

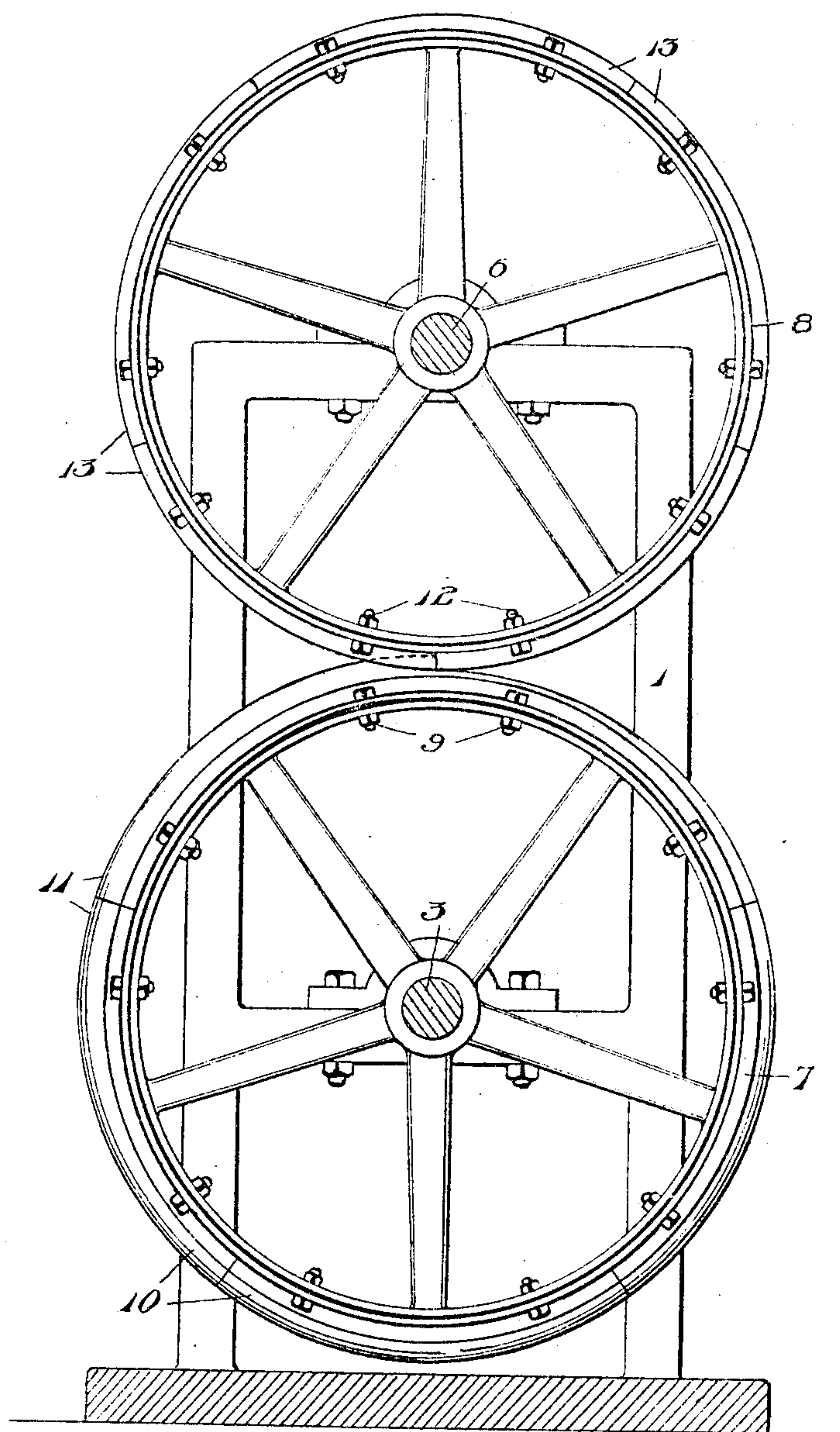
No. 799,306.

PATENTED SEPT. 12, 1905.

J. M. DAVIDSON.  
MACHINE FOR ROLLING TAPERS.  
APPLICATION FILED SEPT. 16, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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INVENTOR

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2 SHEETS—SHEET 2.

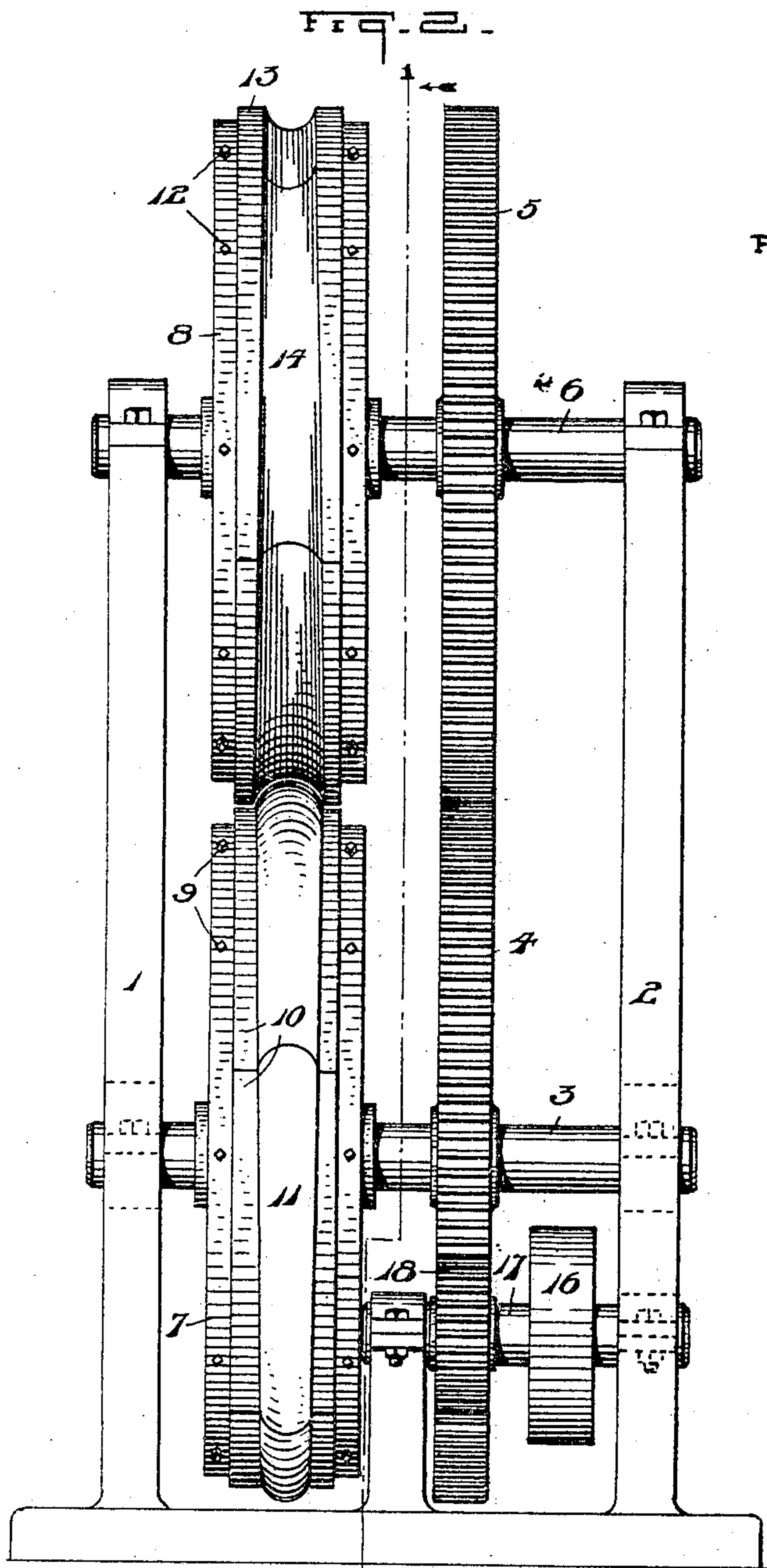
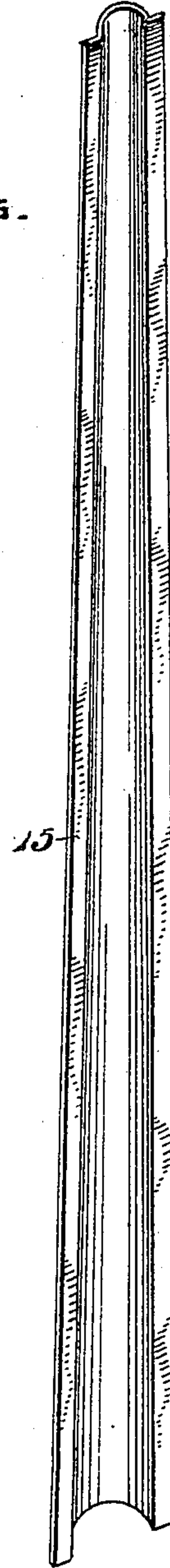


FIG. 3.

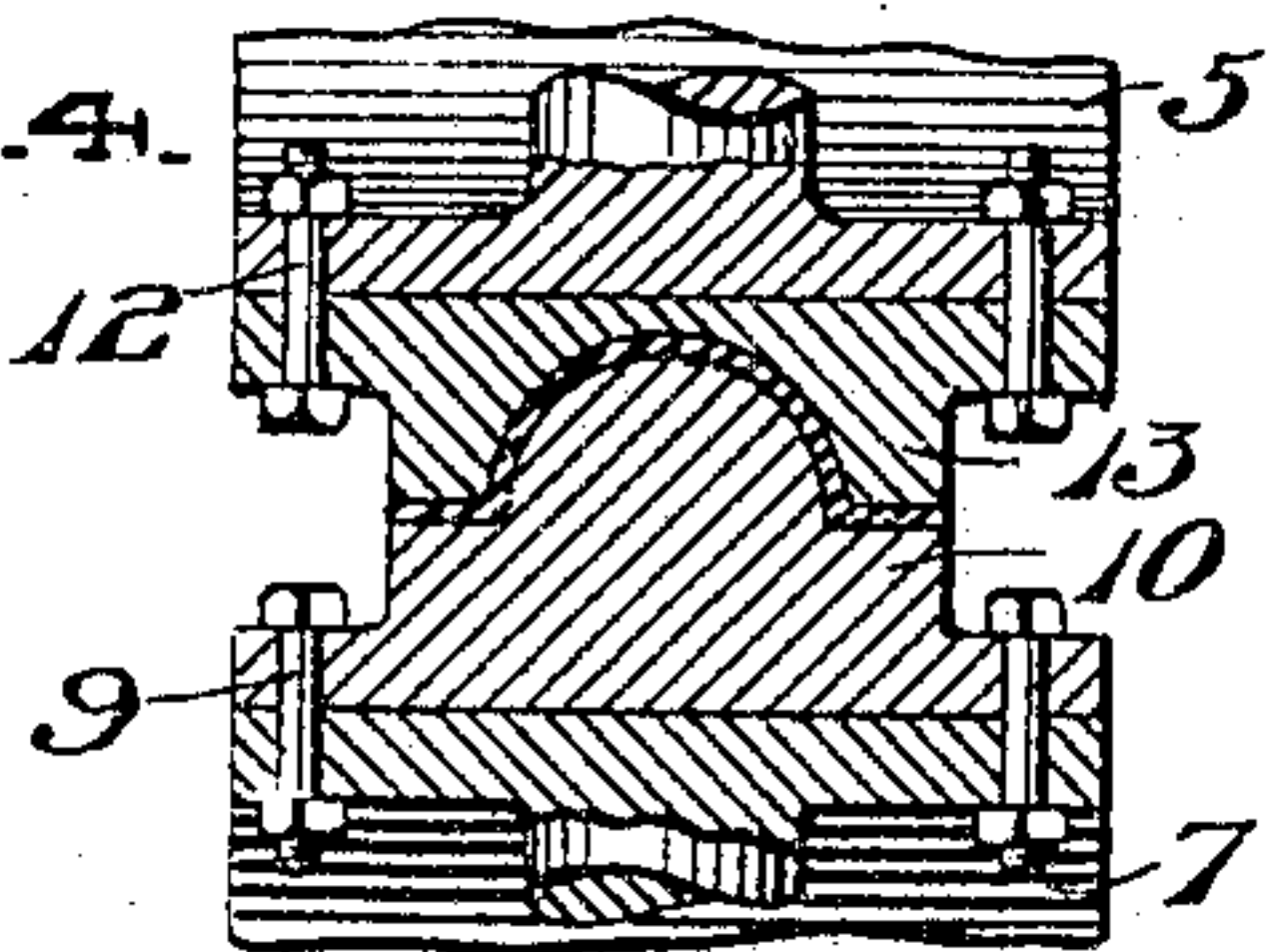


WITNESSES:

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FIG. 4.



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# UNITED STATES PATENT OFFICE

JOHN M. DAVIDSON, OF PITTSBURG, PENNSYLVANIA.

## MACHINE FOR ROLLING TAPERS.

No. 799,306.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed September 16, 1904. Serial No. 224,687.

*To all whom it may concern:*

Be it known that I, JOHN M. DAVIDSON, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Machines for Bending Tapers, of which the following is a specification.

My invention relates to mechanism for bending tapers for columns, wagon-poles, and the like.

Heretofore hollow or troughed tapers have been made by drop-dies or other forms of die-presses. It has not been possible heretofore to bend such tapers, owing to the varying width of the grooves along the same. By my invention I am able to form a trough-like taper at a single operation or revolution of the rolls, whereby their manufacture is much simplified and their cost greatly reduced.

My invention is shown on the two accompanying sheets of drawings, in which—

Figure 1 is a vertical section of my invention, taken on the line 1 1 of Fig. 2 looking with the arrows near said line. Fig. 2 is a front elevation of the same. Fig. 3 is a perspective of an article which my mechanism can make. Fig. 4 is a fragmentary view showing a cross-section, taken through cooperating portions of the bending-wheels and through an article between the same.

In suitable frames 1 and 2 I journal the shaft 3, to which is secured the gear-wheel 4, meshing with the gear-wheel 5, secured to the shaft 6, also journaled in said frames. On the shafts 3 and 6 are secured, respectively, the shaping-wheels 7 and 8. Around the periphery of wheel 7 I secure by bolts 9 a series of segments 10, which have the continuous bead or rib 11, constituting the male member of the shaping mechanism. The rib 11 has externally the shape and dimensions of the concave portion of the article to be shaped. When the article is like that shown in Fig. 3, the rib will have a wide semicylindrical cross-section at one end and a similar narrower section at the other end.

The wheel 8 has secured to the periphery thereof by means of bolts 12 a series of segments 13, which have the continuous groove 14, constituting the female member of the shaping mechanism. The groove 14 will have a shape corresponding to the rib 11, the

wheels being separated sufficiently to form a pass therebetween for the article 15, as shown in Figs. 2 and 4, the latter showing the article 15 and shaping instruments as in practice. When the article 15 has flanges, as shown, they will be formed between the circular die-faces lying each side of the rib 11 and the groove 14, as shown in Fig. 4. The shaping-wheels 7 and 8 are driven by the pulley 16 on the shaft 17, which has secured thereto a pinion 18, meshing with one of the wheels 4 or 5.

I heat the blanks for making tapered objects to a bending heat and pass them longitudinally between the wheels 7 and 8 in an evident manner, whereby the blank, which may be flat or previously partially bent, takes the shape of the space between the rib 11 and the groove 14, flanges being at the same time made on the article if the blanks have the required width and the segments have the flange-forming faces, which would not be essential where flanges were not needed.

I have not shown any accessories—such as tables, guides, and the like—as they may, if necessary, be supplied by any competent mechanic.

I do not limit myself to the precise details shown or described, but reserve the right to all modifications which employ the principles of my invention.

Having described my invention, I claim—

1. In a metal-bending machine, a pair of rolls, one having a transversely-convexed bending-form tapering in height and breadth, the other a cooperating recessed periphery whereby tapered blanks may be bent into tapering trough-like shapes.

2. In a metal-bending machine, a pair of rolls, one having a tapering transversely-convexed bending-form, the other a cooperating recessed periphery whereby tapered blanks may be bent into tapering trough-like shapes in combination with additional cooperating die portions on said rolls whereby one or more flanges may be formed simultaneously with the formation of the said shapes.

Signed at Pittsburg this 14th day of September, A. D. 1904.

JOHN M. DAVIDSON.

Witnesses:

F. N. BARBER,  
A. M. STEEN.