

No. 675,590.

Patented June 4, 1901.

G. DARRALL.

COMBINED GRINDER AND POLISHER FOR METAL ROLLS.

(Application filed June 4, 1900.)

(No Model.)

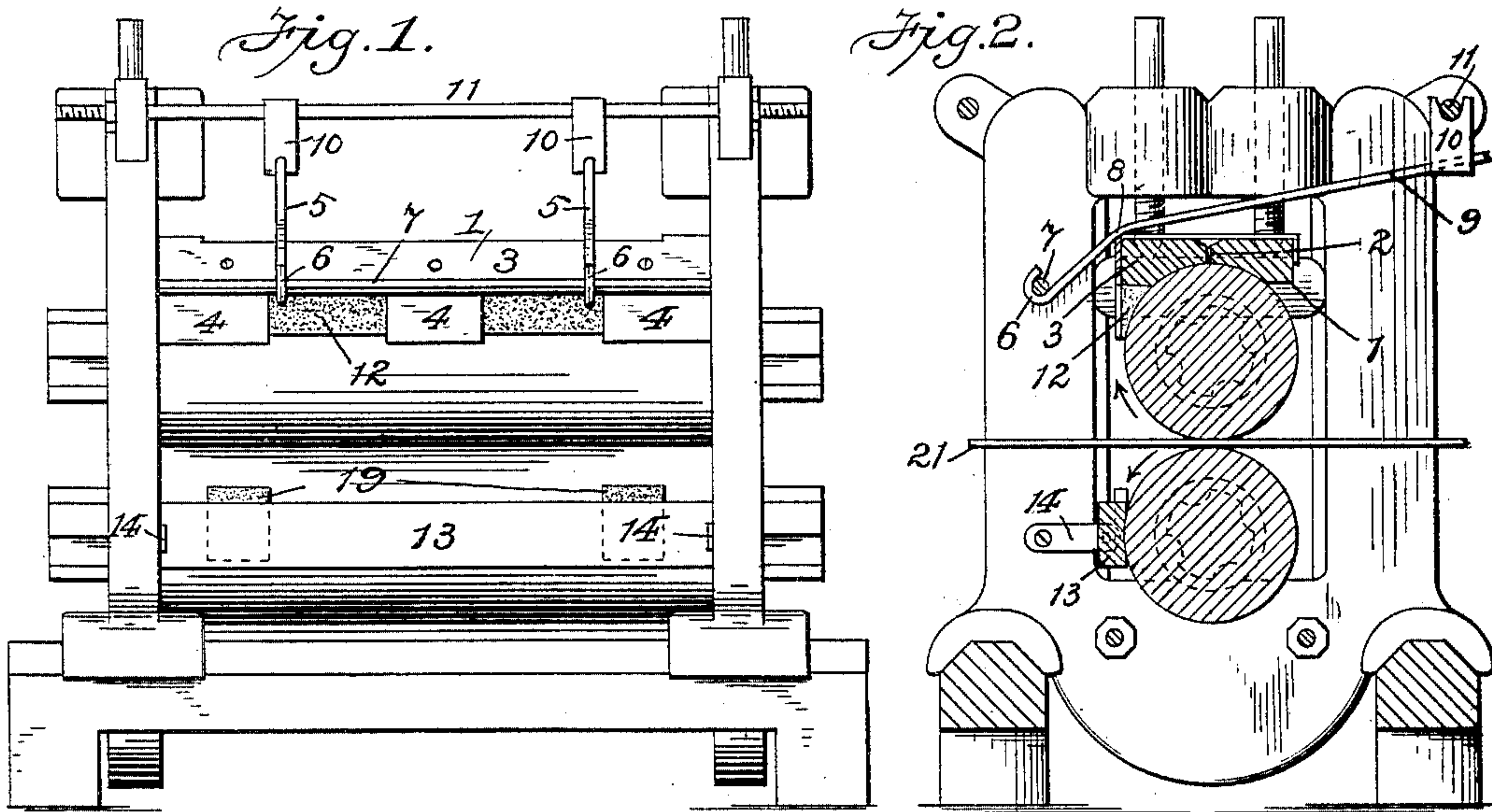


Fig. 3.

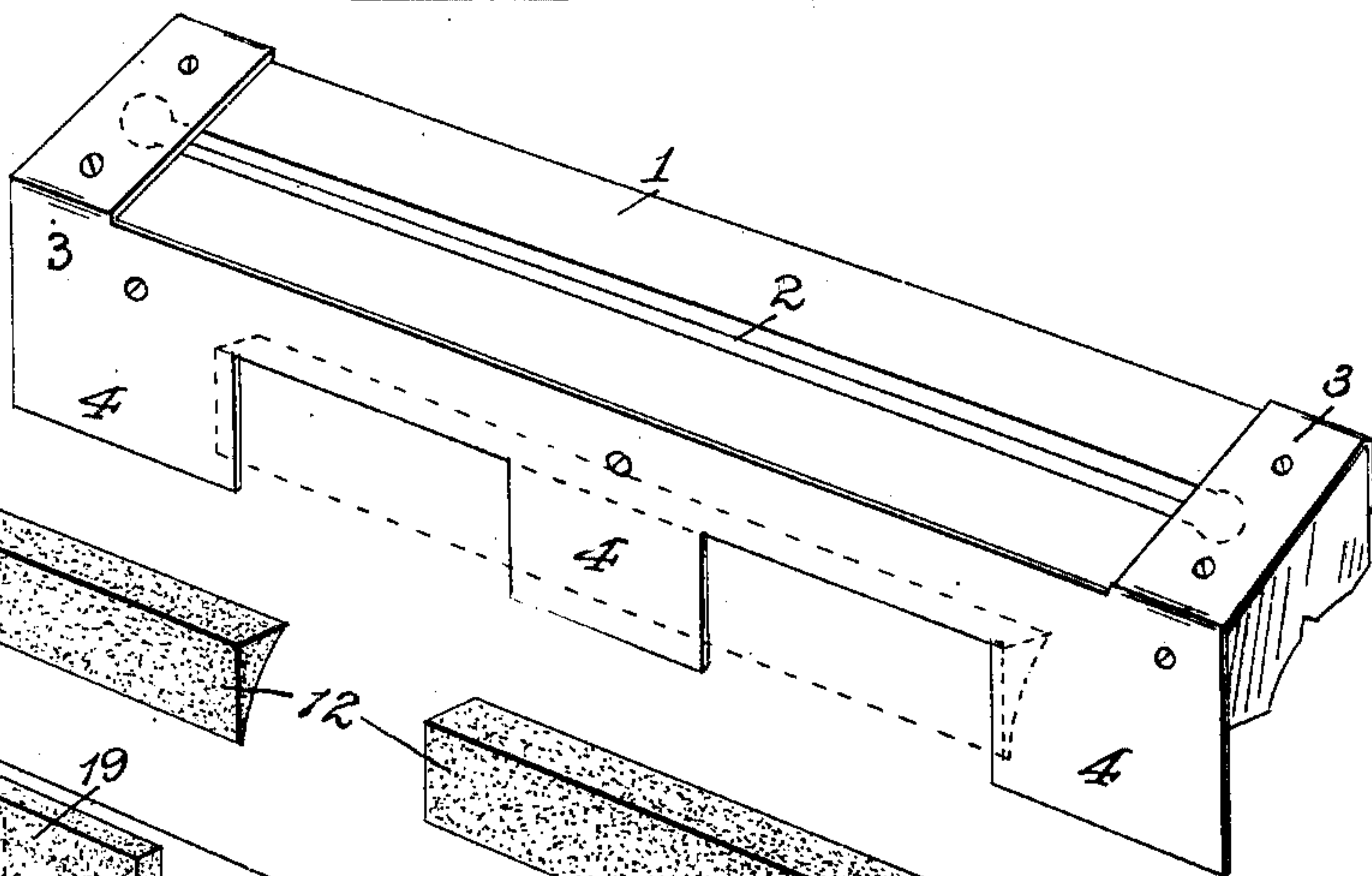


Fig. 4.

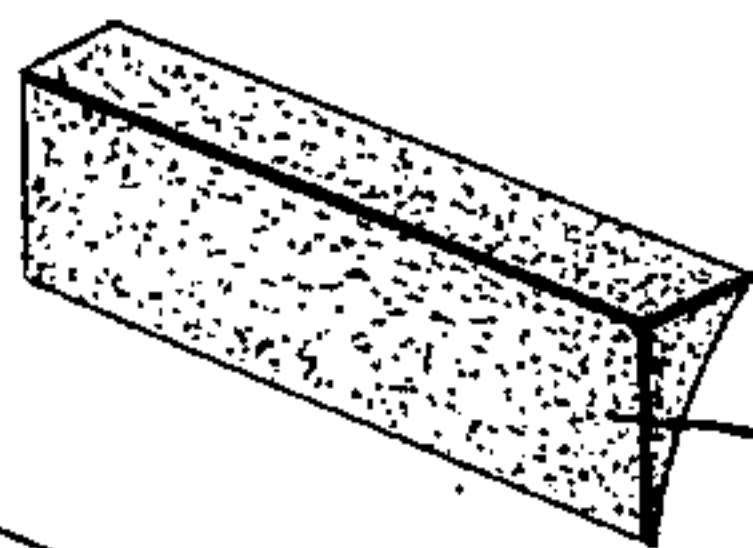


Fig. 5.

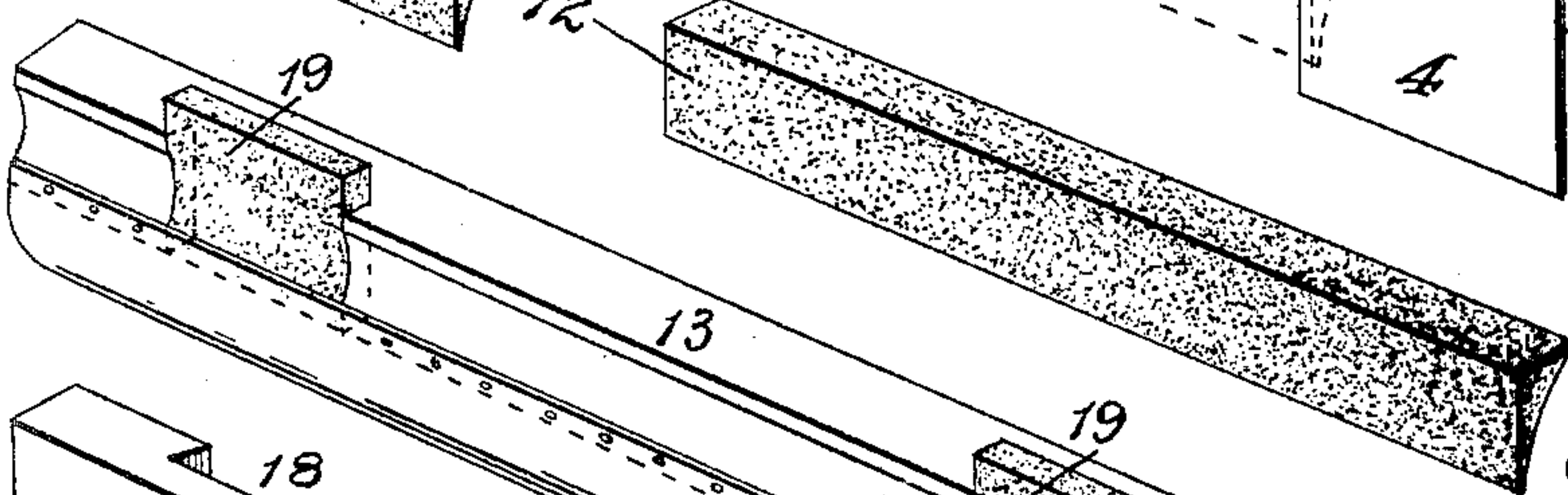


Fig. 6.

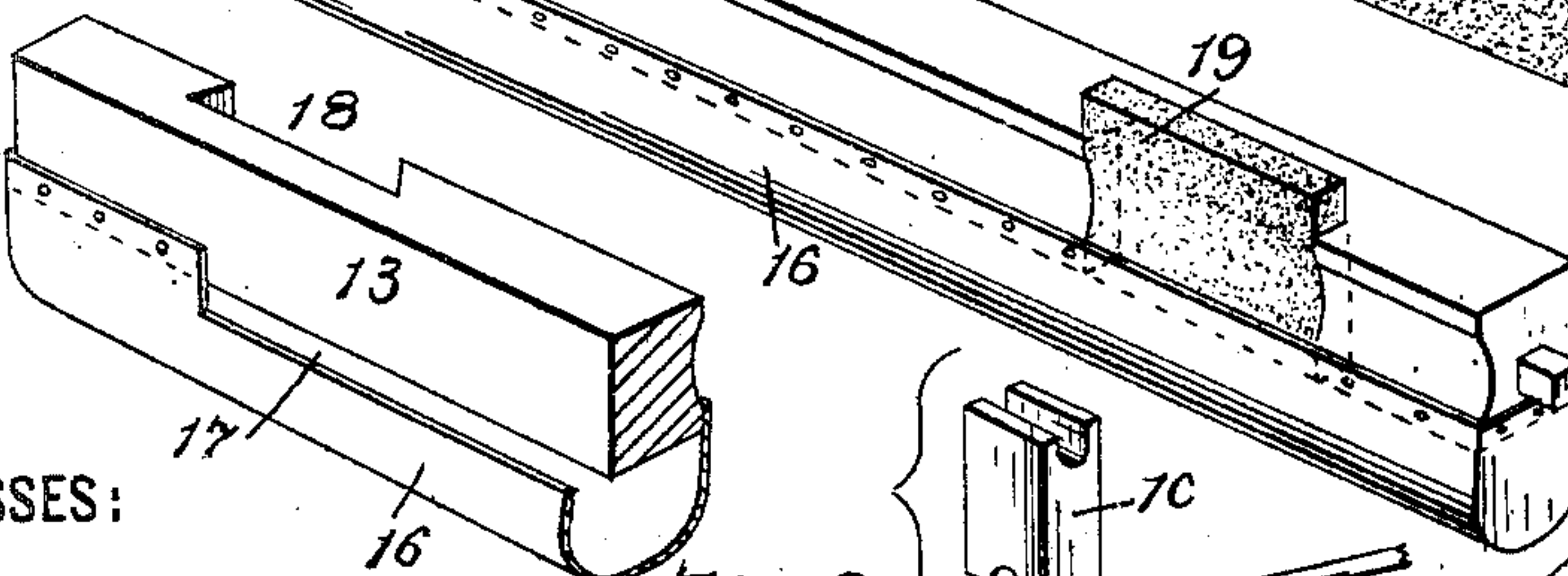
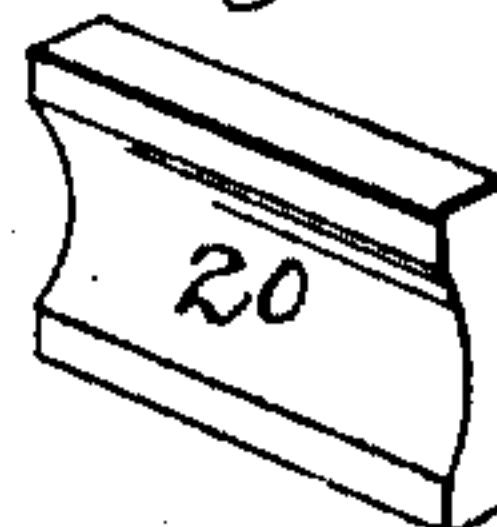


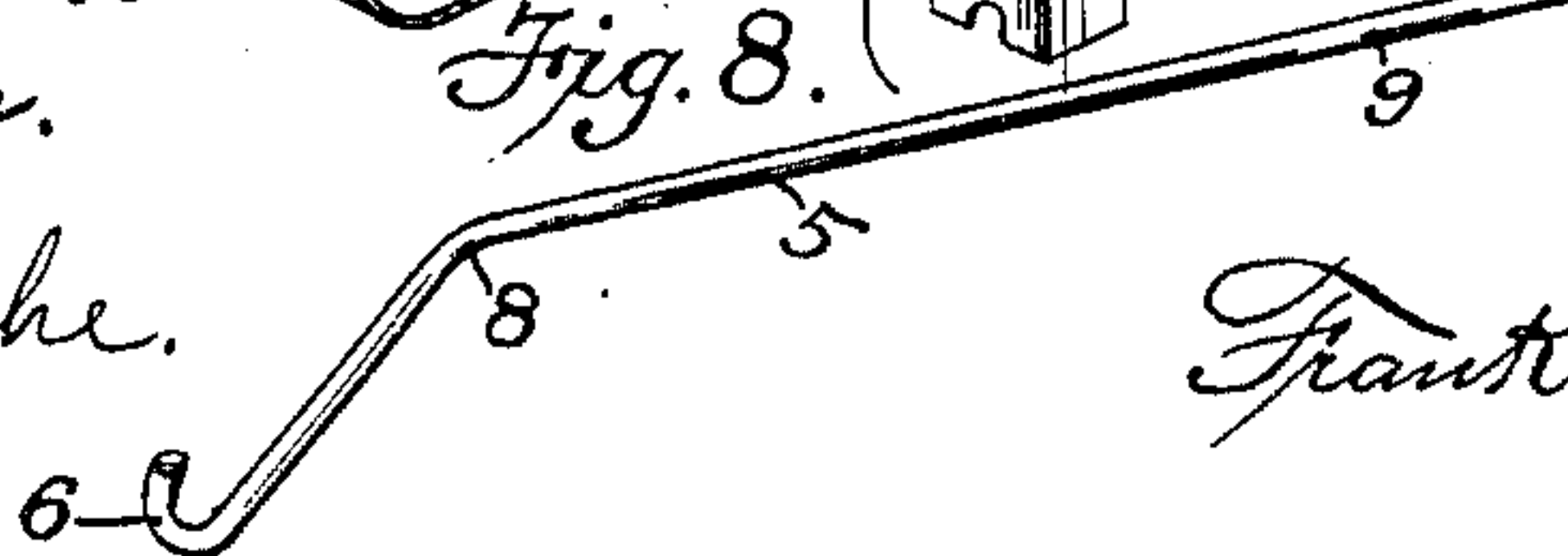
Fig. 7.



WITNESSES:

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Fig. 8.



INVENTOR:

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# UNITED STATES PATENT OFFICE.

GEORGE DARRALL, OF PIQUA, OHIO.

## COMBINED GRINDER AND POLISHER FOR METAL ROLLS.

SPECIFICATION forming part of Letters Patent No. 675,590, dated June 4, 1901.

Application filed June 4, 1900. Serial No. 18,968. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE DARRALL, a citizen of the United States, residing at Piqua, in the county of Miami and State of Ohio, have  
5 invented certain new and useful Improvements in a Combined Grinder and Polisher for Metal Rolls; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others  
10 skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

15 My invention relates to polishers for metal rolls; and the objects of my said invention are to provide devices of simple and inexpensive construction that will work automatically to be applied to and used on the rolls in  
20 rolling-mills, whereby the said rolls as used in rolling sheet metal may at any and all times be readily and easily cleaned or smoothed and trued up by grinding away all foreign matter, which frequently collects on and adheres to  
25 the face or surface thereof; also, in keeping said rolls at all times thoroughly polished and lubricated without the great expense and loss of time by employing workmen to do it when performed by hand, and it has heretofore usu-  
30 ally been customary in "running the rolls down," or, in other words, keeping them in condition so they will wear in an even and uniform shape, to employ or have a man constantly in charge of the rolls whose duty it is  
35 to regulate the pressure of said rolls by keeping the screws down on the riders, and also keeping the axles lubricated; but my device works automatically, and consequently does away with an attendant, and thus saves the  
40 expense incurred in employing one.

My device is further susceptible, with slight modifications in attachment, of being applied to the shafts of any class of machinery.

45 The essential feature of my invention consists in providing the upper and lower rolls employed in rolling sheet metal each with a polisher, each polisher being provided with a detachable grinder or grinders, and other novel features of construction and arrange-  
50 ment of the several parts, as will be more fully described hereinafter and pointed out in the subjoined claim in accordance with

the statutes in such cases made and provided therefor.

Referring to the accompanying drawings, 55 illustrating my invention and in which corresponding numerals of reference refer to like parts throughout the several views, Figure 1 is a side elevation of a set of rolls having my invention applied thereto, so as to show the  
60 practical application of the same; and Fig. 2 is a transverse vertical sectional view of same. Fig. 3 is a view in perspective of the upper polisher, and Fig. 4 shows views in perspective of two different lengths of emery grinders  
65 which operate in connection with said upper polisher. Fig. 5 is a perspective view of the lower polisher, having its emery grinders in position and showing the trough for water attached to it when a wooden polisher is used  
70 on cold-rolls; and Fig. 6 is a perspective view of a section or portion of the lower polisher shown in Fig. 5 with the grinders removed and looking at the opposite side, so as to show the opening in said trough which receives the  
75 water. Fig. 7 is a detail view in perspective of one of the wedge-shaped members which take the place of the cutters on the lower polisher when it is desired to simply lubricate the lower roll; and Fig. 8 shows perspective  
80 views of the bent arm or rod and its bearing-wedge, by which the upper polisher is held in position on the upper roll.

Referring in detail to the various parts of my invention as illustrated in the drawings 85 by means of the aforesaid numerals of reference, 1 is the upper polisher, which is preferably constructed of wood and provided with a slot or opening 2, through which graphite or other lubricant may be fed to the rolls for  
90 the purpose of polishing and lubricating, and is slightly concaved, so as to rest or bear against the roll. 3 is a metallic binder, provided with depending portions 4, extending around said upper polisher for the purpose  
95 of reinforcing its strength and preventing it from cracking or warping, as shown more particularly in Fig. 3. Said upper polisher is designed to be placed on the top of the upper roll and is held in this position by any  
100 suitable means and in any suitable manner, but in the instance here shown in the drawings by a number of retaining arms or rods 5, (preferably two,) formed at one of their ends



in a hook 6, which engages or hooks around a brace-rod 7, which extends from and connects each of the side frames, which support the set or pair of rolls, as shown in Figs. 1 and 2, said retaining-arms each being slightly bent, as at 8, where it has a bearing on said polisher by reason of its straight end 9 having a bearing-wedge 10 inserted between it and brace-rod 11 of the frame of the housings which support the rolls, (see Figs. 1 and 2,) or instead of a wedge any other means which will bear down upon straight end 9 may be employed.

Detachable grinders 12, preferably constructed of emery, although sandstone or other suitable material may be used, and of any length desired, (see Fig. 4,) according to where the roll is most worn or cut by the sheet metal wearing against it and whether it is necessary to true said roll the whole of its length or only a portion of it, are held in position against the face of the roll as said roll turns in the direction indicated by the arrow shown in Fig. 2 by the depending ends 4 of binder 3; but when it is desired to simply lubricate the rolls these grinders may be removed.

Lower polisher 13 is located on the side of the lower roll (see Figs. 1 and 2) and retained in position in the instance shown in the drawings by metallic clips 14, (one attached to each of the supporting-frames of the rolls,) having an opening to receive a square or rectangular shaped pin or key 15, (see Fig. 5,) projecting from each end of said lower polisher, or any other suitable means for supporting said lower polisher may be employed, and in the instance shown in Figs. 1 and 2 I have shown a form of lower polisher constructed entirely of metal, which will never be affected by the heat that arises when used on cold-rolls, although I prefer to use the style shown in Figs. 5 and 6, which is constructed of wood and formed with a slightly-concaved face, so as to properly fit or bear against the lower roll, the same as the metallic form of polisher just described, to the bottom of which is attached a trough or gutter 16, provided on one side with an opening 17 to receive the wa-

ter, which is kept constantly in said trough, so as to prevent the wooden body of lower polisher from being affected by the heat when used on what are technically termed "cold-rolls." Said metal-polisher is suitably cut or recessed, as shown at 18, Fig. 6, for the reception of detachable grinders 19, preferably formed of emery, although sandstone or other suitable material may be used, same as grinders 12, heretofore described. Grinders 19 are of a wedge shape and project a slight distance above the top of the polisher, so that when desired they may be quickly removed from recesses 18 and replaced by wooden wedges 20, (see Fig. 7,) slightly concaved, same as said grinders, so as to present a uniform surface (the same as the rest of the polisher) to the roll when it is desired to simply polish said roll.

In Fig. 1 I have shown my invention as applied to a set or pair of rolls when not employed in rolling, while in Fig. 2 I have shown said invention as applied to the rolls when in the operation of rolling a section or strip of sheet metal, as shown at 21.

It will be observed from the foregoing that a very important feature about my device is that it not alone works automatically, but it may be constantly retained in position on the rolls whether said rolls are in the operation of rolling or not.

Having now described my invention, what I claim is—

In a device for polishing or truing the surface of cylindrical bodies, the combination of the polisher; the binder for said polisher; the grinders connected to said polisher; the retaining or bearing rods or levers each formed with a hooked end, a bent portion and a straight end; and the wedges or blocks adapted to bear upon the straight end of the said retaining-rods, all substantially as and for the purpose described.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEORGE DARRALL.

Witnesses:

JACOB C. JOSSÉ,  
HARRIETTE L. DE WEESE.