

No. 641,989.

Patented Jan. 23, 1900.

D. B. McMURRAY.
PAPER MAKING MACHINERY.

(Application filed May 13, 1899.)

(No Model)

Fig. 1.

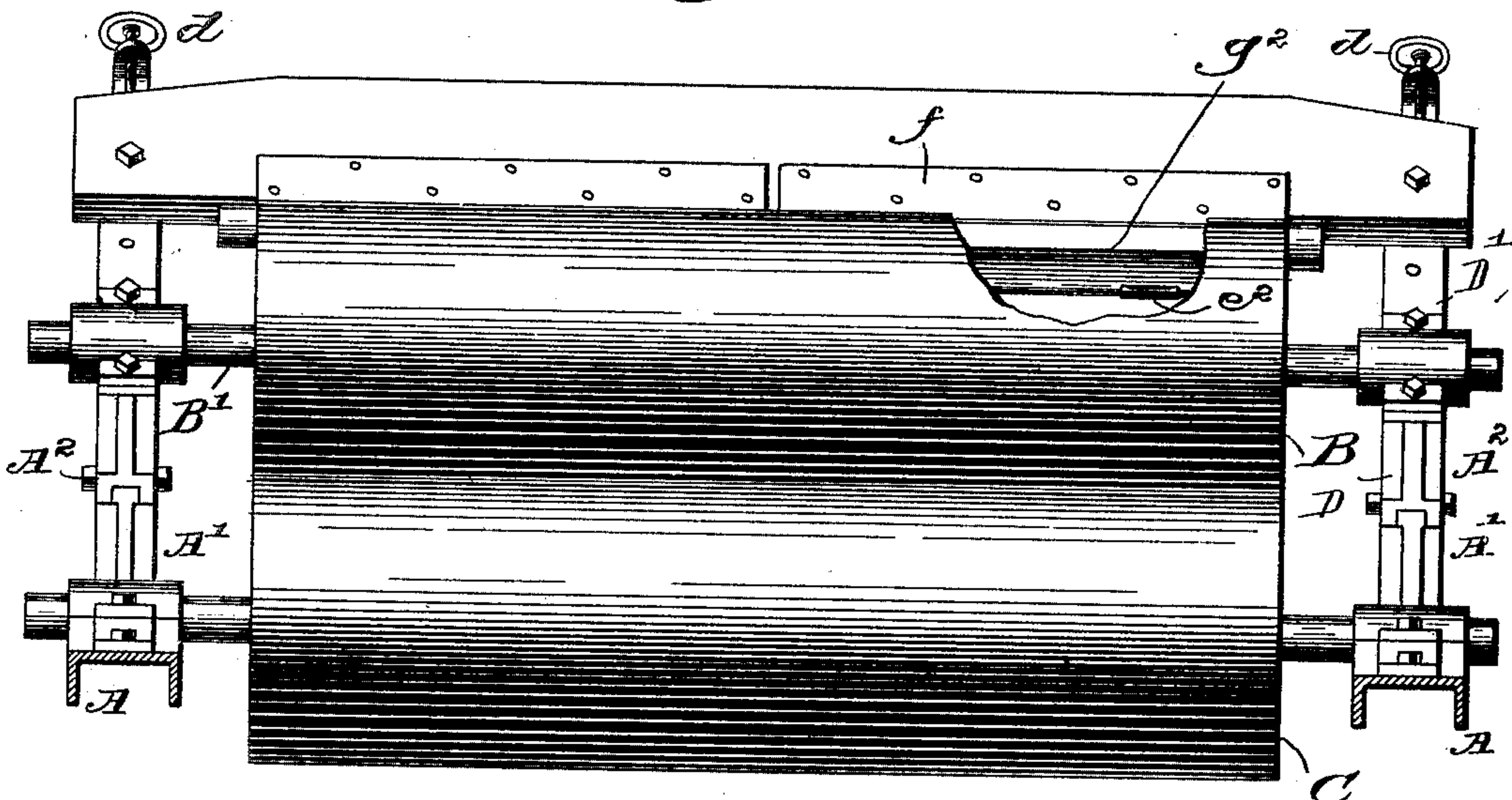


Fig. 3.

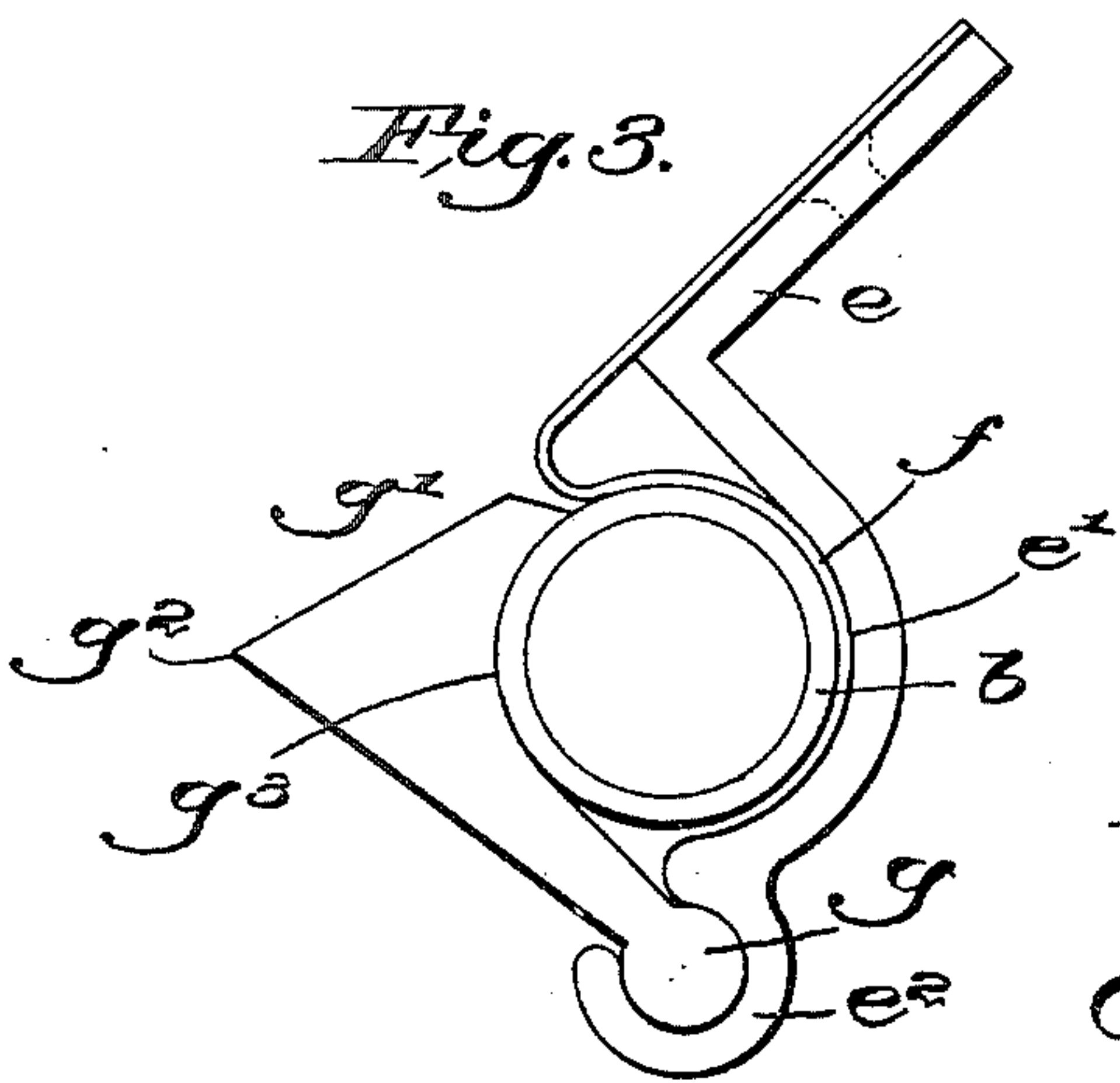
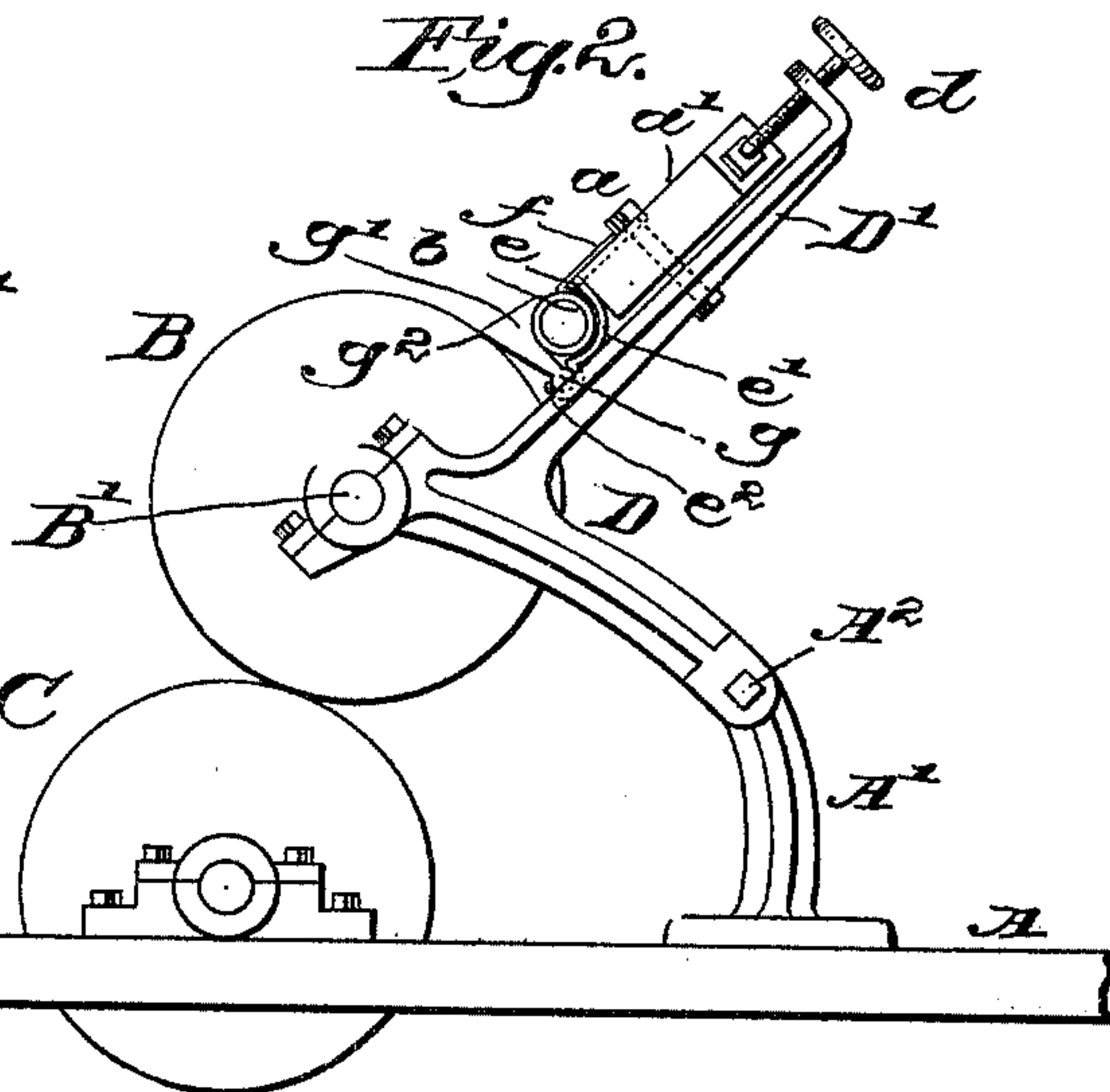


Fig. 2.



Witnesses:

Thomas Drummond.
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by Crosby & Morgan
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UNITED STATES PATENT OFFICE.

DENNIS B. McMURRAY, OF FITCHBURG, MASSACHUSETTS, ASSIGNOR OF
ONE-HALF TO GEORGE R. WALLACE, OF SAME PLACE.

PAPER-MAKING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 641,989, dated January 23, 1900.

Application filed May 13, 1899. Serial No. 716,679. (No model.)

To all whom it may concern:

Be it known that I, DENNIS B. McMURRAY, of Fitchburg, county of Worcester, State of Massachusetts, have invented an Improvement in Paper-Making Machinery, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention is intended as an improvement on the apparatus represented in United States Patent No. 610,493, dated September 6, 1898. Prior to the invention set forth in said patent the couch-roll had been acted upon by
15 the edge of a rigidly-sustained board which was harsh and unreliable in its action on the felt, the pressure of the board on the surface of the couch-roll rapidly wearing its covering away. To increase the efficiency of paper-making machinery as well as its durability, the rigid board referred to was discarded, and instead of it was substituted the inflated tube shown in said patent. This
20 tube acts with great efficiency under most conditions of paper-making; but there are situations wherein a stiff scraping edge may be used to advantage, provided said edge may yield somewhat and adapt itself readily to any variation in the thickness of the covering of the couch-roll. To provide for this, I retain the inflated tube of the said patent, using it as a yielding backing for a wooden
25 scraper bar or board pivoted loosely in suitable bearings, the edge of said scraper-bar contacting with the felt or other usual covering of the couch-roll, the inflated tube keeping it against said covering with a yielding pressure, and this pressure may be more or less hard, according to the degree of inflation
30 of the inflated tube.

Figure 1 is a front elevation, partially broken, out of a couch-roll and its opposed tube with my improvements added. Fig. 2 is an end elevation of the parts shown in Fig. 1, and Fig. 3 is an enlarged detail of the parts
35 embodying my invention.

Let A represent part of the framing of a Fourdrinier machine for making paper, B an ordinary cloth or other surfaced couch-roll, and C the roll with which said couch-roll co-
40 operates, said roll in practice sustaining any

usual belt or wire employed in paper-making machines.

The roll B is carried by a shaft B', having bearings in a frame D, pivoted at A² on suitable stands A', erected at opposite ends of the couch-roll. The frame D has an upward extension D', which receives upon it a guard-board a', screwed to the frame by suitable bolts a, inserted through said board and
55 through slots in the upright portion D' of the frame. The board a' is made adjustable on or with relation to the portion D' of the frame by suitable adjusting-screws d.

The parts so far referred to are substantially as shown in said patent. In said patent there is employed at the lower end of the board a' a sheet-metal seat f, which is extended practically throughout the length of the couch-roll and is shaped to present a
60 suitable concaved face to receive the inflated tube b, which is and may be as shown in said patent, and in practice it may be filled more or less under pressure to thereby give to it any desired degree of stiffness. In addition to these parts common to said patent I
65 have herein provided the bar a' with a series of bearings e, preferably five, two located near the ends of the inflated tube and others between them throughout the length of the tube. These bearings, of any desired number, are concaved at e' (shown best in Fig. 3) to receive the sheet-metal seat f, and so support it that said seat will be sustained practically in an unyielding manner.

The lower end of the bearing e is provided with a concavity e², which constitutes the fulcrum for, as herein shown, the rounded end g of a scraper g', said scraper having a substantially straight edge g² to contact with the cloth or other surface of the usual couch-roll, the back of the scraper being herein represented as concaved, as at g³, to contact with the exterior of the inflated tube b. Fig. 2 shows the scraper acting upon the couch-roll
70 at a point behind a line drawn vertically through the axis of the shaft B'. This scraper, for the best results, will be made of a hard wood, such as maple-wood or some other smooth and solid wood, which while acting as a scraper will withstand the wear caused by the friction of the constantly-revolving
75 80 85 90 95 100

couch-roll, and it is backed up throughout its length with the inflated tube, and held in this way the scraper may yield somewhat to any variations in thickness of the covering or in the outline of the surface of the couch-roll, and yielding somewhat, as it may, so back up the action of the scraper that it will be less harsh upon the felt covering, and the latter will therefore last longer.

It will be understood that the renewal of the felt covering of a couch-roll is a matter of very considerable expense, and any improvements in this class of machine tending to the durability of the couch-roll and also to the efficiency of the machine is a matter of very considerable importance to paper-manufacturers.

The inflated tube inclosed by felt is very desirable for use in the manufacture of paper from the finer classes of pulp; but in fast-running machines using wood-pulp a rather sharp smooth edge is desired, and when this edge is supported so that it may yield the jacket on the rapidly-turning couch-roll is less worn in use, and consequently it will last longer.

The yielding but rigid-surfaced scraper so effectually cleans the couch-roll that the wires of the Fourdrinier belt are prevented from injury and undue wear.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a paper-making machine, a couch-

roll, an inflated tube, means to sustain said tube, and a scraper occupying a position between the said inflated tube and the covering of the couch-roll and having an edge bearing upon said couch-roll, substantially as described.

2. In a paper-making machine, a couch-roll, a guard board or device having sustained upon it an inflated tube; combined with a pivoted scraper located between said inflated tube and said couch-roll and acted upon at its rear side by the tube, it holding an edge of the scraper in a yielding manner against the surface of the couch-roll, substantially as described.

3. In a paper-making machine, a guard-board having attached bearings concaved to receive an inflated tube, and also one edge of a scraper; combined with an inflated tube sustained by said bearings, and a scraper also pivotally mounted in said bearings, an edge of said scraper acting against the surface of the couch-roll, the inflated tube acting against the rear side of the scraper and holding it in a yielding manner with its edge pressed against the surface of the couch-roll, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DENNIS B. McMURRAY.

Witnesses:

CHARLES F. BAKER,
WALTER PERLEY HALL.