No. 776,863. PATENTED DEC. 6, 1904.

J. MÜLLER.
BARREL SCRUBBING MACHINE.

APPLICATION FILED JUNE 1, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

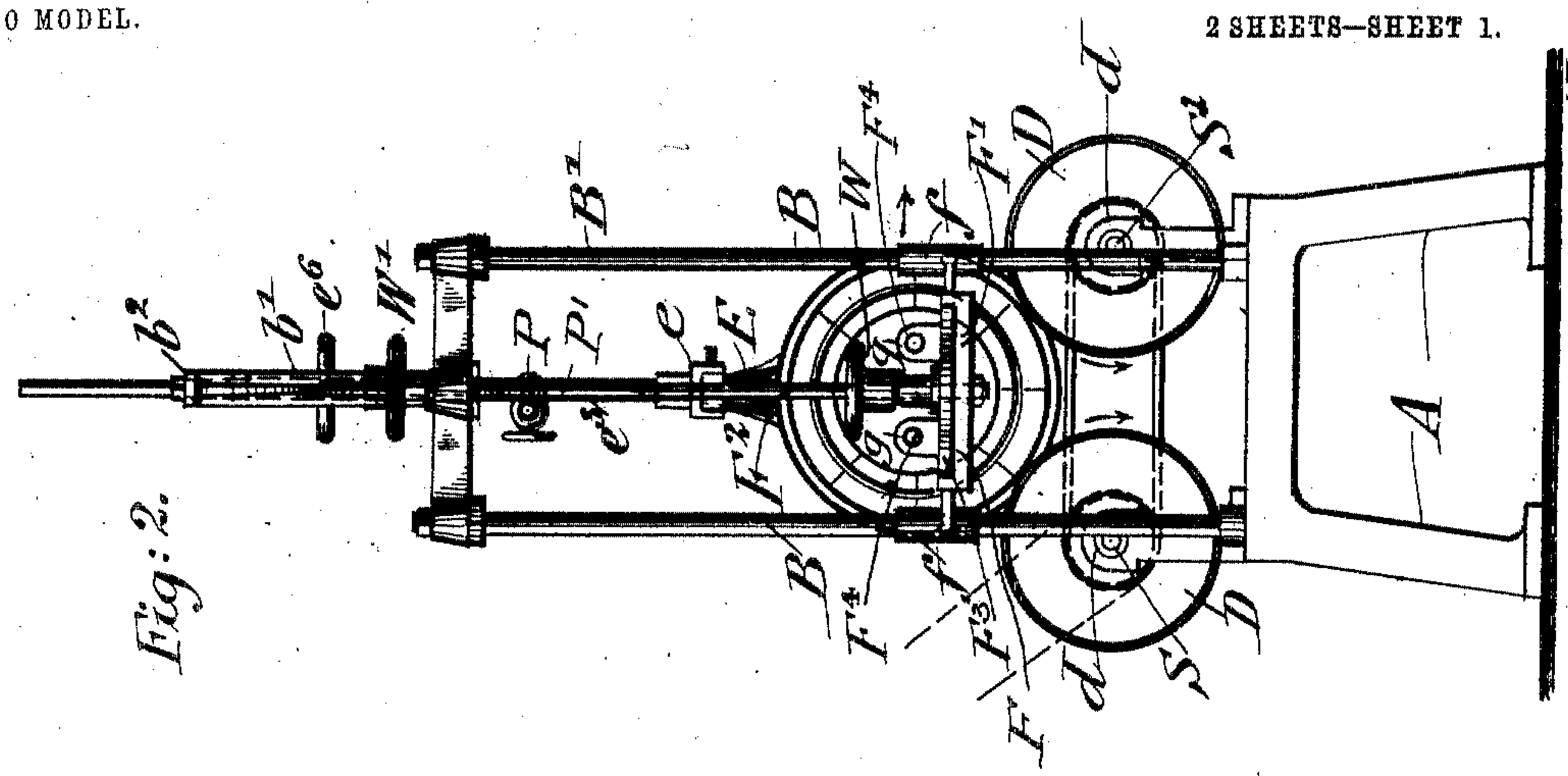

Fig: 2.

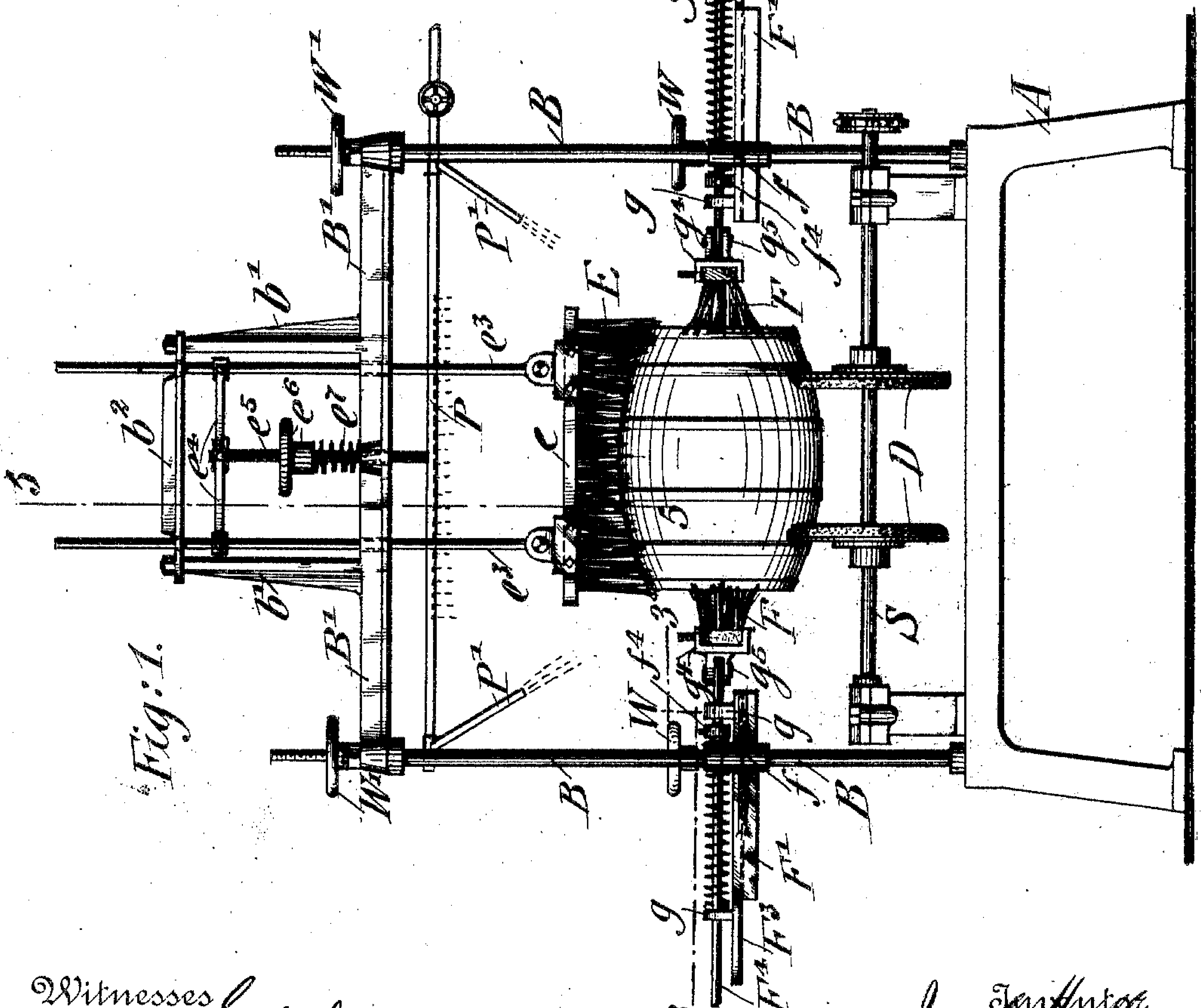

Fig: 1.

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NO MODEL. 2 SHEETS—SHEET 2.

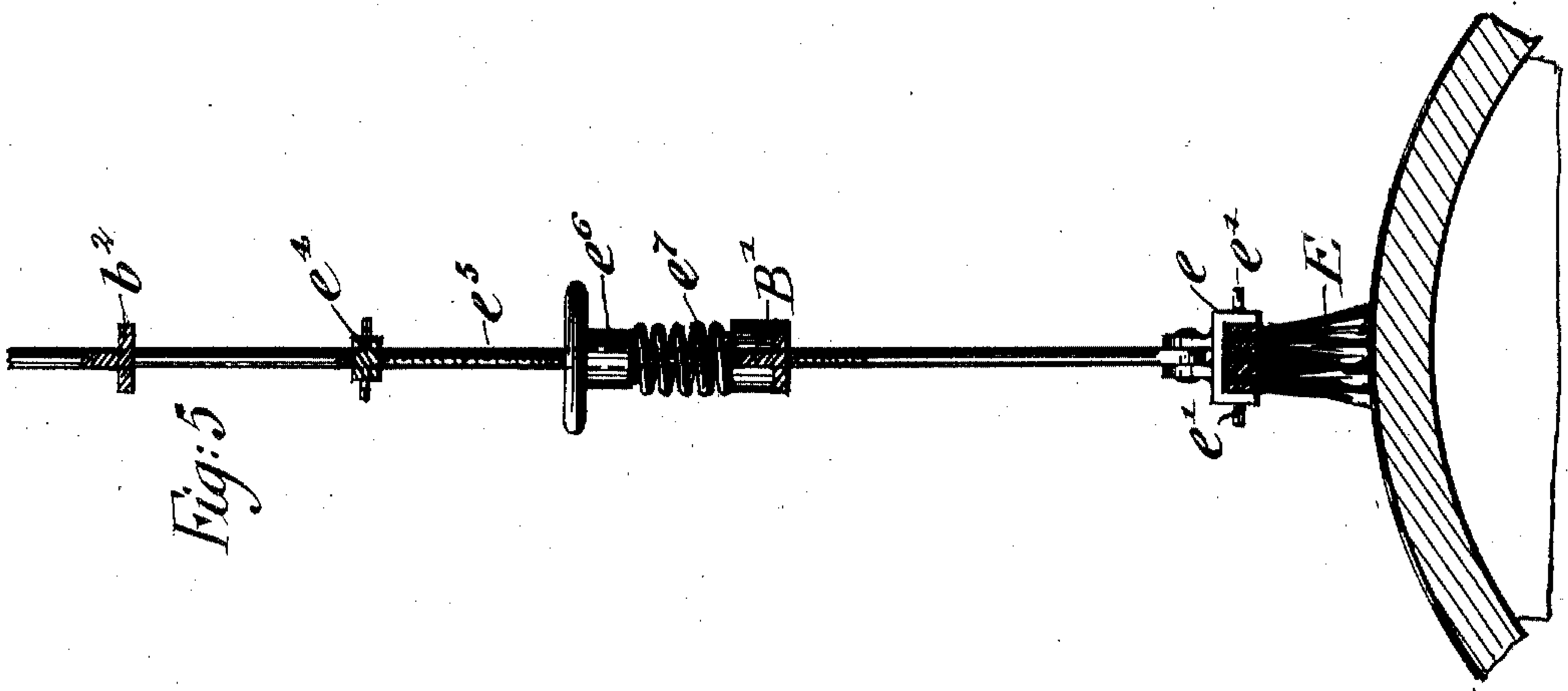

Fig: 5

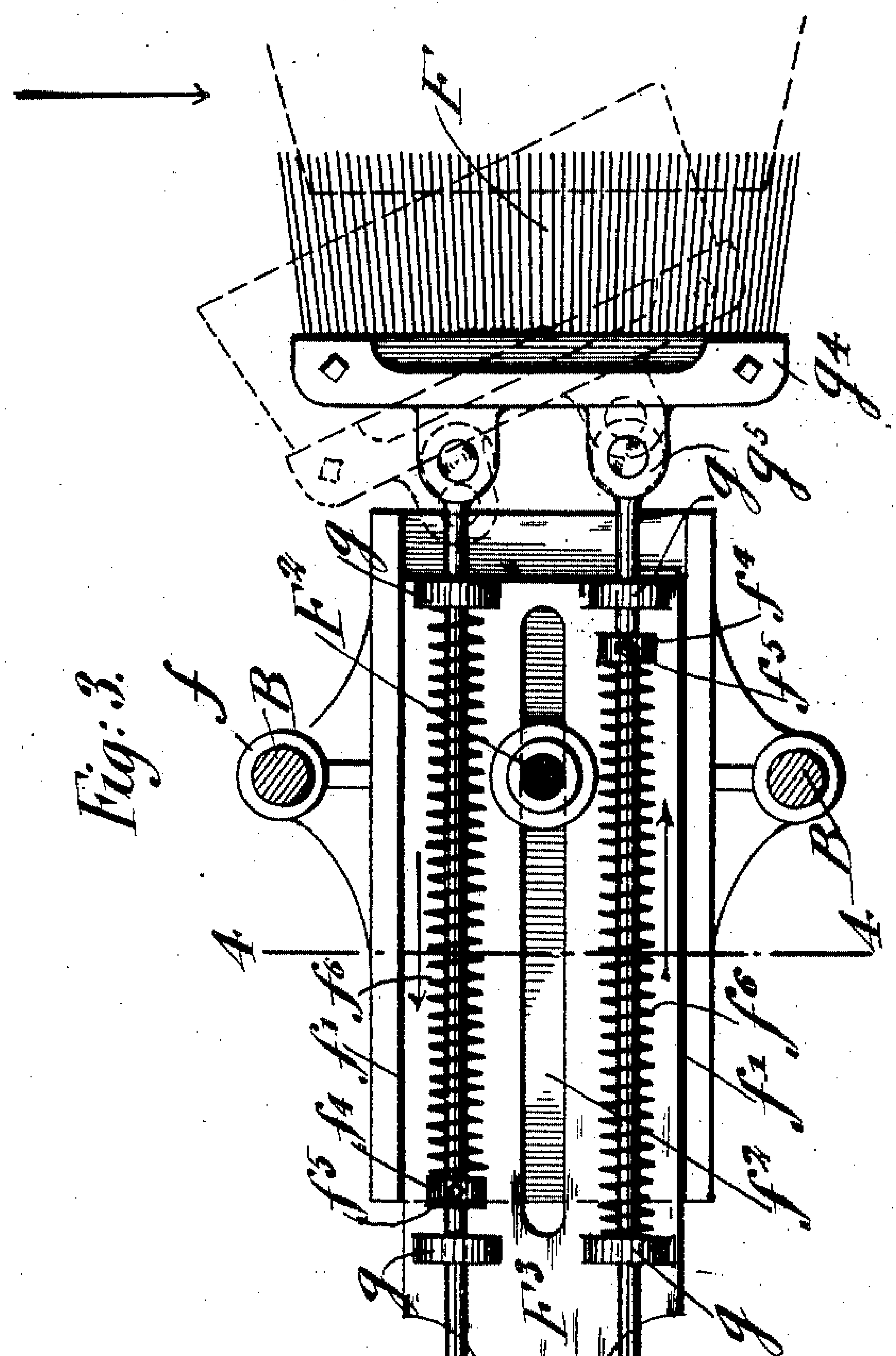

Fig: 3.

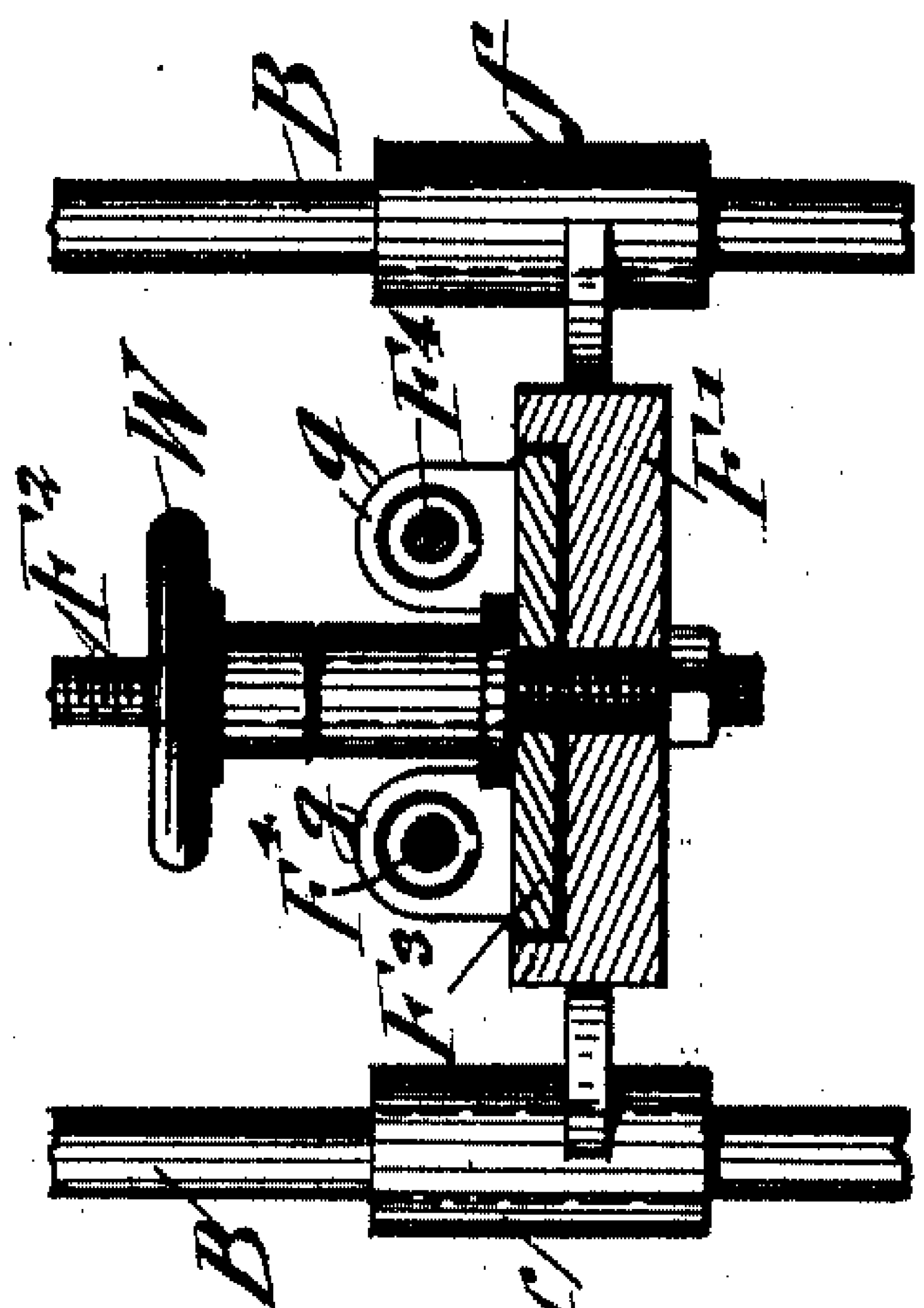

Fig: 4.

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UNITED STATES PATENT OFFICE.

JACOB MÜLLER, OF NEW YORK, N. Y., ASSIGNOR TO CAROLINE H. MÜLLER, OF NEW YORK, N. Y.

BARREL-SCRUBBING MACHINE.

SPECIFICATION forming part of Letters Patent No. 776,863, dated December 6, 1904.

Application filed June 1, 1904. Serial No. 210,709. (No model.)

To all whom it may concern:

Be it known that I, JACOB MÜLLER, a citizen of the United States, residing in New York, borough of Manhattan, in the State of New York, have invented certain new and useful Improvements in Barrel-Scrubbing Machines, of which the following is a specification.

This invention relates to improvements in machines for scrubbing barrels and kegs in breweries, and more especially to means for facilitating the adjustment of the bilge and head scrubbing brushes, so that the barrels can be more conveniently inserted between said brushes and the latter can be adjusted from time to time as they gradually wear off; and for this purpose the invention consists of a barrel-scrubbing machine in which the head-scrubbing brushes are arranged in such a manner that they assume an inclined position toward the direction of the incoming barrels, while they are held at right angles to the same when rotary motion is imparted to the barrels.

The invention consists, further, in the details of construction by which the head-brushes are adjusted as they gradually wear off, and the invention consists, lastly, of means for adjusting the bilge-scrubbing brush, so as to provide for the gradual wear of the same and adjust the position thereof to the differently-sized barrels to be scrubbed.

In the accompanying drawings, Figure 1 is a side elevation of my improved barrel-scrubbing machine. Fig. 2 is an end elevation of the same. Fig. 3 is a detail horizontal section on line 3 3, Fig. 1, showing the adjustable support of the head-scrubbing brushes, drawn on a larger scale. Fig. 4 is a vertical transverse section on line 4 4, Fig. 3; and Fig. 5 is a vertical transverse section on line 5 5, Fig. 1, drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A indicates the oblong base-frame of my improved barrel-scrubbing machine. On the corners of this base-frame are supported upright posts B, which are connected at their upper ends to an I-shaped frame B′, on which are supported upright posts b' b', connected at their upper ends by a stationary cross-piece b^2, as shown clearly in Fig. 1. On the base-frame A are supported journal-bearings d for two parallel shafts S S′, each of which is provided with a pair of disks D, having inwardly-tapering rubber peripheries, so as to provide for the bilge of the barrel to be rotatably supported thereon. The disks D are attached to the shafts S S′, which are rotated by any suitable means, such as a sprocket-wheel and chains, which transmit rotary motion from the shaft S to the shaft S′ in the usual manner.

The bilge or main brush E is supported in suitable holders e by means of set-screws e', as shown in Fig. 5. It is made of a length equal to the length of the barrel, the bristles being cut to correspond to the bilge of the barrel to be scrubbed. The holders e are provided with ears and pivoted to the lower I-shaped ends of upright suspension-rods e^3, that pass through the top frame B′ and the cross-bar b^2, these supporting-rods being connected below the supplemental frame by a cross-piece e^4, to which is attached a central depending screw-spindle e^5, on which is placed a screw-nut e^6, between which and the top frame B′ is interposed a helical spring e^7. The lower end of the screw-spindle e^5 is guided in an opening of the top frame B′, so as to follow freely the motion of the supporting-rods e^3. The main brush rests on the barrel to be scrubbed and "gives" freely to the motion of the barrel, it being cushioned by the helical spring e^7. The supporting-rods are guided in openings of the top frame B′ and adjusted in the same by the screw-nut e^6 higher or lower, so as to adjust the main scrubbing-brush to the different sizes of barrels to be scrubbed, the helical spring e^7 serving as a cushioning-spring for the main brush whatever be the position of the same.

The head-scrubbing brushes F are arranged adjacent to each head of the barrel and are supported on horizontal plates F′, guided by means of sleeves f on the corner-posts B. Each plate F′ is connected to the lower end of a suspension-rod F^2, which is threaded at

the upper and lower ends, at the lower end for applying the necessary clamping-nuts and washers, so as to attach the plate F′ to the lower end of the suspension-rod F^2, and at the upper end for applying a screw-nut provided with a hand-wheel W′ for raising the suspension-rods F^2, and thereby the plate F′ on the corner-posts B. The supporting-plate F′ is provided at both sides with ways f' for guiding a plate F^3, which is provided with a central slot f^2 for being guided along the suspension-rod F^2 and with two pairs of perforated ears $g\ g'$ for guiding the horizontal supporting-rods F^4 of the head-scrubbing brushes F. The plate F^3 is firmly clamped to the supporting-plate F′ by hand screw-nuts W, so as to be retained firmly in position on the plate when the head-scrubbing brushes F are in use. The holders g^4 for the backs of the head-scrubbing brushes are provided with perforated ears g^5, which are pivoted to the I-shaped ends of the supporting-rods F^4 and capable of yielding motion thereon.

To each rod F^4 is applied a collar f^4, firmly held in position on the same by a set-screw f^5. The collar f^4 on one rod is applied near the outer perforated ear g of the plate F^3, while the collar of the second rod is applied near the inner perforated ear of said plate. Between one of the inner perforated ears of the plate F^3 and the corresponding collar f^4, in proximity to one of the outer perforated ears, is interposed a helical spring f^6, while a second helical spring f^6 is interposed between the other outer perforated ear and the other collar, f^4, one helical spring acting in one direction while the second spring is acting in the opposite direction, as indicated in Fig. 3, so that the head-scrubbing brush is held normally in an inclined position toward the axis of the direction of the incoming barrel, as shown in dotted lines in Fig. 3. As the brushes are thereby placed both in converging position toward each other, they are farther apart at the incoming ends of the brushes than at the outgoing end, and the delivery of the barrel to the brushes is thereby facilitated. The brushes assume then the position shown in full lines in Fig. 3 as soon as the barrel comes into position on the supporting-disks, in which case both springs act on the head-scrubbing brushes and hold the same in firm contact with the heads of the barrel, so as to effect the proper cleaning of the same.

When the brushes are worn out, the position of the plate F^3 is changed by loosening the clamping-screw nut and moving the plate forward, so that the rods are set forward toward the head of the barrel, whereby the brushes can be gradually used up until new brushes are required. The collars f^4 serve for adjusting the tension of the cushioning-springs. When one end of the head-brushes is worn out, the brushes are reversed on their holders, so that the less-worn end is then subjected to the wear.

The adjustment of the head-brushes to the different sizes of barrels is accomplished by hand screw-nuts W′ applied to the upper ends of the suspension-rods F^2, by which the supporting-plate F′ is raised higher or lower on the upright supporting-posts B, so that the head-scrubbing brushes can assume a higher or lower position, but always be diametrically disposed with respect to the heads of differently-sized barrels.

Water is supplied to the main and head-scrubbing brushes by a perforated supply-pipe P arranged below the top plate B′ and by inclined supply-pipes P′, which deliver the water to the head-scrubbing brushes, as shown in Fig. 1.

The advantages of my improved barrel-scrubbing machine are that the main and head-scrubbing brushes can be readily adjusted so as to provide for the wearing out of the brushes, that the head-brushes facilitate the incoming motion of the barrel by the converging position of the brushes, and that the pressure of the brushes on the circumference and heads of the barrel can be adjusted so as to permit the reliable and effective scrubbing of the same.

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

1. In a barrel-scrubbing machine, a suitable frame, head-brushes disposed at either side of said frame, a barrel-supporting means intermediate of said brushes, and means for normally holding said brushes in diverging position with respect to the incoming barrel but in contact with and parallel to the heads thereof when the barrel is in position between said brushes.

2. In a barrel-scrubbing machine, a brush-supporting plate having a pair of rods independently slidable thereon, a brush pivoted to said rods, and means for tensioning said rods in opposite directions.

3. In a barrel-scrubbing machine, the combination, with upright side posts, of supporting-plates adjustable on said side posts, auxiliary plates carried by said supporting-plates, rods independently slidable on said auxiliary plates, brushes pivoted to said rods, and oppositely-acting springs attached to said rods for normally holding said brushes in diverging position with respect to the incoming barrel but in contact with and parallel to the heads thereof when said barrel is in position to be operated upon.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JACOB MÜLLER.

Witnesses:
C. F. RAISS,
OTTO ROSENBURG.