

J. R. RICHARDSON.
 DEVICE FOR POLISHING CURVED SURFACES.
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989,291.

Patented Apr. 11, 1911.

Fig. 1.

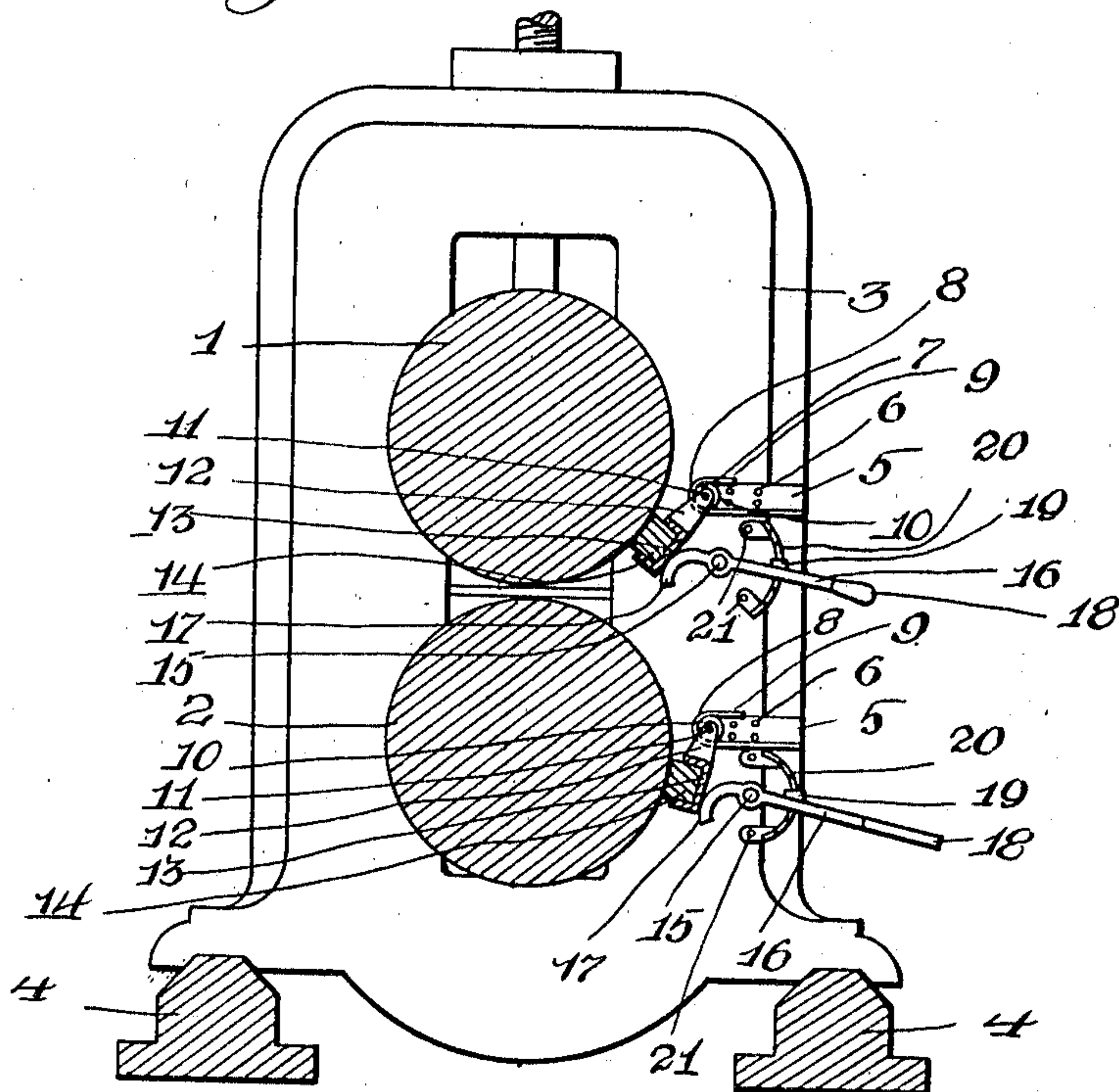


Fig. 2.

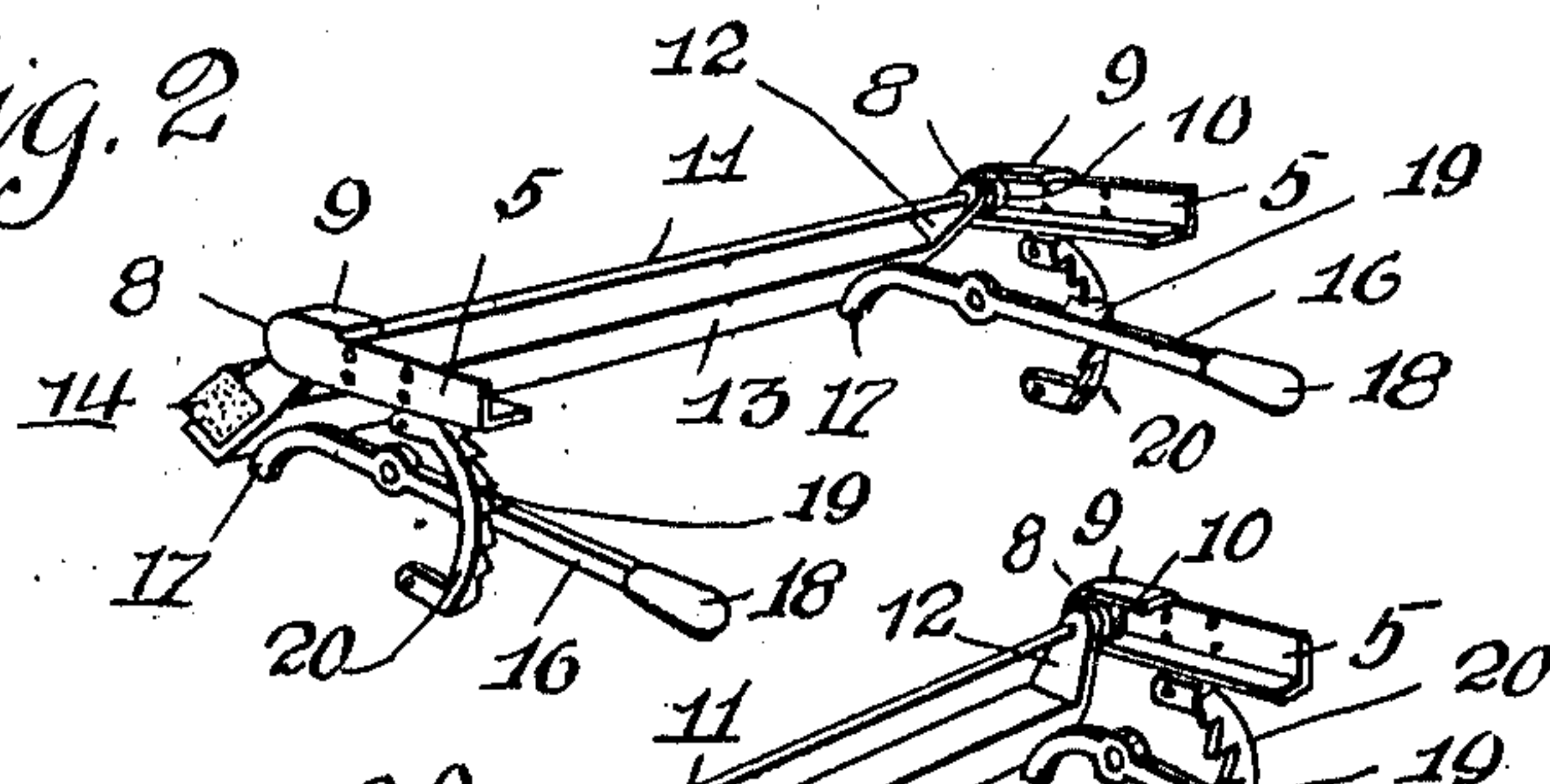
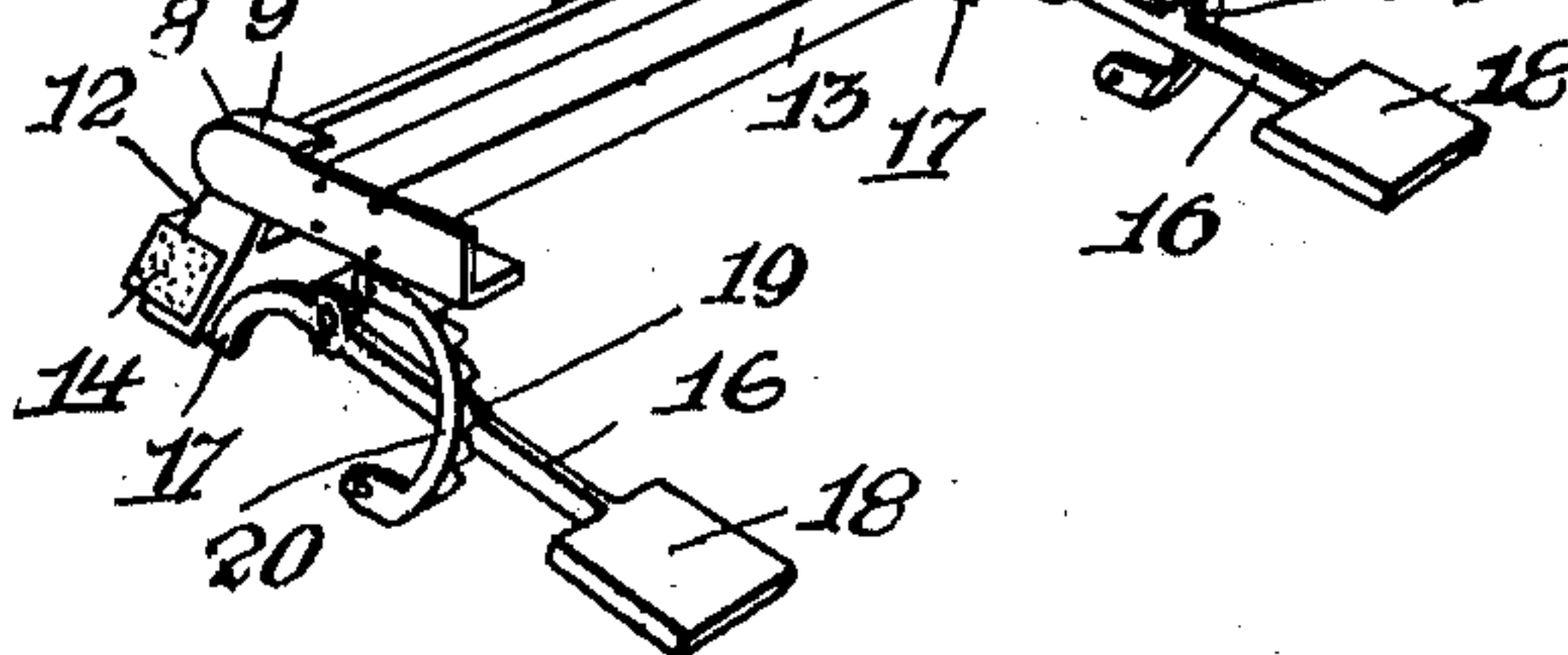


Fig. 3.



WITNESSES

Samuel Payne
E. H. Butler

INVENTOR

J. R. Richardson,
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES R. RICHARDSON, OF PITTSBURG, PENNSYLVANIA.

DEVICE FOR POLISHING CURVED SURFACES.

989,291.

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To all whom it may concern:

Be it known that I, JAMES R. RICHARDSON, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Polishing Curved Surfaces, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a device for polishing curved surfaces, and more particularly to a device for polishing and grinding the rolls in rolling mills, whereby the rolls at any or all times can be readily and easily cleaned, smoothed or trued by grinding away all foreign matter, which frequently collects or adheres to the face or surface of the rolls.

The objects of my invention are to provide a device of the above type with means as will be hereinafter set forth for positively retaining an abrasive material in engagement with the rolls of a housing, and to provide means whereby the material can be removed and replaced without entailing the stoppage of the mill.

Other objects of the invention are to provide a polishing device that is applicable to the present type of rolls and housings, and which will not interfere with the "feeder" or "catcher" or any workmen attending the rolls.

Further objects of the invention are to provide novel adjustable holders for an abrasive material or a lubricant, and to obviate the expense and labor incurred by employing an attendant for cleaning and lubricating rolls.

Still further objects of the invention are to provide a polishing device that can be advantageously used in connection with hot mill rolls, and to accomplish the above results by a device that is simple in construction, durable, easy to install and operate, and highly efficient for the purposes for which it is intended.

These and such other objects as may hereinafter appear are attained by the novel construction, combination and arrangement of parts to be presently described in detail and then claimed.

Reference will now be had to the drawing, wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements

thereof are susceptible to such modifications as fall within the scope of the appended claims.

In the drawing:—Figure 1 is a vertical sectional view of a set of rolls provided with polishing devices, Fig. 2 is a perspective view of a hand operated device, and Fig. 3 is a similar view of a treadle operated device.

In the accompanying drawing the reference numerals 1 and 2 denote, by the way of an example, two rolls arranged one above the other and supported by an ordinary type of housing 3 and a bed-plate 4, and in connection with each roll I use a polishing or grinding device, the devices being identical in construction and applicable to either side of the rolls, it being preferable to adjust the device of the roll 1 by hand and the device of the roll 2 by foot, but it is in this connection that I reserve the right to manually operate or use any other means for shifting the adjustable levers of the polishing and grinding devices.

As the devices are identical, I deem it only necessary to describe the device in connection with the upper roll 1. The confronting sides of the housings 3 are provided with oppositely disposed angle rails 5, these rails being riveted or otherwise connected, as at 6 to the housings 3. The inner ends of the rails 5 are cut away, as at 7 and the lateral flanges bent upwardly, as at 8 and then outwardly, as at 9 to provide a stop or trap at the inner end of each rail.

Movably mounted upon the rails 5 and limited by the traps thereof are rollers or wheels 10 revolvably mounted upon the ends of a longitudinal axle 11. Pivotally mounted upon the axle 11 adjacent to the rollers or wheels 10 are the hangers 12 of a channel-shaped longitudinal box or holder 13 adapted to hold one or more pieces 14 of abrasive material, as emery, sandstone or the like. Graphite or other lubricant can be substituted for the abrasive material.

The confronting sides of the housings 3 beneath the rails 5 are provided with studs 15, and pivotally mounted upon said pins are operating levers 16 having the forward ends thereof curved, as at 17 to engage the rear side of the holder 13 and the forward ends thereof provided with handles or treads 18. Each operating lever 16 has a depending tooth 19 adapted to engage a curved rack 20 having the ears thereof con-

5 nected to the housings 3, as at 21, said racks holding the operating levers in an adjusted position, with the abrasive material 14 of the holder either in or out of engagement with the roll 1.

From the foregoing it will be observed that I have employed an upper and lower polisher for a set of rolls, and as each polisher constitutes an independent unit, any
10 number of polishers can be employed according to where the roll is most worn or cut by sheet metal wearing against it, further that it is not necessary to true the rolls the whole of their length or only a
15 portion thereof and further more than one set of rolls is arranged in the housings. The juxtaposition of the lower polisher relatively to the bed-plate permits of a treadle being more conveniently used in connection
20 with the operating levers thereof, while the upper polisher can be conveniently manipulated by hand. It is apparent that when either set of levers is elevated that the polishers can be swung out of engagement
25 with the rolls and by having the operating mechanism in proximity to the housings, the operations of a workman at either side of the rolls is not interfered with.

What I claim is:—

30 1. In a device for polishing rolls, the combination with housings, of oppositely disposed rails secured to the confronting sides of said housings adjacent to the rolls to be polished, wheels movably mounted upon
35 said rails, hangers movably supported by said wheels, a holder carried by said hangers and adapted to contain an abrasive material to engage the rolls to be polished, and operating levers pivotally supported by the
40 confronting sides of said housings and adapted to retain the abrasive material contained within said holders against the rolls to be polished.

45 2. In a device for polishing rolls, the combination with housings, of oppositely disposed rails secured to the confronting sides of said housings adjacent to the rolls to be polished, wheels movably mounted upon said rails, hangers movably supported by

said wheels, a holder carried by said hang- 50 ers and adapted to contain an abrasive material to engage the rolls to be polished, operating levers pivotally supported by the confronting sides of said housings and adapted to retain the abrasive material contained
55 within said holders against the rolls to be polished, and means carried by the confronting sides of said housings and adapted to lock said operating levers in an adjusted position. 60

3. In a polisher for rolls, the combination with housings, of rails carried by the confronting sides of said housings and having the inner ends thereof provided with traps, wheels movably mounted upon said rails
65 and adapted to be limited in their movement by said traps, hangers movably supported by said wheels, a channel-shaped holder carried by said hangers and adapted to contain an abrasive material to engage
70 the rolls to be polished, operating levers pivotally connected to the confronting sides of said housings and having the forward ends thereof curved to engage the rear side of said housings, and means including racks
75 adapted to retain said levers in an adjusted position.

4. In a polishing device for rolls, the combination with housings, rails carried by the confronting sides of said housings and
80 having the inner ends thereof shaped to provide traps, longitudinal axles, wheels revolvably mounted upon the ends of said axles and adapted to ride upon said rails and be limited by said traps, hangers car-
85 ried by each axle, a channel-shaped holder supported by said hanger adjacent to each axle and adapted to contain an abrasive material to engage the rolls to be polished, and means carried by the confronting sides of
90 said housings and adapted to adjust said holders relatively to the rolls to be polished.

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

JAMES R. RICHARDSON.

Witnesses:

KARL H. BUTLER,
MAX H. SROLOVITZ.