2 the rolls, 3 the bearing brass which rests upon the neck of the upper roll 2, 4 the pressure-screw, and 5 the operating-shaft by means of which the connected screws 4 are simultaneously operated for setting the rolls.

Both ends of the mill are equipped with my improvement, but, since they are precisely alike, one end only of the mill is illustrated and but one will be described herein.

Mounted upon the brass 3 is a rider or bolster 6 having lateral ears or lugs 7 whereby it is retained in place in the housing in a manner well understood by those skilled in the art. Extending throughout the length of the upper face of said rider is a longitudinal groove 8 which is increased in depth as it approaches the outer end of the rider, forming an inclined bearing-surface 9 upon which rests the correspondingly inclined under face of a key or wedge 10 which fits neatly in and is slidable in said groove. Overlying said wedge 10 is a bearing-block 11 upon which the end of the pressure-screw 4 is adapted to seat and having a channel 12 in its under face for the reception of said wedge, and having on opposite sides of said channel integral dowel-like pins 13 adapted for engagement with correspondingly-shaped socket 14 provided in the rider on opposite sides of the groove 8 whereby said bearing-block is maintained against displacement with respect to said rider.

Provided in the rider 6 at the bottom of the groove 8 and adjacent to its outer end is a T-shaped recess, the cross-portion 15 of which lies transversely of said groove and the stem-portion 23 of which extends from said cross-portion to the outer end of the rider. Said recess is adapted for the reception of a T-shaped adjusting-bolt which consists of a longitudinal threaded stem 16 and an integral cross-head 17, the latter lying snugly in the cross-portion 15 while the stem lies in and projects outward from the stem-portion 23.

The key or wedge 10 is of greater length than the groove 8 in which it operates and its outer end stands at a distance beyond or away from the outer end of said rider, as shown. Said wedge has formed integral therewith at its outer end a downwardly-extended extension or lug 18 having an opening 19 therethrough through which the stem 16 of the adjusting-bolt is projected. Adjusting-nuts 20 and 21 are located upon the stem 16 on opposite sides of the lug 18 whereby said wedge may be adjusted and securely locked in position with respect to the rider. The wedge is preferably undercut, as shown at 22, to admit of the reception of the nut 20 and to admit of a certain range of movement of said nut with respect to the lug 18.

In practice, when it is desired to set the rolls so that an equal pressure will be exerted thereon by the pressure-screws at opposite ends of said rolls, one or the other of said adjusting-devices is manipulated to cause that end of the rolls to correspond with the

opposite end, in the following manner: One or the other of the nuts 20 and 21 is retracted with respect to the lug 18, according to the direction in which the wedge must be moved in order to effect the desired adjustment. Assuming that the wedge must be forced inward to effect the adustment, the nut 20 is threaded along said bolt away from the lug 18, this movement being permitted by the undercut 22. Then, using a wrench or other appropriate tool, the nut 21 is forced forward along the bolt, driving the wedge forward along the groove 8 in the rider. As is apparent, the bolt is immovable, and therefore movement of the wedge with respect to said bolt is movement with respect to said rider.

The opening 19 through the lug 18 is preferably in the form of a vertical slot so as to admit of a slight amount of vertical movement of the wedge with respect to said rider, this movement being rendered necessary on account of the body of the wedge standing at different levels when adjusted to different positions along the groove 8.

From the foregoing it will be seen that I provide an extremely simple device which may be quickly and conveniently operated for adjusting connected pressure-screws for exerting an equal pressure upon the opposite ends of the rolls of a rolling-mill.

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

In a connected-screw rolling-mill, the combination with a pressure-screw and the bearing-brass of a pair of rolls, of a bolster mounted upon said brass, said bolster having a longitudinal groove in its upper face and having sockets therein on opposite sides of said groove, said groove increasing in depth as it approaches the outer end of the bolster, a wedge having an inclined under face slidably mounted in said groove, a pressure block underlying the end of the pressure screw and overlying said wedge and having a channel in its under face in which said wedge is received, dowel-like pins carried by said block and seated in the sockets in the bolster, said wedge projecting outward from said groove and having a downwardly-directed integral extension on its outer end, said extension having an aperture therethrough, a T-shaped recess in said bolster at the bottom and adjacent to the outer end of said groove, the cross-portion of said recess lying transversely of said groove and the stem portion thereof extending from said cross-portion to the outer end of the bolster, a bolt having a T-shaped head lying in said recess in a stationary position and projecting outward from said bolster and through the aperture in said extension, said bolt being held in place by the overlying wedge, and adjusting nuts carried by said bolt on opposite sides of said extension whereby said wedge may be adjusted with relation to said bolt, said wedge being undercut adjacent to said extension for admitting of a certain range of movement of one adjusting nut with relation to said extension.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

SIMEON DEAN.

Witnesses:
THOMAS PARRY,
HARRY R. SHAW.