Oct. 11, 1938. J. A. SKOGSBERG 2,132,583

JIG

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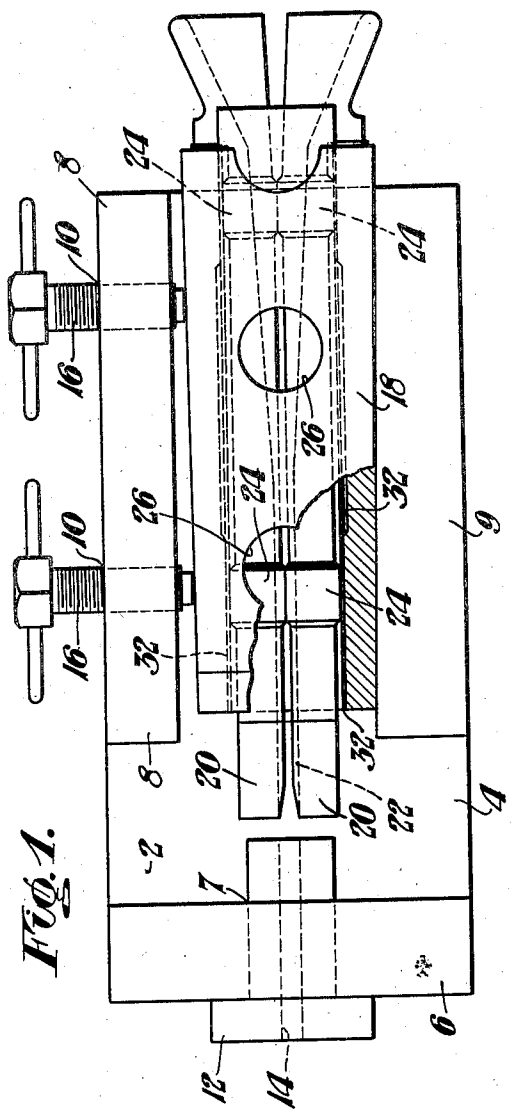


Fig. 1.

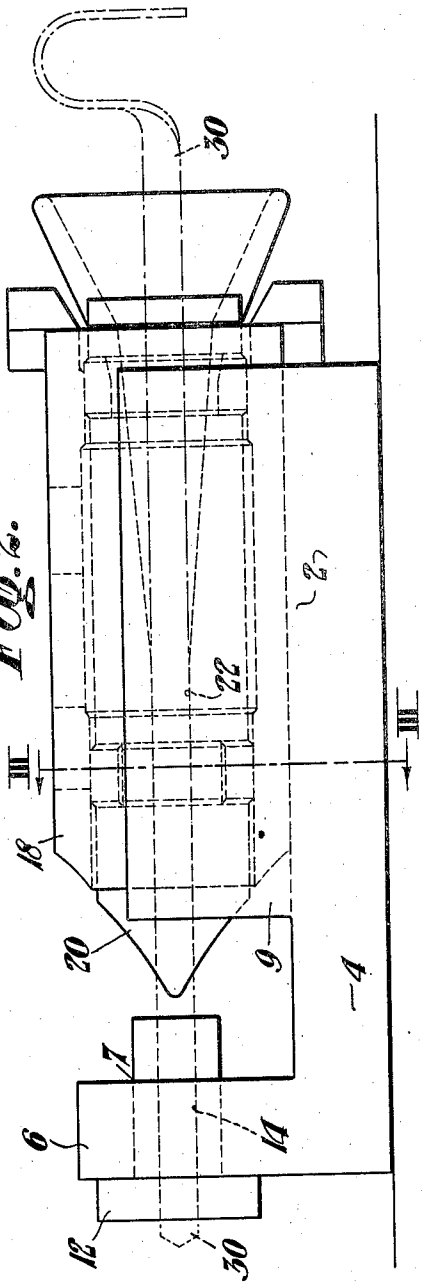


Fig. 2.

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Fig. 3.

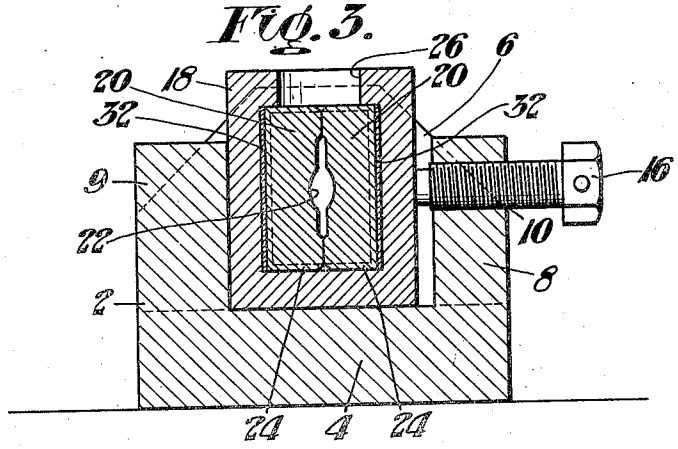
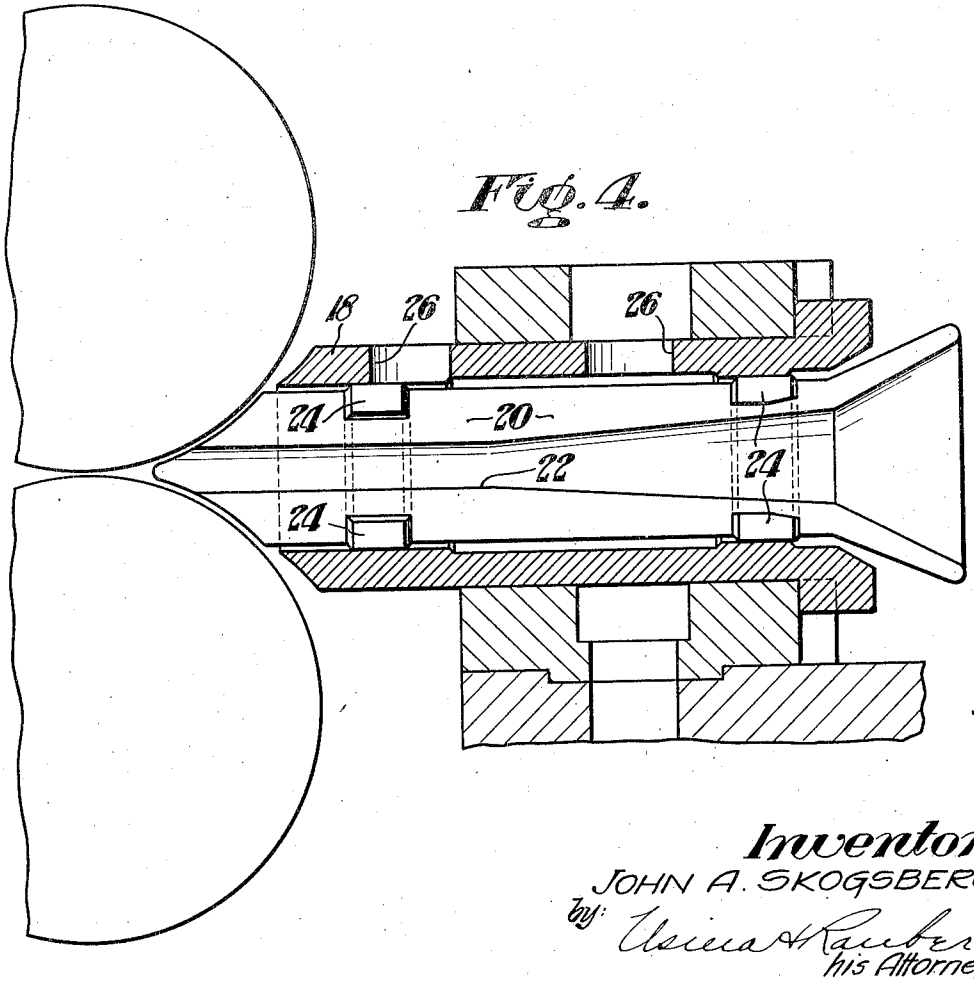


Fig. 4.



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UNITED STATES PATENT OFFICE

2,132,583

JIG

John A. Skogsberg, Worcester, Mass., assignor to The American Steel and Wire Company of New Jersey, a corporation of New Jersey

Application November 9, 1936, Serial No. 109,971

4 Claims. (Cl. 29—89)

This invention relates to jigs and more particularly to a jig for assembling the component parts of rolling-mill guides.

It is one of the objects of the present invention to provide a novel jig for assembling rolling-mill guide devices which will effect a substantial saving in the amount of time usually required to assemble and install guides in a rolling-mill.

Another object is the provision of a device of the class described which may be easily and cheaply manufactured and used in connection with guide devices of existing design.

The foregoing and other objects will become apparent after referring to the accompanying drawings, in which:

Figure 1 is a plan of a preferred embodiment of the device of the present invention;

Figure 2 is a side elevation of the device of Figure 1;

Figure 3 is a sectional view on the line III—III of Figure 2; and

Figure 4 is an elevation, partly in section, illustrating the manner in which the guide devices assembled by the jig of the invention are used on a rolling-mill.

Referring more particularly to the accompanying drawings, the numeral 2 indicates generally a jig having a flat rectangular body-portion 4. An upwardly extending flange 6 extends the width of one end of the body-portion 4 and is provided with an aperture 7. The flange 6 is preferably integral with the body-portion 4 and adjacent a pair of opposed flanges 8 and 9 that are on the longitudinal sides of the body-portion 4. The flange 8 has one or more tapped apertures 10 while the inside surface of the flange 9 preferably tapers inwardly toward the flange 6. Centering means, such as a plug 12, having an aperture 14 in one end thereof is provided to be used in conjunction with the jig 2. The plug 12 is adapted to fit in the aperture 7 in the flange 6 so that the aperture 14 faces and is aligned with the body portion 4.

A hollow rectangular guide-holder 18, having a slightly tapered outer surface, is placed on the body-portion 4 between the flanges 8 and 9 and clamped in position by screws 16 which extend through the tapped apertures 10 in the flange 8 and are adapted to bear upon the outer surface thereof, thereby forcing the guide-holder 18 against the flange 9. The exact construction of the flanges 8 and 9 is determined by the external construction of the guide-holder 18 which is to be placed between the flanges 8 and 9. The guide-holder 18 is adapted to receive two half-guides 20, whose height is such that they snugly fit in the guide-holder 18 but whose width is such that horizontal movement thereof in the guide-holder 18 is permitted. The half-guides 20 are so shaped that a longitudinal, substantially oval-shaped, aperture 22 is formed between them when they are placed together.

In order to provide space for circulating cooling fluid around the half-guides 20, they are provided with flanges 24. The flanges 24 extend around the circumference of the assembled half-guides 20 and preferably are adjacent the ends thereof. Cooling fluid is introduced to and exhausted from the space between the half-guides 20 and guide-holder 18 by means of apertures 26 in the guide-holder 18.

The aperture 14 in the plug 12 is of the same shape as the roll-pass at which the guide-holder 18 is to be used, and is in the same position in relation to the guide-holder 18, due to the construction of the jig 2, as the roll pass of the rolling mill when the guide-holder 18 is at its position at the mill. By adapting the jig 2 to positively position the half-guides 20 in the guide-holder 18 in the desired relation thereto before placing the guide-holder 18 in its fixed position at the roll-pass, a pre-alignment of the half-guides 20 and the roll-pass can be secured.

Means, such as a substantially oval-shaped rod 30, is passed through the aperture 22 and adapted to extend into the aperture 14, whereby the half-guides 20 are positively aligned with the aperture 14. In order to hold these two elements in alignment, suitable means, such as shims 32, are inserted between the flanges 24 of the half-guides 20 and the guide-holders 18. Thus, by positively aligning the aperture 22 between the two half-guides 20 with the aperture 14 and securing the two half-guides in that position, the half-guides 20 and the guide-holder 18 can be moved as a unit without changing the position of the half-guides 20. After the aperture 22 has been aligned with the aperture 14 and the half-guides 20 secured in their given positions, the rod 30 is withdrawn from the apertures. Next the screws 16 are loosened and the guide-holder 18 is removed from the jig 2. Then as the guide-holder 18 has a definite relationship to the roll-pass it is secured in such position, and the aperture 22 is, without further adjustment, aligned with the roll-pass.

By use of the jig 2 the slow and inefficient process of aligning the half-guides 20 with the roll-pass when the guide-holder is in its fixed position in relation thereto is no longer necessary.

It will be appreciated that the invention is not limited to the specific form illustrated and described but is actually defined in the appended claims.

I claim:

1. A jig for aligning half guides in guide holders comprising a body portion, an upwardly extending end flange having an aperture therethrough associated with said body-portion, a pair of opposed upwardly extending side flanges one of which is provided with tapped apertures therethrough associated with said body-portion, a centering plug having an aperture therein snugly received in said aperture in said end flange, screws engaged with said tapped apertures, the area defined by said flanges being adapted to receive a guide holder and two half-guides, and means cooperating with said apertured plug for positively aligning said half-guides with said aperture in said plug.

2. A jig for aligning half-guides in guide holders comprising a flat body portion, an upwardly extending end flange having an aperture therethrough associated with said body-portion, a pair of opposed upwardly extending side flanges carried by said body-portion, one of said side flanges having tapped apertures therethrough and the other of said side flanges having an inside surface tapering inwardly toward said end flange, a centering plug having a substantially oval-shaped aperture therein snugly received in said aperture in said end flange, screws engaged with said tapped apertures, the area defined by said flanges being adapted to receive a guide holder and two half-guides, said screws being adapted to adjustably clamp the guide holder in position, and means cooperating with said apertured plug for positively aligning said guides with said aperture in said plug, whereby said guides are so positioned in said holder that when said holder is placed in position at its roll-pass said half-guides are aligned therewith.

3. A jig for aligning half-guides in guide holders comprising a flat rectangular body portion, an upwardly extending end flange having an aperture therethrough associated with said body-portion, a pair of opposed upwardly extending side flanges integral with said body portion, one of said side flanges being provided with two tapped apertures therethrough and the other an inside surface tapering toward said end flange, a centering plug having a substantially oval-shaped aperture therein at one end and a circular flange at the other end snugly received in said aperture in said end flange, screws engaged with said tapped apertures, the area defined by said flanges being adapted to receive a guide holder and two half-guides, said screws being adapted to adjustably clamp said guide holder in position, and a metal rod cooperating with said apertured plug for positively aligning the guide way formed by said half-guides with said aperture in said plug whereby when said guide holder is positioned at its roll-pass said guide way is aligned therewith.

4. Apparatus for positioning half-guides in guide holders comprising, in combination, a substantially U-shaped jig provided with a bar having an aperture therethrough across one of the sides of said jig and tapped apertures extending through one of the arms of said jig, a centering member positioned in said aperture in said bar and provided with an aperture in one end thereof, screws engaged with said tapped apertures, the area defined by said flanges being adapted to receive a guide holder and two half-guides, said screws being adapted to adjustably clamp the guide holder in position, means for positively aligning said half-guides with said aperture in said centering member, and means for securing said half-guides in such aligned position.

JOHN A. SKOGSBERG.