No. 854,030. PATENTED MAY 21, 1907.

J. E. DOWD.

FULLING MILL.

APPLICATION FILED APR. 18, 1906.

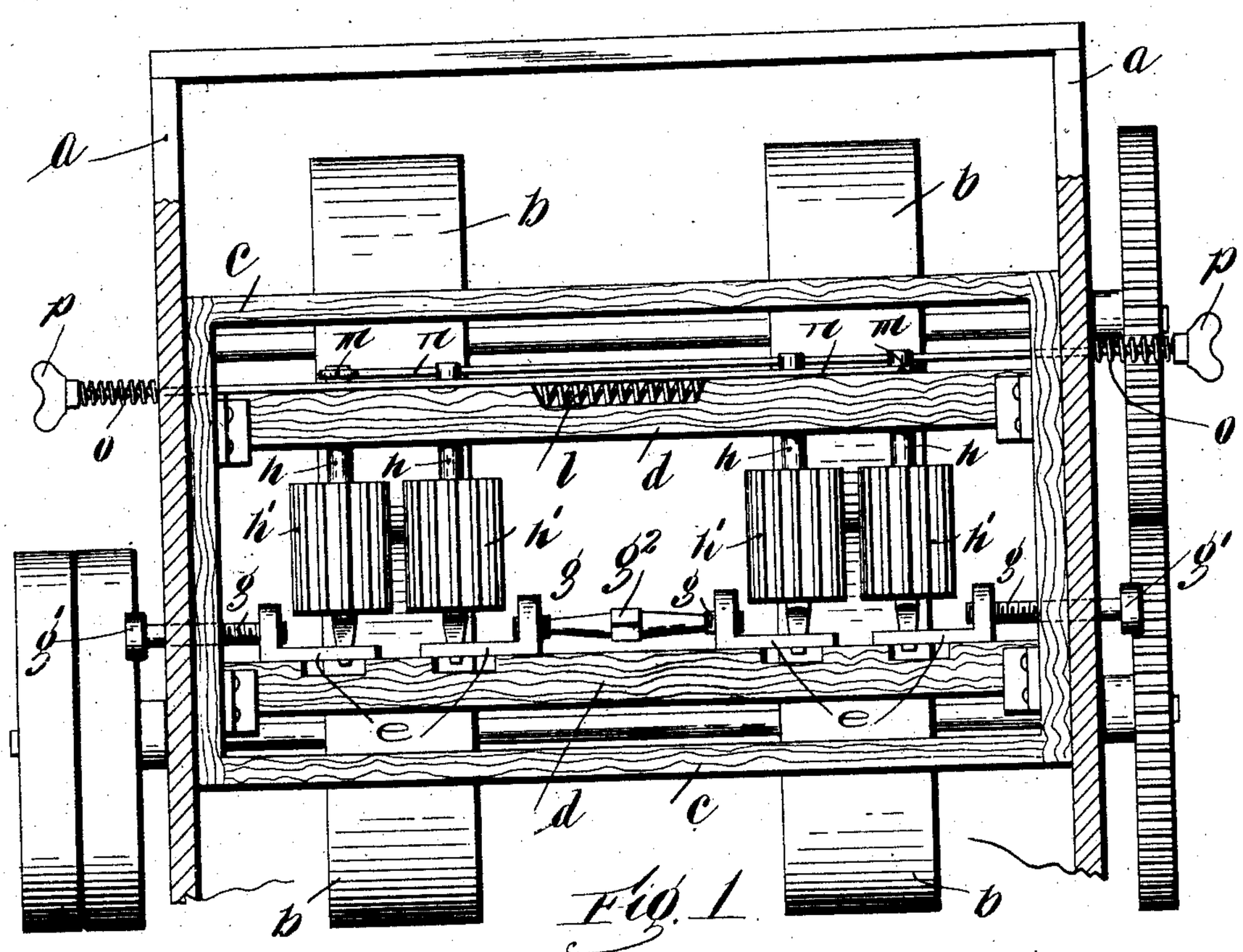

Fig. 1

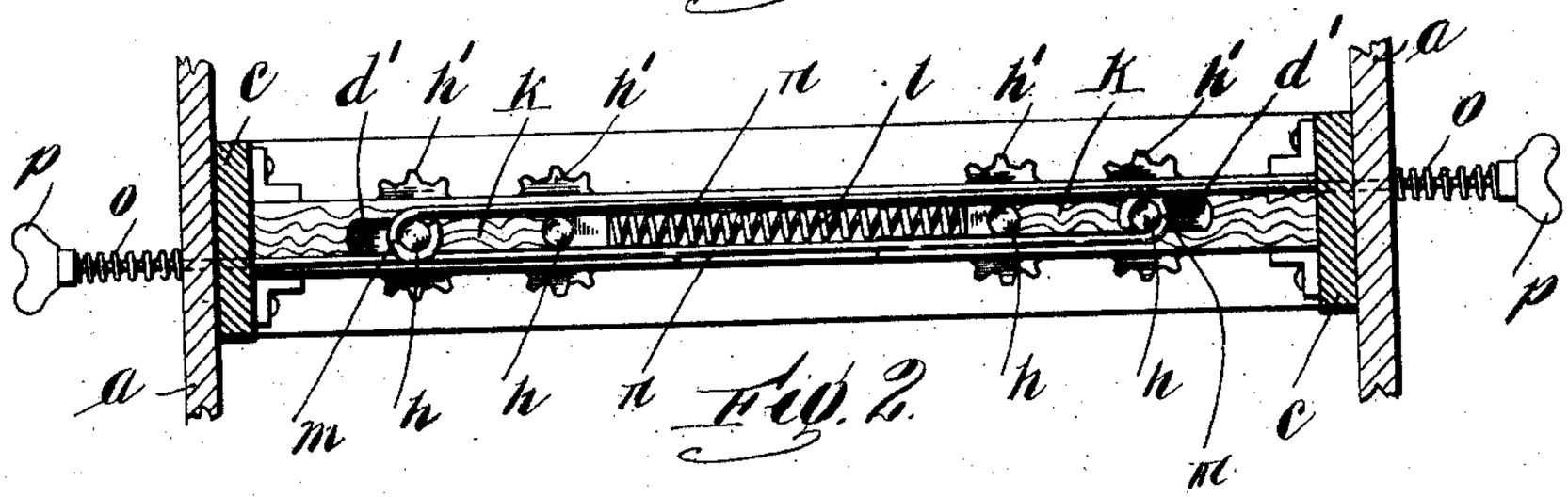

Fig. 2.

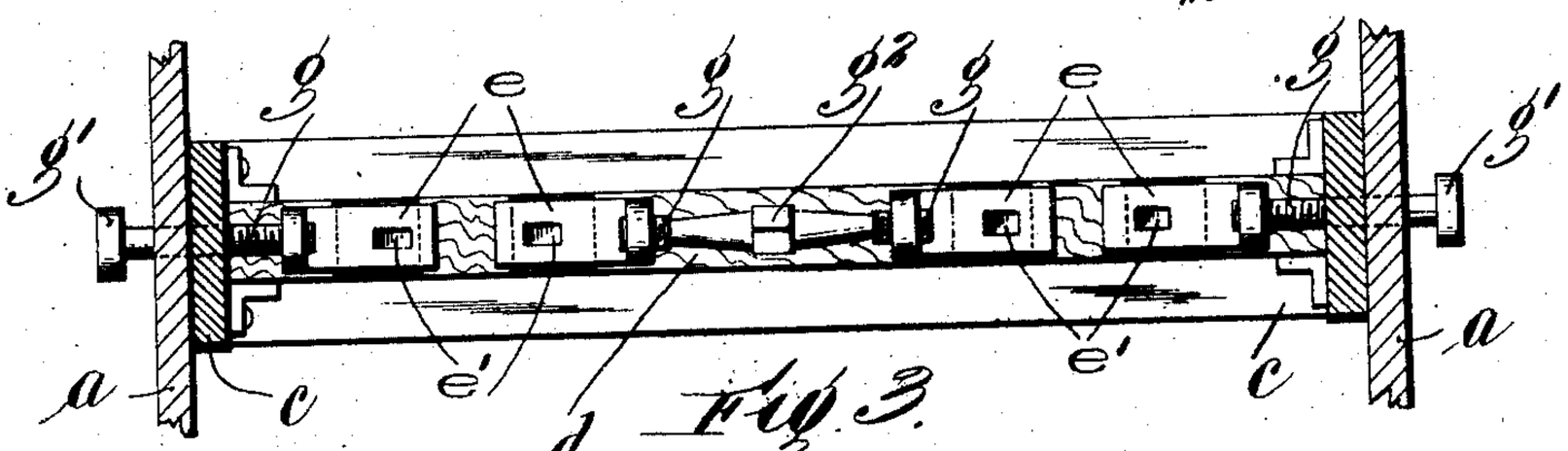

Fig. 3.

Witnesses:
C. F. Wesson.
C. W. Allen.

Inventor;
J. E. Dowd.
By Attorneys
Southgate & Southgate.

UNITED STATES PATENT OFFICE.

JAMES E. DOWD, OF HILLSBORO BRIDGE, NEW HAMPSHIRE.

FULLING-MILL.

No. 854,030. Specification of Letters Patent. Patented May 21, 1907.

Application filed April 18, 1906. Serial No. 312,384.

To all whom it may concern:

Be it known that I, JAMES E. DOWD, a citizen of the United States, residing at Hillsboro Bridge, in the county of Hillsboro and State of New Hampshire, have invented a new and useful Fulling-Mill, of which the following is a specification.

My invention relates to certain improvements in fulling mills, whereby the horizontal disks now employed for directing the cloth into the main rolls are dispensed with and a more efficient and effective mechanism substituted therefor.

My invention also includes the provision of means whereby the rolls which are substituted for these disks are made adjustable and yieldingly held in position.

Further objects of the invention will appear below.

Reference is to be had to the accompanying drawings, in which

Figure 1 is a front elevation of the upper part of a fulling mill partly in section. Fig. 2 is a plan of the supporting frame shown in Fig. 1, and Fig. 3 is a sectional view taken above the bottom of this frame.

I have shown a fulling mill casing *a* of any ordinary construction. In this casing are mounted the main rolls *b*, these rolls operating in the usual or any desired manner, and rotating preferably on horizontal shafts. In front of these rolls I have mounted a frame *c*, and extending along this frame are a pair of plates *d*, the upper one of which is provided with a slot *d'*, and the lower one with adjustable bearing plates *e*. These bearing plates are provided with perforations or cavities *e'* for receiving shafts *h*. They are also provided with openings through which screws *g* can pass. The screws on the outside are provided with heads *g'*, by means of which they can be adjusted out and in. The inner screws *g* are connected by a nut g^2 which can be turned in a similar manner to adjust the corresponding bearing plates toward and from each other.

On the shafts *h* are mounted vertical corrugated, fluted, or grooved rolls *h'* for directing the material into the main rolls, stretching it and regulating its width. They are obviously held the required distance apart by the adjustment of the bearing plates on which the shafts are mounted. The rolls preferably rotate freely on these shafts. The upper ends of the shafts pass through the slot *d*, and each pair of shafts, when a plurality of pairs of main rolls are used, are separated by movable blocks *k*. These blocks have bearings for the ends of the shafts, and the two blocks, when a double machine is employed, are supported by resilient means in the form of a spring *l* normally pressing the two blocks outwardly. Each of the outer shafts is provided with a hook *m* mounted on a rod *n* passing by the other side of the casing and normally forced in that direction by a spring *o* or any equivalent means. I have shown a thumb-nut *p* on each of the rods *n* for adjusting the tension of the spring *o*.

It will be seen that while the lower bearings are adjusted positively in order to hold the grooved or corrugated rolls at the proper distance apart, the upper ends of the shafts are resiliently held so that the rolls will yield to a slight degree, and that degree may be regulated by the thumb-nuts *p*. The upper ends of each pair of shafts are held a certain distance apart by the block between them, while the lower ends are adjustable. By constructing this part of the fulling mill in the manner described, or any other manner to come within the scope of my invention, as expressed in the claims, the efficiency of the whole fulling mill is greatly increased, and any danger of delaying the action thereof on account of introducing too much cloth at a time is avoided by the resilient means which I employ for holding the upper ends of the rolls. Proper adjustments can be also provided for operating upon different kinds of cloth.

While I have illustrated and described a particular form in which my invention may be conveniently embodied, I am aware that many modifications may be made therein within the scope of my invention as expressed in the claims, and, therefore, I do not wish to be limited to the exact form shown, nor to the particular type of fulling mill which I have illustrated.

What I claim is:—

1. In a fulling mill, the combination of two pairs of feeding rolls mounted on parallel shafts, an adjustable bearing for each shaft at one end thereof, means for adjusting said bearings, means for preventing the shafts of each pair from moving toward each other beyond a certain point, and resilient means for holding the same ends of the shafts of each pair together and for connecting the said ends of the shafts of the two pairs.

2. In a fulling mill, the combination of a frame having two plates one above the other, the upper one having a longitudinal slot, two pairs of vertical shafts arranged in the same plane and mounted on said plates, a corrugated roll mounted on each shaft, said shafts passing through said longitudinal slots, adjustable means for resiliently forcing the upper ends of the two end shafts inwardly toward each other, and resilient means for normally forcing the shafts of each pair away from those of the other pair.

3. In a fulling mill, the combination of a frame having two plates, the upper of said plates being provided with a longitudinal slot, bearing plates slidably mounted on said frame and arranged in pairs, means for adjusting said bearing plates of each pair toward and from each other, each bearing plate being provided with an opening, a vertical shaft resting in the opening in each bearing plate, a roll mounted on each of said shafts, said shafts passing through said longitudinal slots, a hook connected with one of said shafts and passing to the opposite side of the frame, and resilient means for forcing said hook toward said opposite side of the frame.

4. In a fulling mill, the combination of two pairs of shafts located in a plane, corrugated rollers mounted on said shafts, a frame having a slot through which said shafts project, a spring for forcing the shafts of each pair away from those of the other, a block mounted between the two shafts of each pair, and means for resiliently forcing the shafts of each pair toward those of the other pair.

5. In a fulling mill, the combination of two pairs of parallel shafts arranged in a plane, rollers mounted on said shafts, means for forcing the two inner shafts away from each other, means for positively separating each inner shaft from the adjacent outer shaft, and means for yieldingly forcing the outer shafts toward each other.

6. In a fulling mill, the combination of two pairs of parallel shafts arranged in a plane, rollers mounted on said shafts, means for yieldingly forcing the two inner shafts away from each other, and adjustable means for yieldingly forcing the outer shafts toward each other.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

JAMES E. DOWD.

Witnesses:
FRANK P. SLEEPER,
SCOTT D. HOYT.