No. 747,632. PATENTED DEC. 22, 1903.

H. PARKER.

PAPER MAKING ROLL.

APPLICATION FILED SEPT. 16, 1902.

NO MODEL. 4 SHEETS—SHEET 1.

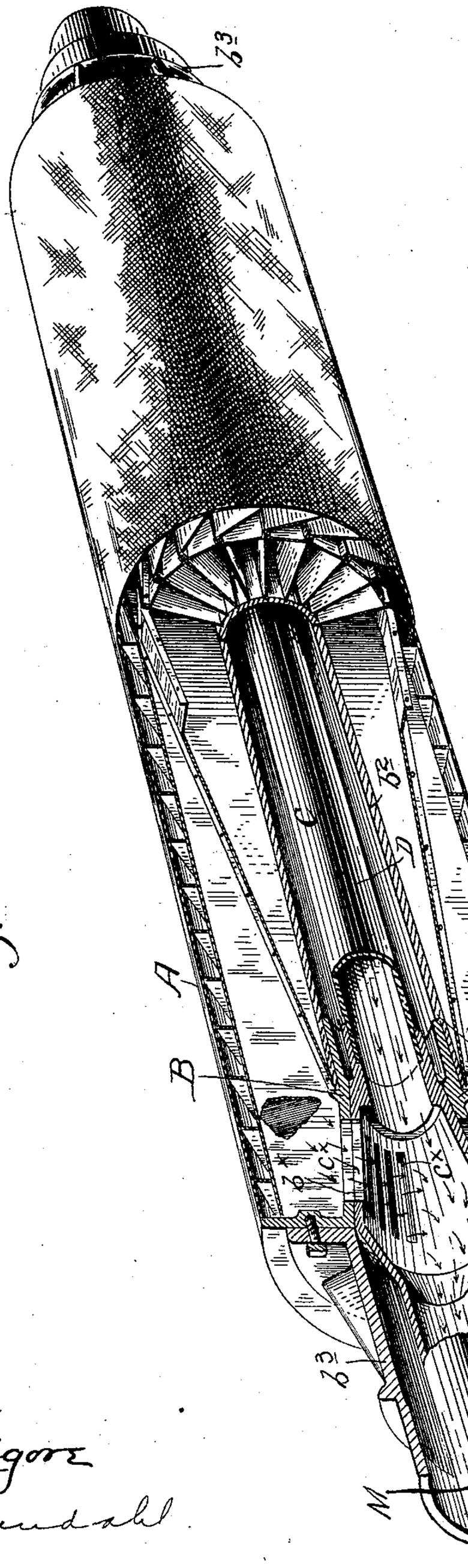

Fig. 1.

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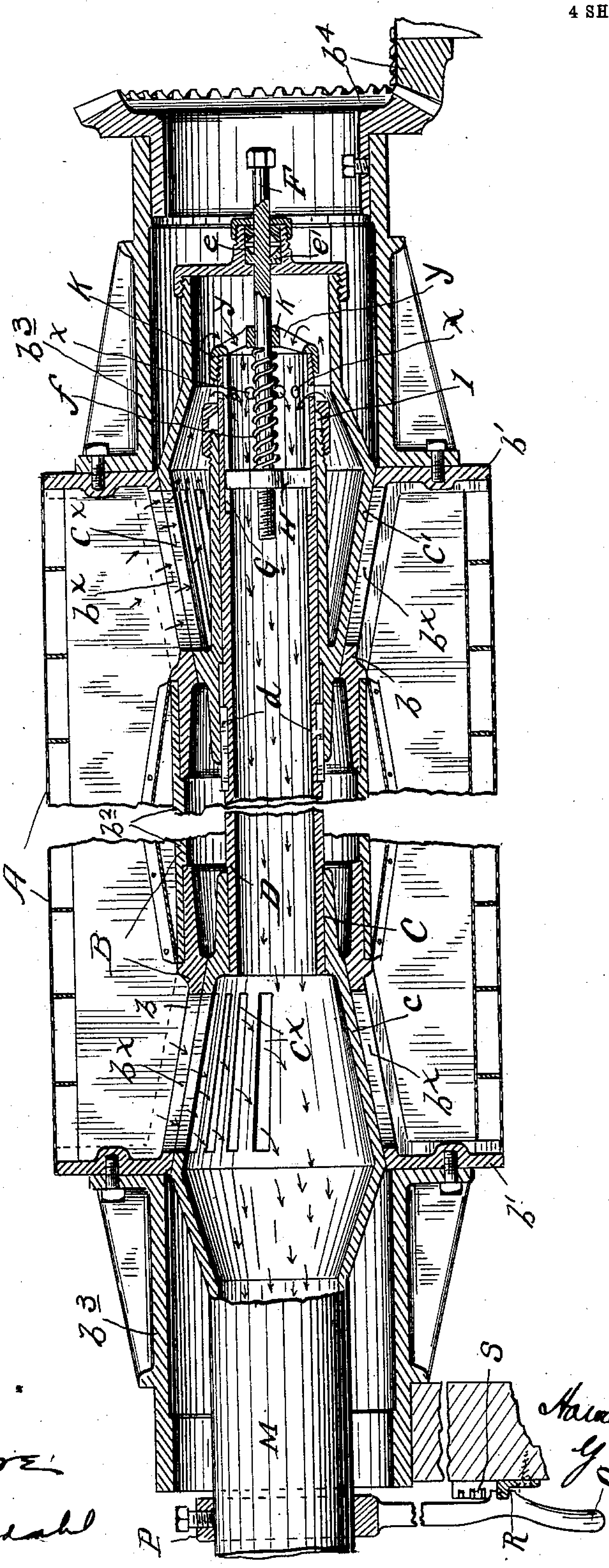
NO MODEL. 4 SHEETS—SHEET 2.

Fig. 2



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NO MODEL. 4 SHEETS—SHEET 3.

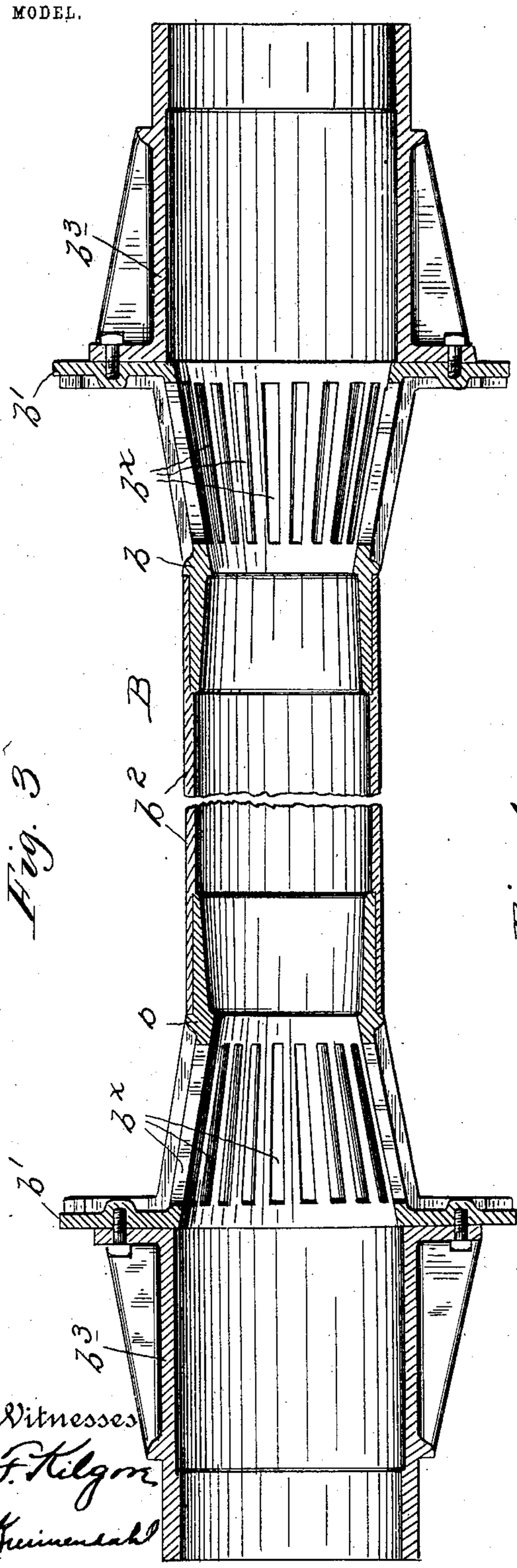

Fig. 3.

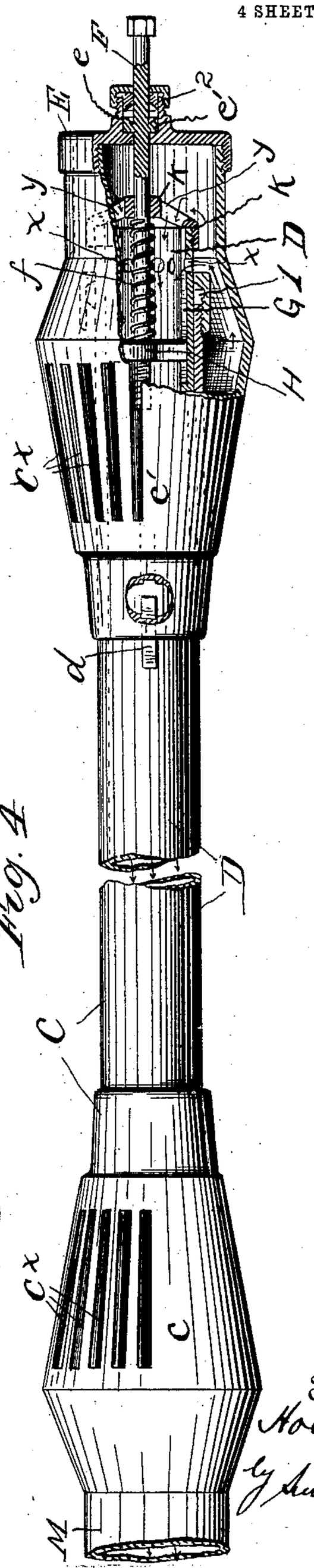

Fig. 4.

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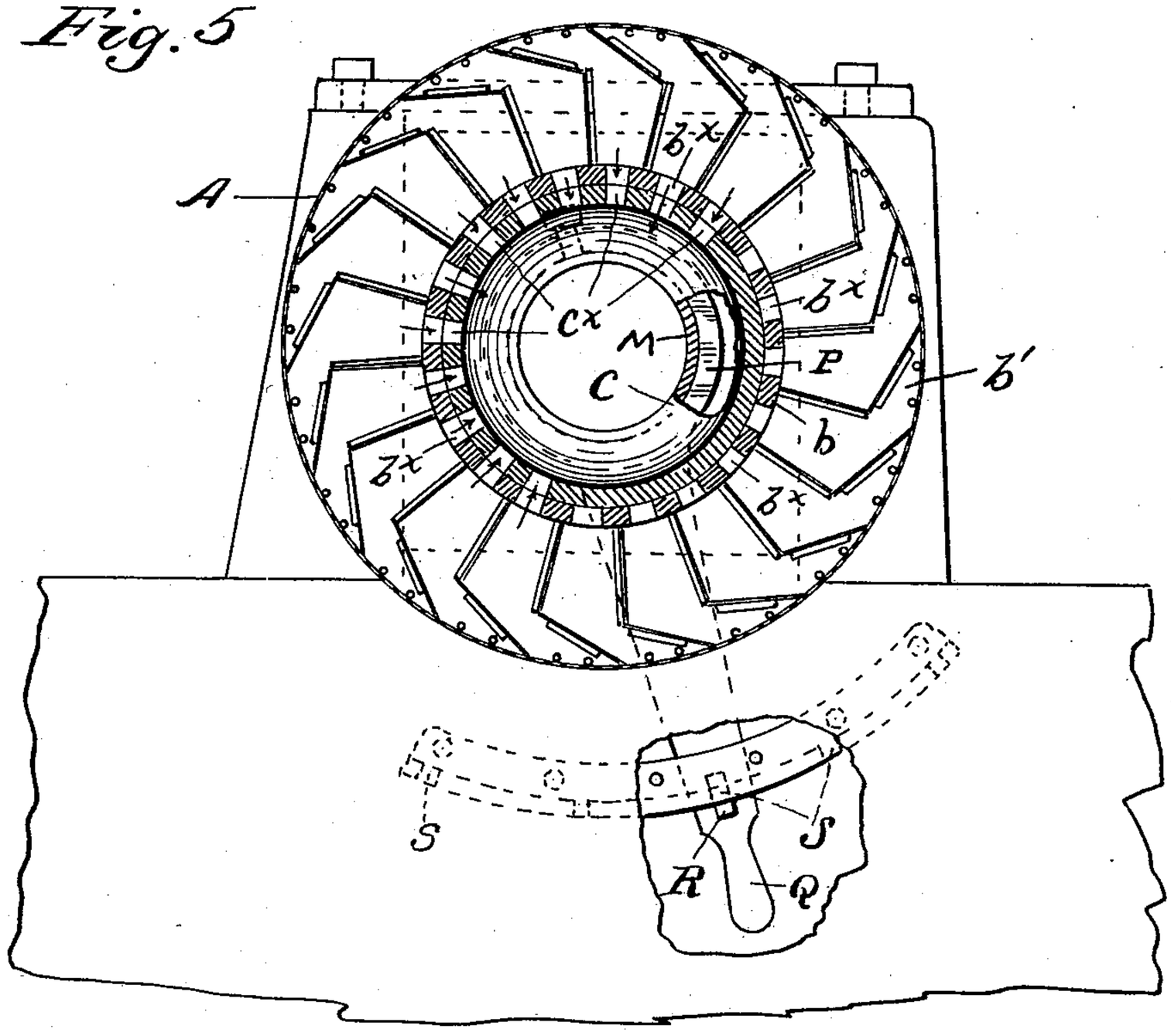
NO MODEL. 4 SHEETS—SHEET 4.

Fig. 5



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No. 747,632. Patented December 22, 1903.

UNITED STATES PATENT OFFICE.

HOWARD PARKER, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR TO IMPROVED PAPER MACHINERY COMPANY, OF CASTINE, MAINE, AND NASHUA, NEW HAMPSHIRE, A CORPORATION OF MAINE.

PAPER-MAKING ROLL.

SPECIFICATION forming part of Letters Patent No. 747,632, dated December 22, 1903.

Application filed September 16, 1902. Serial No. 123,602. (No model.)

To all whom it may concern:

Be it known that I, HOWARD PARKER, a citizen of the United States of America, residing at Nashua, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Paper-Making Rolls, of which the following is a specification.

The object of the invention is to produce a device of the class specified having features of novelty and advantage.

Figure 1 is a perspective view of a roll, partly in section, embodying my invention. Fig. 2 is a central vertical section of the same. Fig. 3 is a detail view, on enlarged scale, of the sleeve. Fig. 4 is a detail view, on enlarged scale, of the core. Fig. 5 is a detail view of the core-adjusting mechanism.

I have shown my invention embodied in what is commonly called a "couch-roll." The roll itself may be of any desired construction, having the perforated surface and lengthwise compartments formed by suitable partitions. The shell of the roll is supported by flanges b' b', projecting from a tubular sleeve B. Secured to these flanges b' b' are tubular pieces b^3 b^3, forming the journals on which the roll rotates. The tubular sleeve B is made up of the cylinder b^2, at each end of which are secured the conical end pieces b b, which terminate in the flanges b' b'. These conical ends b b are slotted, as shown at $b^\times$ $b^\times$, and on these conical ends between the slots rest the partitions which form the longitudinal compartments in the roll. Thus each compartment has opening into it one of the slots $b^\times$.

The roll A, mounted on the sleeve B, rotates upon the core C. This core C is made up of a pipe D. To one end of this pipe is secured the conical head c, adapted in size and shape to fit the interior face of the conical end b of the sleeve B. On the other end of the pipe D is located a similar conical head c', which is mounted to slide lengthwise of the pipe and is keyed thereto, as at d. The outer end of the conical head c' is closed by the cap E, having the recess e and a suitable stuffing-box 2. To the end of the pipe D is secured the cap K, having a hub k. This cap is perforated, as clearly shown at y in Figs. 2 and 4. The interior wall of the pipe D is grooved, as at G, and in this groove is located the collar H, adapted to slide lengthwise of the pipe. The bolt F passes through an aperture in the cap E, through the hub k, and is screw-threaded onto the collar H, having a shoulder e', which fits into the recess e in the cap E. Between the hub k and the collar H, surrounding the bolt F, is the spring f. A suitable stuffing-box is provided at l. Suitable perforations are made through the wall of the pipe D, as at x, Figs. 2 and 4, in order to afford communication between the interior of the pipe and the interior of the head c'. The head c terminates in the pipe M, which is connected with a suitable suction apparatus. The heads c c' are slotted, as at $c^\times$ $c^\times$, for about one-half of their circumference. It is clear that there being a suction action generated inside of the core C by suitable suction apparatus connected at the end of the pipe M the different compartments in the roll A as it rotates about the core C will be subjected to the action of the suction as the slots $b^\times$ register with the slots $c^\times$.

It will be seen from a careful inspection of the arrangement of the head c' with respect to the pipe D that the spring f tends to draw the conical heads c c' continually together and to a close fit within the conical ends b b of the sleeve B, thus insuring a perfect contact between the rotating and non-rotating parts and preventing the breaking of the suction at this point.

The roll A is driven by suitable gearing, as at b^4.

It is oftentimes desirable to change the point at which the suction action shall begin to take effect upon the surface of the roll A, and in order to do this I provide means whereby the core C may be rotated within certain limits. The devices of which I make use comprise the collar P, secured to the end of the pipe M and having a handle Q, with a projection R, coacting with suitable notches S. It is clear that this arrangement permits of

turning the core by simply releasing the engagement of the projection R with one of the notches S and that the core is held in any desired position by the engagement of the projection R with one of the notches S.

I claim as my invention—

1. In a roll for paper-making and like machinery the perforated shell carried by a suitable sleeve, the core upon which said sleeve rotates and coacting conical bearing-surfaces on the sleeve and core on which said roll revolves, substantially as described.

2. In a roll for paper-making and like machinery the perforated shell supported on a sleeve having conical ends, and the core having conical heads adapted in shape and size to fit the conical ends of the sleeve and permit the roll to revolve thereon, substantially as described.

3. In a roll for paper-making and like machinery the shell carried by a sleeve, said sleeve having outwardly-flaring conical ends, a core upon which said roll rotates, said core having outwardly-flaring conical heads adapted to fit the conical ends of said sleeve, said conical portions of the sleeve and core constituting the bearing on which the roll rotates, and means for maintaining close contact between the conical ends of the sleeve and the conical heads of the core, substantially as described.

4. In a machine of the class specified the roll mounted on a sleeve, said sleeve having conical ends, the core provided with conical heads fitting the conical ends of said sleeve and on which said roll rotates, the conical heads of said core being adapted for movement toward and away from each other, substantially as described.

5. In a device of the class specified the roll carried by a sleeve having conical ends, the core having conical heads adapted in size to the size of the conical ends of the sleeve and forming a bearing on which said roll and sleeve rotate, slots through the conical ends of the sleeve and through the conical heads of the core, and means for rotarily adjusting the position of said core, substantially as described.

6. In a device of the class specified in combination the roll, the sleeve carrying said roll and having outwardly-flaring conical ends, the core comprising a pipe having a conical head securely attached thereto at one end, and a second conical head located at the other end and adapted to slide lengthwise thereof, and compensating mechanism between the pipe and the sliding conical head, substantially as described and for the purposes set forth.

7. In a device of the class specified, the stationary core, the rotatable roll supported by a tubular sleeve which rotates on said core, openings through the core and the tubular sleeve adapted to register with one another, and means for rotarily adjusting the position of the core, substantially as described.

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

HOWARD PARKER.

Witnesses:
B. A. PEASE,
L. F. PEASE.