

(No Model.)

W. R. JONES.

ROLL HOUSING.

No. 388,049.

Patented Aug. 21, 1888.

Fig. 1.

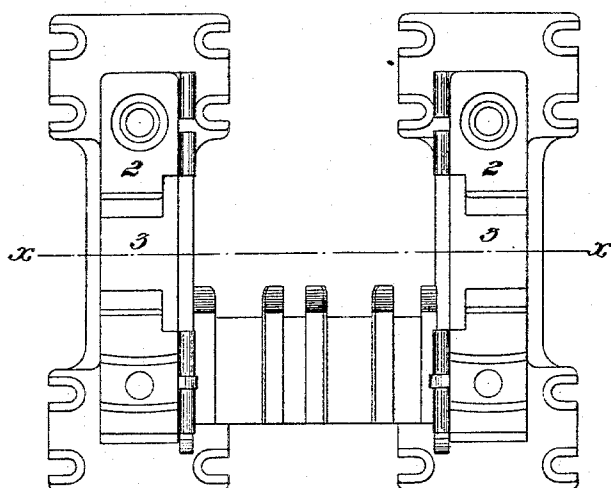


Fig. 2.

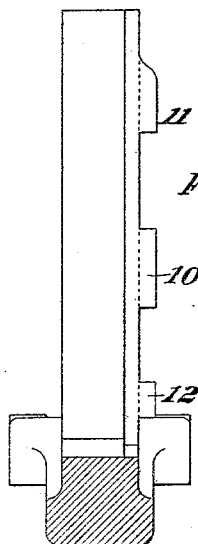


Fig. 3.

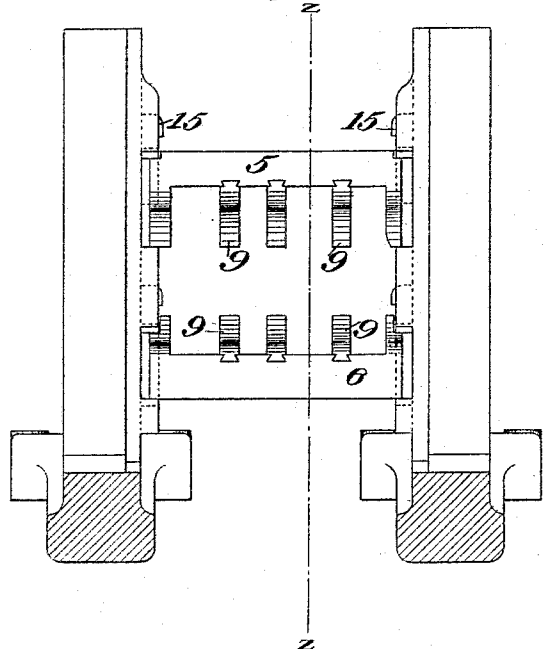
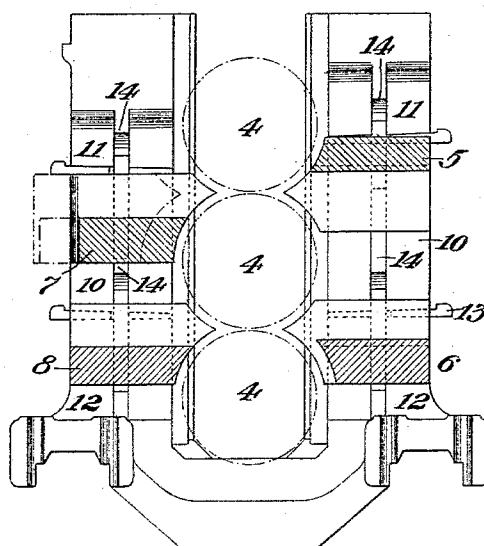


Fig. 4.



WITNESSES.

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ROLL-HOUSING.

SPECIFICATION forming part of Letters Patent No. 388,049, dated August 21, 1888.

Application filed April 10, 1888. Serial No. 270,239. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. JONES, of Braddock, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Housings for Rolls; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of the housings of a set of rolls illustrating my improvement. Fig. 2 is a vertical section thereof on the line xx of Fig. 1, showing one side of the housings without the rest-bars or guides, which are shown on the other figures of the drawings. Fig. 3 is a vertical cross-section on the line xx of Fig. 1; and Fig. 4 is a vertical cross-section on the line zz of Fig. 3, showing the rolls in the housing and the rest-bars and guards on both sides of the rolls.

In Fig. 1 the rolls are not shown, and only the rest-bars at one end of the housings are shown.

Like letters of reference indicate like parts.

In the drawings, 2 2 represent the upright housings of the rolls, and 3 are the vertical grooves on the housings, in which the bearings of the rolls 4 are adjusted, and 5, 6, 7, and 8 are the rest-bars, which are arranged across the housing parallel with the rolls, on both sides thereof, and are adapted to carry the guards 9 and the usual guides, by which the metal is directed in its passage through the rolls. It is to the arrangement and setting of these rest-bars on the housings that my invention relates.

Heretofore it has been customary in adjusting the rest-bars to set their ends in vertical grooves or recesses cast in the opposite inner faces of the housing and to hold them in place therein by means of vertical wedges driven in at their ends. With this construction it is necessary, in order to remove the rest-bars from the housings, to cant them vertically, so as to disengage the ends from the grooves in which they are confined. The rest-bars cannot be drawn out horizontally from the housings, because of the vertical grooves, and therefore, after the rest-bars and rolls have been put in place, it is impossible to remove any of the rest-bars without first removing the

rolls above them, and for a like reason it is impossible to remove any of the rolls without first taking out the overlying rest-bars. This is clearly illustrated by Fig. 4, in which it will be seen that the projection of the rest-bars and guards into the angles of the rolls is such that the rolls above would prevent the vertical motion of any of the rest-bars or guards, and the rest-bars and guards would prevent the vertical motion of any of the rolls below them. This is an evil of very great consequence in rolling-mill practice, because guides and guards often need to be repaired or renewed, and the time consumed in taking out the rolls, in order that the rest-bars may be removed, involving, as it does, the stopping of the mill, is a serious loss. So, too, when it is desired to remove the rolls, all the parts, rolls, bearings, and rest-bars must be taken out one by one, and in resetting them all the parts, including the rest-bars, must be adjusted singly in the order of their position.

In order to avoid the evils which I have indicated, and to save time and labor in the adjustment and removal of the parts from the housings, I have devised my present improvement. By it I am enabled to remove the rest-bars, guides, and guards without disturbing any of the rolls, and by first drawing the rest-bars with the guides and guards out of the way of the rolls (not necessarily removing them from the housings) I can lift all of the rolls and their bearings together from the housings by means of a crane and a suitable lifting device. These are advantages which have never been attained in any construction of roll-housings heretofore.

I have reduced my invention to practice, and have found it to be of very great utility for the reasons which I have noted, and for other reasons, which will be apparent to those skilled in the art.

My invention consists in housings made with horizontal projections or ledges on their opposing faces, on which the rest-bars may be set, and on which they are movable horizontally into and out of place in the housings. When they have been set in place I prefer to hold them by means of bars or keys, which are inserted in vertical grooves made in the projections or ledges and in the ends of the rest-bars. These keys are dropped in loosely, and are

only used as a safety arrangement to prevent the rest-bars being forced away from the housings by undue friction in the action of the rolls, or by some other accident. The rest-bars are held rigidly in place by means of horizontal wedge-bars inserted between the upper surfaces of the rest-bars and the inclined under sides of projections on the housings above the rest-bars.

Referring now to the drawings, 10, 11, and 12 are horizontal projections, which I cast on the inner faces of the housings. The rest-bars are inserted in place horizontally between these projections, the rest-bars 5 and 7 being set between the projections 10 and 11 and resting on the projections 10, and the rest-bars 6 and 8 being set between the projections 10 and 12 and resting on the projections 12. The under sides of the projections 10 and 11 are inclined, as shown in Fig. 4, and when the rest-bars are set in place they are confined by means of wedges 13, which are driven in the spaces between the surfaces of the rest-bars and the bottoms of the projections. As an additional security against displacement of the rest-bars, I employ keys 15 set in vertical grooves, 14, made in the sides of the housings and registering with grooves made in the ends of the rest-bars. The rest-bars are thus adjusted after the rolls have been set in place in the housings. If it is desired to remove any one of the rest-bars with its guides and guards, this can be done by taking out its keys 15 and wedges 13, and simply drawing back the bar horizontally from between the projections on the housings without necessarily moving any of the rolls or other rest-bars. If it is desired to remove the rolls, the keys and wedges are drawn out from the rest-bars, and they are pulled back on their supporting projections until the forward ends of the guards and guides clear the rolls. The housings are then left free to permit the removal of the rolls, which may, if desired, be taken out all at once. I have shown and claimed means for thus removing the rolls in another application for Letters Patent filed on the 10th day of April, 1888, Serial No. 270,238. This partial removal of the rest-bars is shown in Fig. 4, wherein I

have indicated by dotted lines the rest-bar 7 drawn back out of the path of the rolls without removing it altogether from the housings, and without first moving the rolls above. The arrangement of keys and wedges which I have shown for holding the rest-bars in position is convenient and affords great security. I do not, however, desire to limit myself thereto, since my invention is susceptible of many modifications without involving a departure from the essential feature thereof, which consists in setting the rest-bars on supporting projections or ledges in such manner as to admit their insertion and removal horizontally, as distinguished from confining them by means of vertical slots in the housings, as heretofore. By the use of the word "horizontally" in this connection I do not limit myself strictly to any precise direction of motion of the rest-bars, since I use the word only to distinguish my invention from the vertical grooves which have heretofore been employed to confine the rest-bars in the housings, and the nature and scope of my invention permit the projections to be somewhat inclined, if desired.

I claim—

1. Roll-housings having projections or ledges whereon the rest-bar is supported, and on which it is movable to or from the rolls, substantially as and for the purpose set forth.

2. Roll-housings having projections or ledges whereon the rest-bar is supported, and on which it is movable to or from the rolls, and upright keys, whereby the rest-bar is secured to the housings, substantially as and for the purpose set forth.

3. Roll-housings having projections or ledges whereon the rest-bar is supported, and on which it is movable to or from the rolls, and wedges insertible between the rest-bars and projections on the housing, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 9th day of April, A. D. 1888.

WILLIAM R. JONES.

Witnesses:

THOMAS N. BAKEWELL,
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