

(No Model.)

C. E. BROWNELL.  
DRAWING ROLLS.

No. 550,438.

Patented Nov. 26, 1895.

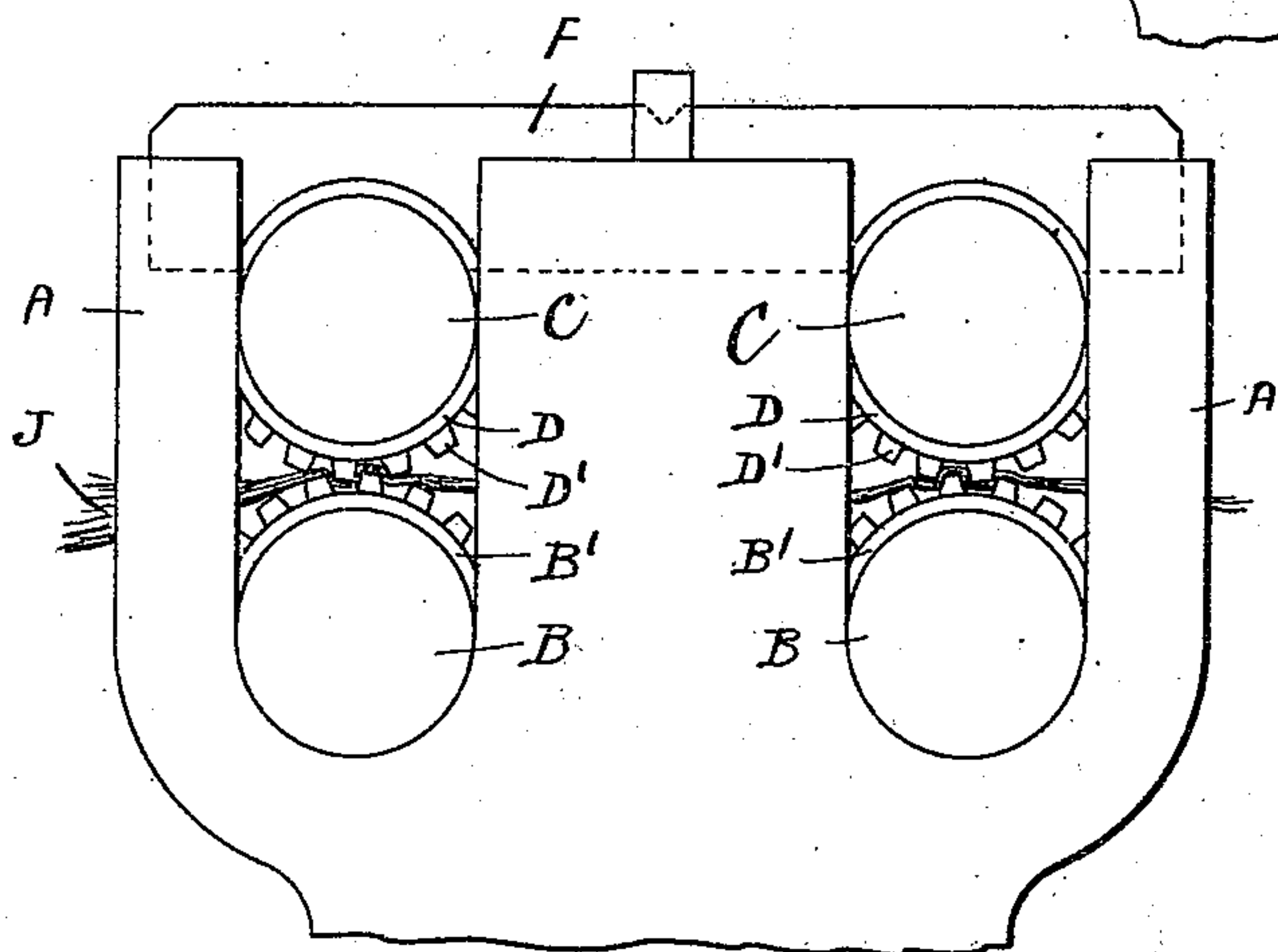
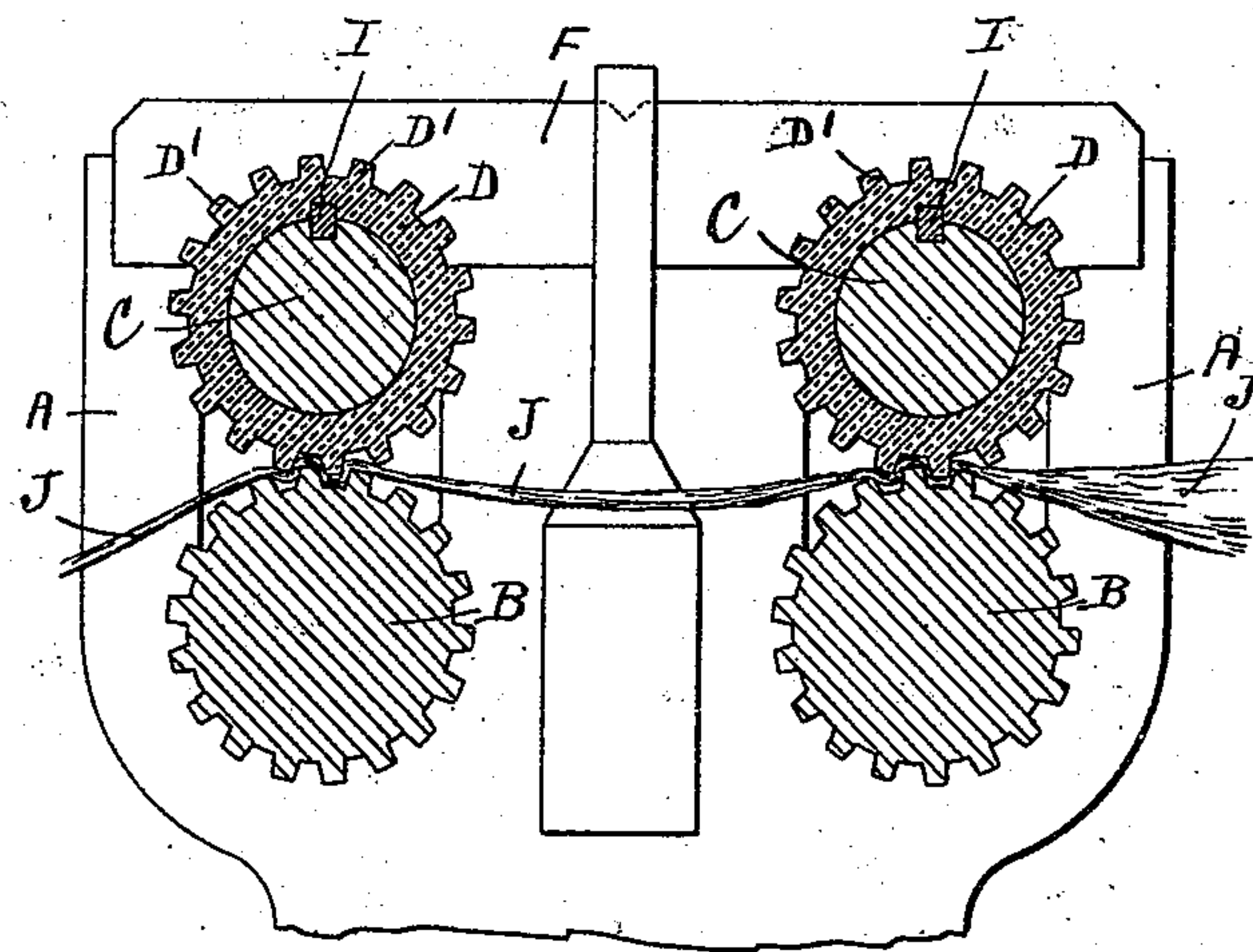
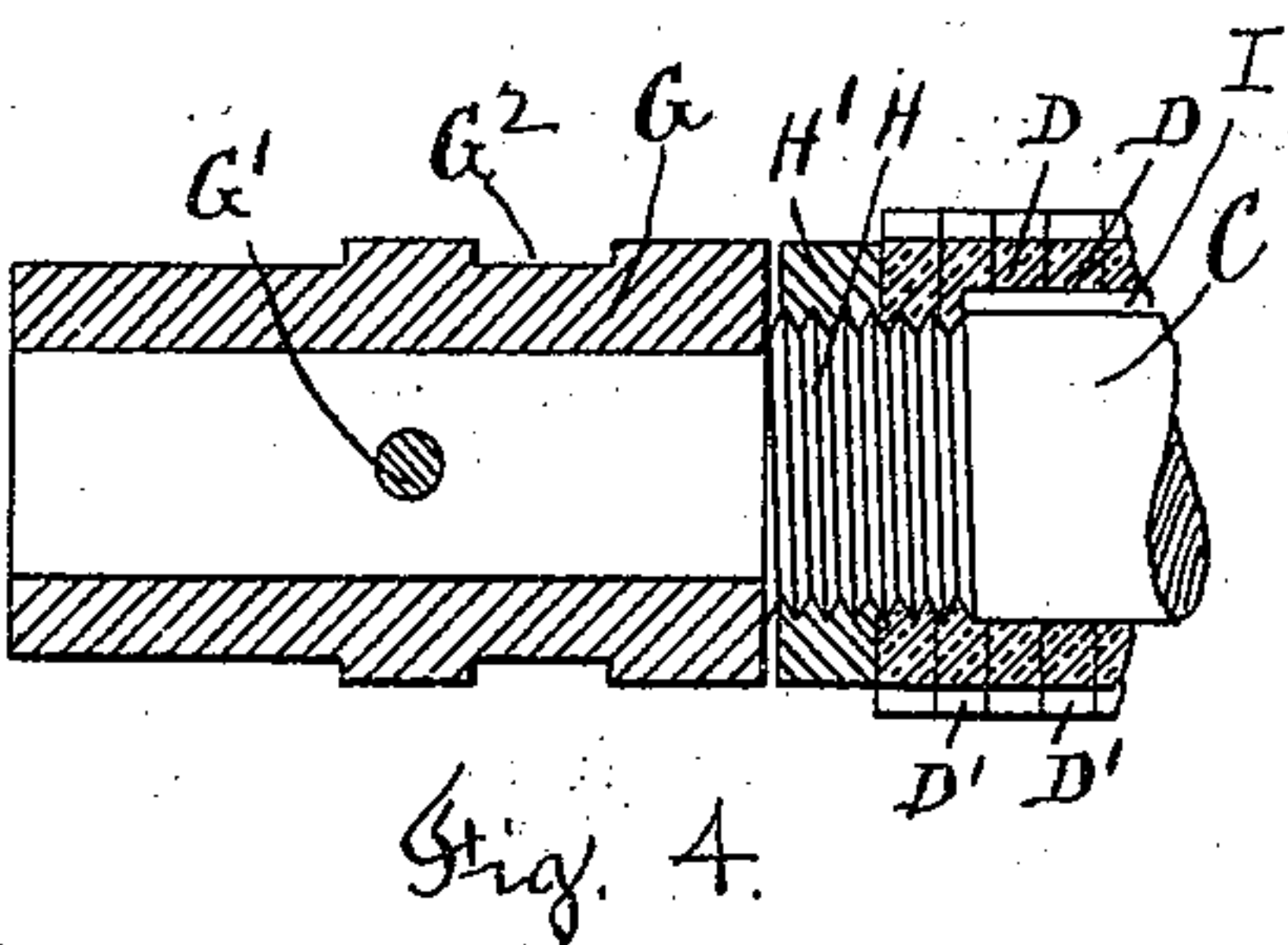
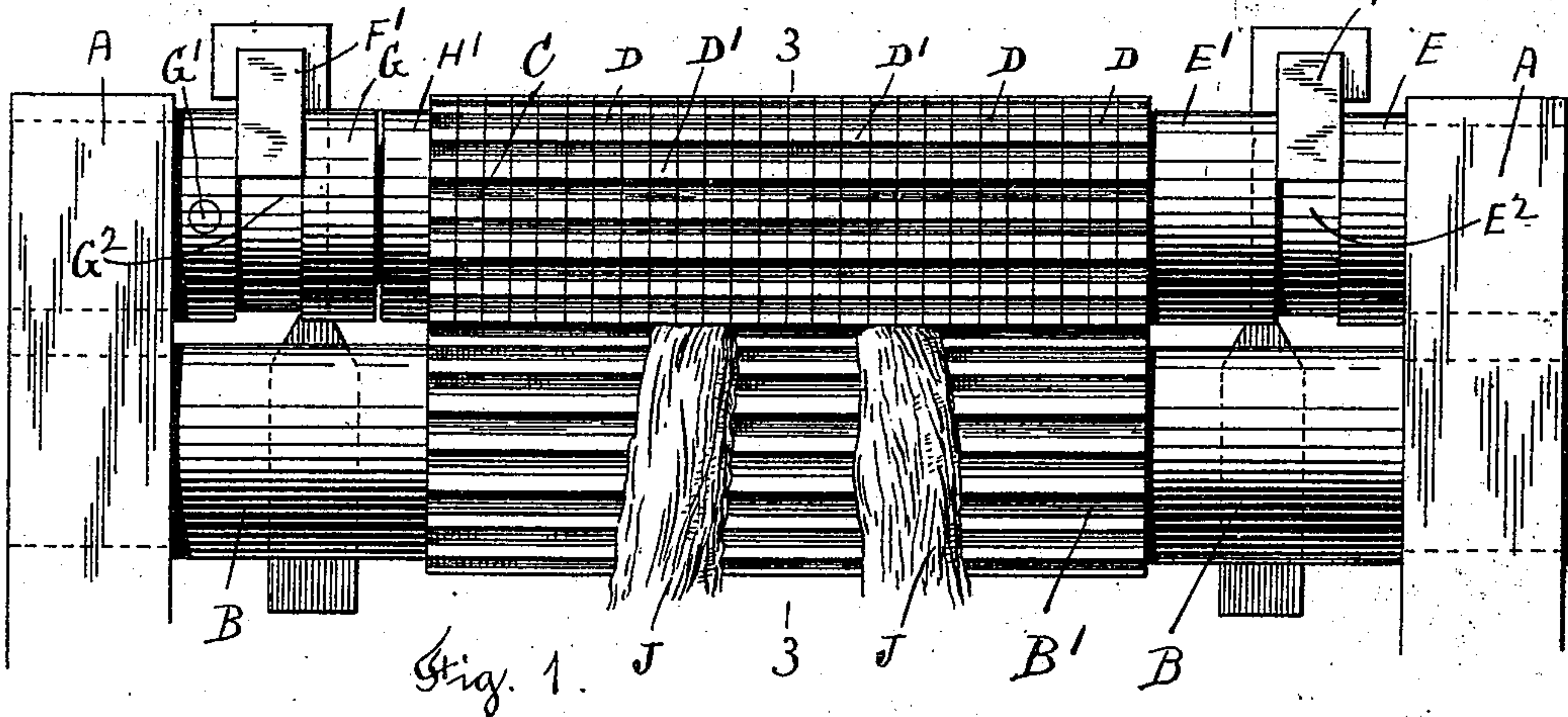


Fig. 3.

Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## DRAWING-ROLLS.

SPECIFICATION forming part of Letters Patent No. 550,438, dated November 26, 1895.

Application filed August 12, 1895. Serial No. 558,966. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES EDWARD BROWNELL, a citizen of the United States, residing at Moodus, in the township of East Had-  
5 dam, county of Middlesex, and State of Connecticut, have invented a new and useful Improvement in Drawing-Rolls, of which the following is a specification, reference being had to the accompanying drawings, forming  
10 a part of the same, in which—

Figure 1 represents a front view of a pair of drawing-rolls embodying my invention. Fig. 2 is an end view. Fig. 3 is a sectional view on line 3 3, Fig. 1; and Fig. 4 represents  
15 a portion of one of the upper rolls, the central spindle being shown in full and the remaining portions in central sectional view.

Similar letters refer to similar parts in the different figures.

20 My invention relates to the fluted rollers employed in elongating the slivers of cotton or other fibrous material in drawing and spinning machines; and it consists in making one of the fluted rollers of the pair of a series of  
25 toothed disks of vulcanized fiber, with the opposing fluted roll of metal, and it further consists in the features of construction of the vulcanized-fiber roll, as hereinafter described, and specifically pointed out in the annexed  
30 claim.

Referring to the accompanying drawings, A A denote the fixed bearings in which the rolls turn.

35 B denotes the bottom metallic roll, having its central section B' fluted.

C denotes a metallic spindle or core carrying a series of vulcanized-fiber disks D, provided with teeth D', corresponding with the  
40 teeth of the fluted section B' of the lower metallic roll.

The spindle C at one end is provided with the collars E and E', which may be integral with the spindle, between which is an annular groove or neck E<sup>2</sup> to receive a weighted  
45 saddle F. The opposite end of the spindle C has a sleeve G, attached to the spindle by a pin G' and provided with an annular groove or neck G<sup>2</sup> to receive the weighted saddle F'. The spindle C is screw-threaded at H to receive a nut H', and between the nut H' and  
50 the collar E', I place the series of vulcanized-fiber disks D, each of the disks D having a spline connection with the spindle C by means of a spline I.

55 The lower metallic roll B is rotated in the

usual manner, and the teeth D' of the upper roll are held in engagement and rotated by the fluted section B', the weight of the upper roll and the weight applied by the saddles F F' causing the sliver J to be compressed be-  
60 tween the fluted sections of the rolls.

It has been customary heretofore to make the bottom roll fluted and to make the upper roll with a plain surface resting upon the  
65 fluted section of the lower roll, and drawing-rolls have also been made having both upper and lower rolls made of metal and having fluted sections, between which the sliver was compressed; but when both rolls have been  
70 fluted and made of metal it has been necessary to provide means for holding the rolls apart, so the sliver would not be pinched between the corners of the metallic teeth, which injured the fibers of the sliver, and as the teeth  
75 of the upper and lower rolls were held out of engagement it became necessary to gear the two rolls together, so that the upper roll would be driven through independent gearing or by gearing other than the fluted section  
80 of the rolls, and as the rolls were held apart it was impossible to vary the pressure exerted upon the sliver by means of the weighted saddles.

My improvement in the drawing-rolls consists in employing two fluted rolls and making  
85 the fluted section of the upper roll of a series of vulcanized-fiber disks having teeth engaging the fluted section of a lower metallic roll and with the upper roll weighted to press upon the sliver as it passes between the  
90 rolls, by which I secure a much more efficient compression and attenuation of the fibers of the sliver than by either of the two methods commonly practiced to which I have referred.

What I claim as my invention, and desire  
95 to secure by Letters Patent, is—

A pair of drawing rolls consisting of a metallic roll having a fluted section and an opposing roll consisting of a metallic core, or  
100 spindle having a series of vulcanized fiber disks carried thereon and provided with teeth forming a non-metallic fluted section, engaging the fluted section of said metallic roll and means for applying pressure to said rolls, substantially as described.

Dated this 9th day of August, 1895.

CHARLES EDWARD BROWNELL.

Witnesses:

H. I. HERRICK,

FRANK B. BOARDMAN.