

No. 745,340.

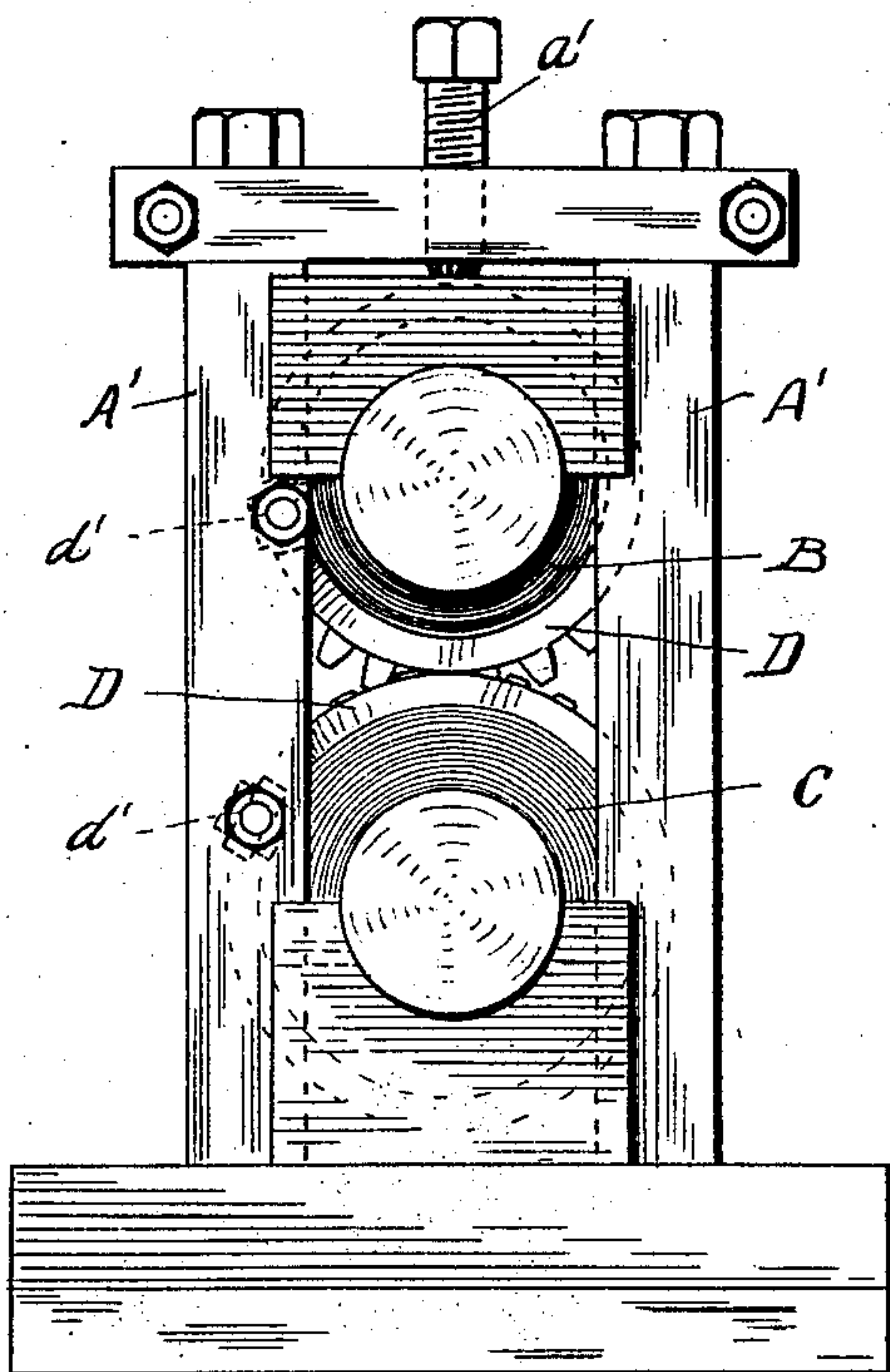
PATENTED DEC. 1, 1903.

W. J. FOLEY.  
CALENDERING MACHINE.  
APPLICATION FILED MAR. 14, 1902.

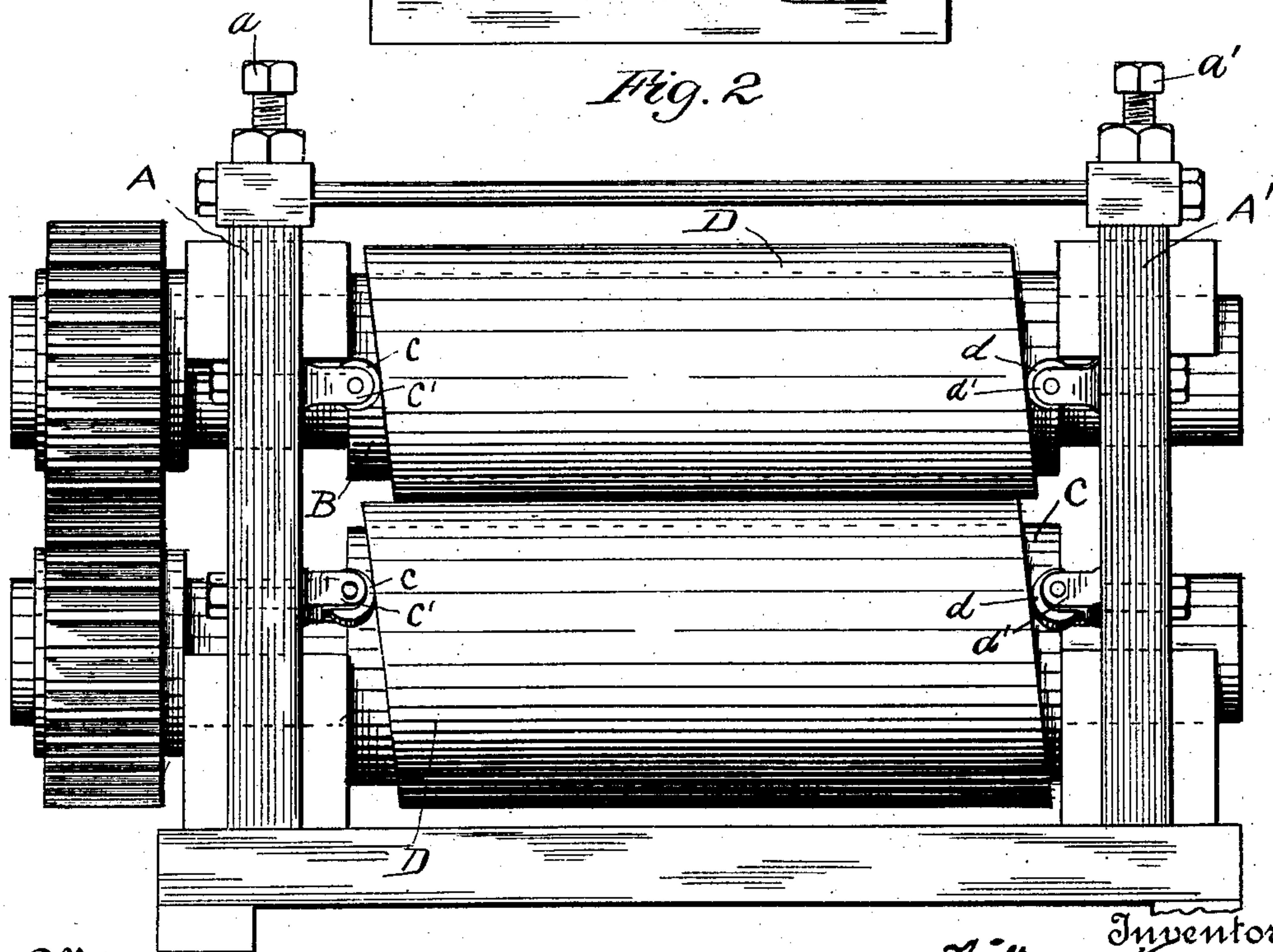
NO MODEL.

3 SHEETS—SHEET 1.

*Fig. 1*



*Fig. 2*



Witnesses  
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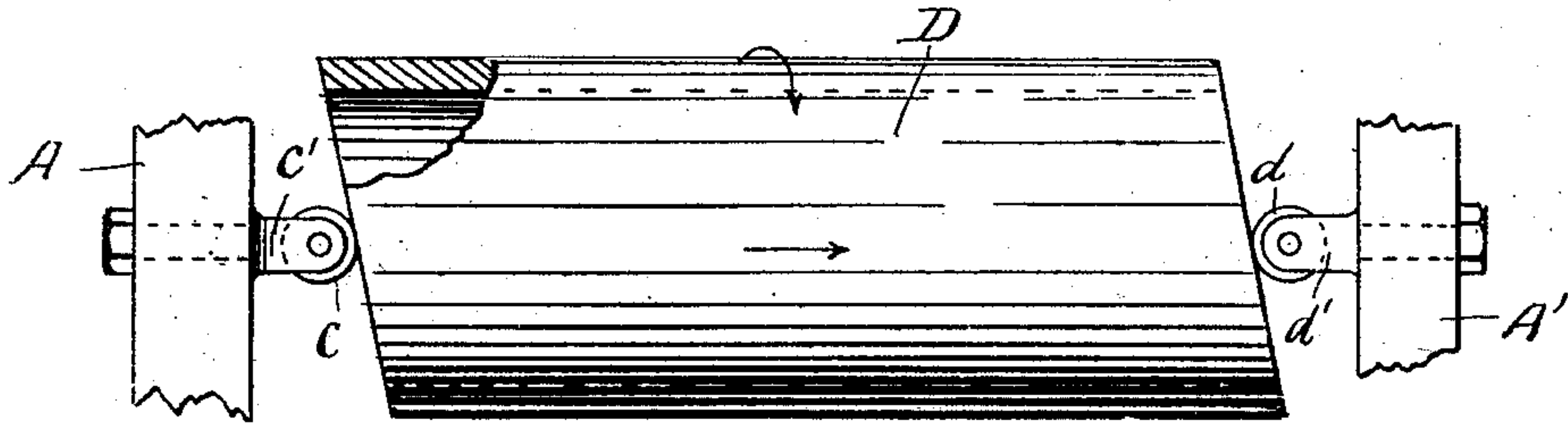
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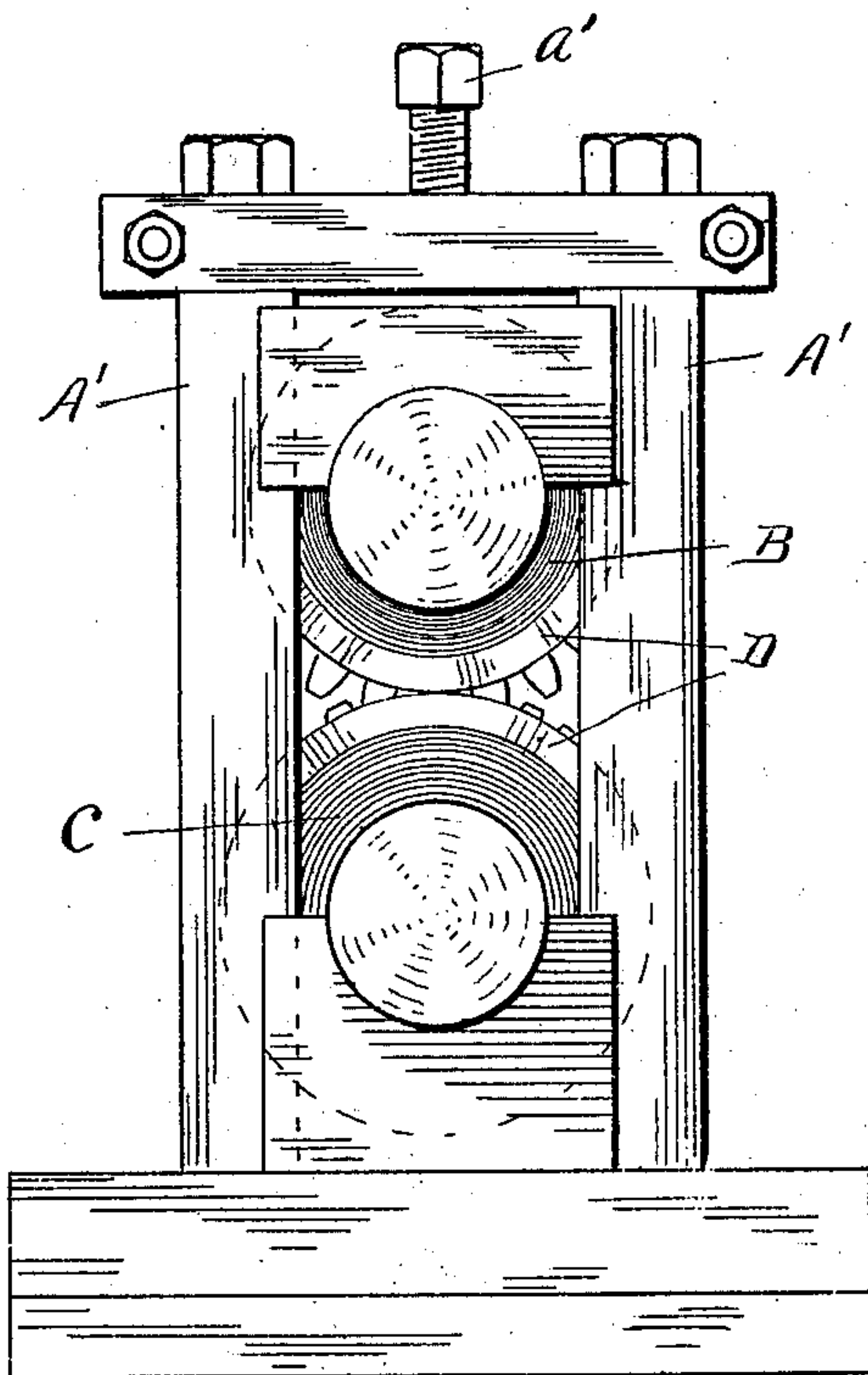
NO MODEL.

3 SHEETS—SHEET 2.

*Fig. 3.*



*Fig. 4*



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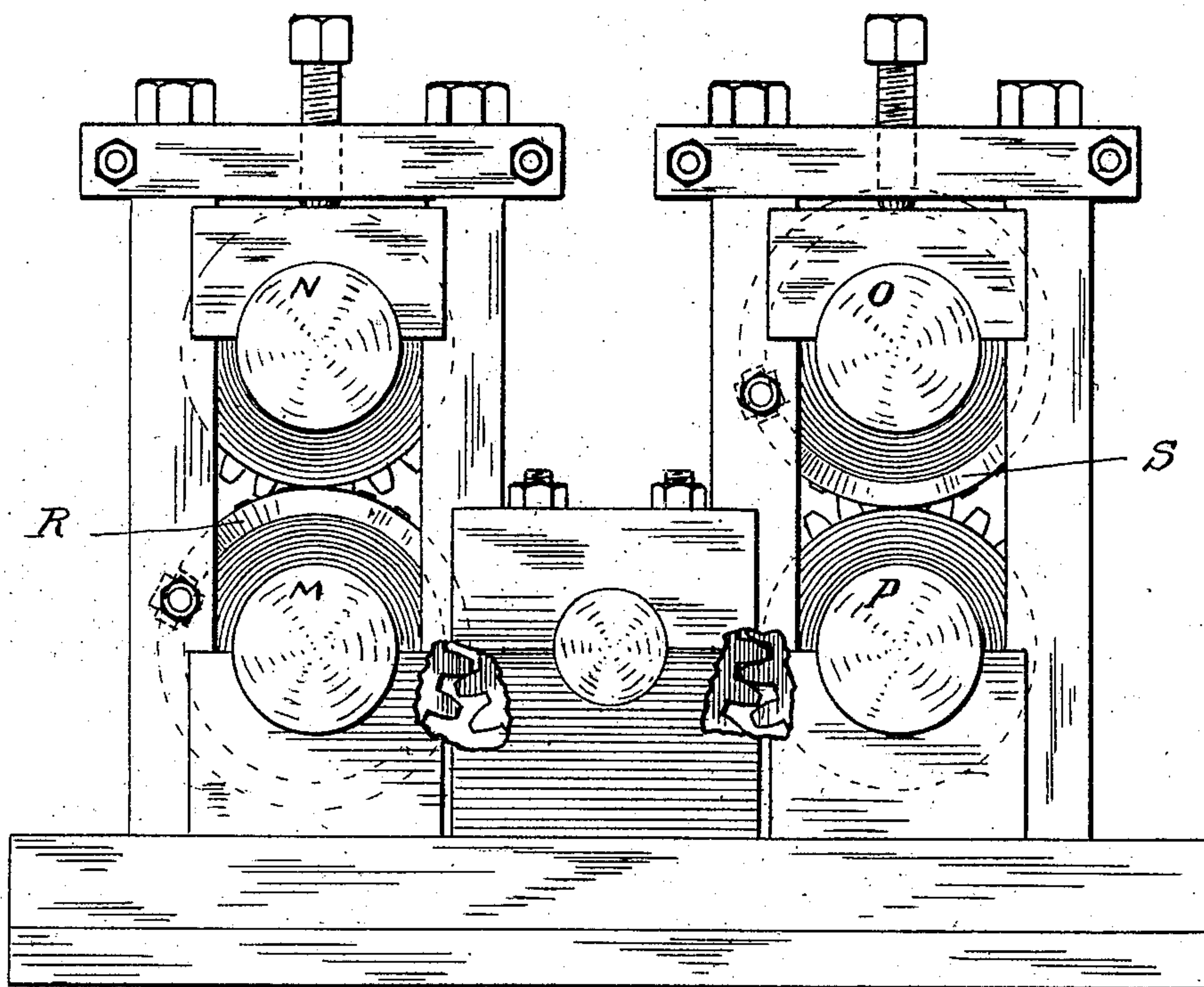
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NO MODEL.

3 SHEETS—SHEET 3.

*Fig. 5*



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# UNITED STATES PATENT OFFICE.

WILLIAM J. FOLEY, OF BURNSIDE, CONNECTICUT.

## CALENDERING-MACHINE.

**SPECIFICATION** forming part of Letters Patent No. 745,340, dated December 1, 1903.

Application filed March 14, 1902. Serial No. 98,178. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. FOLEY, a citizen of the United States of America, residing at Burnside, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Calendering-Machines, of which the following is a specification.

The object of this invention is to produce a machine for calendering and finishing the surface of paper having features of novelty and advantage.

Figure 1 is an end view of a stack of rolls embodying my invention. Fig. 2 is a side view of the same. Fig. 3 is a detail view of the sleeve and appurtenant parts. Fig. 4 is a modification in which the sleeves are not movable from side to side. Fig. 5 is a further modification.

Referring to the drawings, A A' denote the columns in which the rolls are located, having suitable journals.

a a' are screws for putting pressure onto the rolls.

B C are the rolls mounted in the columns. D D are sleeves covering these rolls and fitting closely thereon and capable of movement lengthwise of the rolls or rotarily with respect to the rolls. The ends of these sleeves are cam-shaped and have bearing against them rollers c d, mounted in suitable bearings c' d'. These rolls are driven in any desired manner, preferably by gearing them together and connecting them with a source of power.

This machine is particularly adaptable for use on papers where a high finish is desired. As the paper passes between the sleeves they will drag or move a trifle slower than the rolls, and they are also moved from side to side across the surface of the paper because of their cam-shaped ends working against the rollers c d. This sliding action of the sleeves across and lengthwise of the paper greatly increases the calendering effect of the rolls, producing a high degree of finish with the use of a comparatively small amount of pressure and driving power. The machines used at the present time to accomplish these results require an enormous amount of pressure, and consequently an excessive driving power, and in order to get the results desired it has been found to be necessary to run between the

rolls a number of sheets of paper, each one being separated by a plate of zinc or other metal. I have noticed that as these stacks of paper are fed between the rolls that the under ones drag slightly and that the metal plates move on the paper, and it is by reason of this movement between the papers and the plates that the high burnishing effect is obtained. This method, however, is extremely objectionable, particularly because it requires at least four people to stack and unstack and a man to run the machine. Further than this the machine is idle during the time one stack of paper is being removed and another stack of paper is being prepared for the machine, and to get the desired results an enormous pressure and a correspondingly large driving power are necessary. By my machine I am enabled to accomplish the desired results with a greatly-reduced pressure and a consequent reduction of the driving power of the machine, and the capacity of the machine is more than quadrupled and the number of workmen reduced from five or more to one.

In the machine shown in Fig. 4 I rely simply on the slip of the sleeves about the rolls to produce the burnishing effect.

In the machine shown in Fig. 5 I make use of two stacks of rolls M N O P, one of the rolls in each stack, M and O, having thereon sleeves R S, coacting with the rolls M P. In such a machine it is evident that as the paper passes between the rolls M N one side is finished, and as it passes on between the rolls O P the other side is finished.

I am aware that other modifications and alterations may be made without departing from the spirit of my invention, and I desire to include herein any and all such modifications.

I claim as my invention—

1. In a machine of the class specified, in combination a roll, and a rotatable core having a sleeve mounted thereon and supported thereby to coöperate with said roll, said sleeve being movable with respect to the core, substantially as described and for the purposes set forth.

2. In a machine of the class specified, in combination a roll, and a core carrying a sleeve coacting with said roll, said sleeve be-



ing formed in one piece and movable lengthwise of its supporting-core, substantially as described.

3. In a machine of the class specified the combination with the rolls, of rotatable cores having sleeves mounted thereon and supported thereby and adapted to cooperate with said rolls, said sleeves being movable with respect to the cores.

4. In a machine of the class specified cylindrical sleeves formed from a single piece of metal, mounted upon cores, and capable of movement both circumferentially and lengthwise of said cores, substantially as described.

5. In a machine of the class specified, rolls, suitable journals therefor, cylindrical sleeves mounted on cores coacting with said rolls and means for moving said sleeves lengthwise of said cores.

6. In a machine of the class specified the rolls, rotatable cores, and cylindrical sleeves mounted on and supported by cores and adapted to cooperate with said rolls, said sleeves being movable independently of said rolls.

7. In a machine of the class specified, two sets of rolls arranged side by side, one roll in each set comprising a core and a sleeve mounted thereon and movable relatively thereto, substantially as described and for the purposes set forth.

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

WILLIAM J. FOLEY.

Witnesses:

H. E. HART,

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