

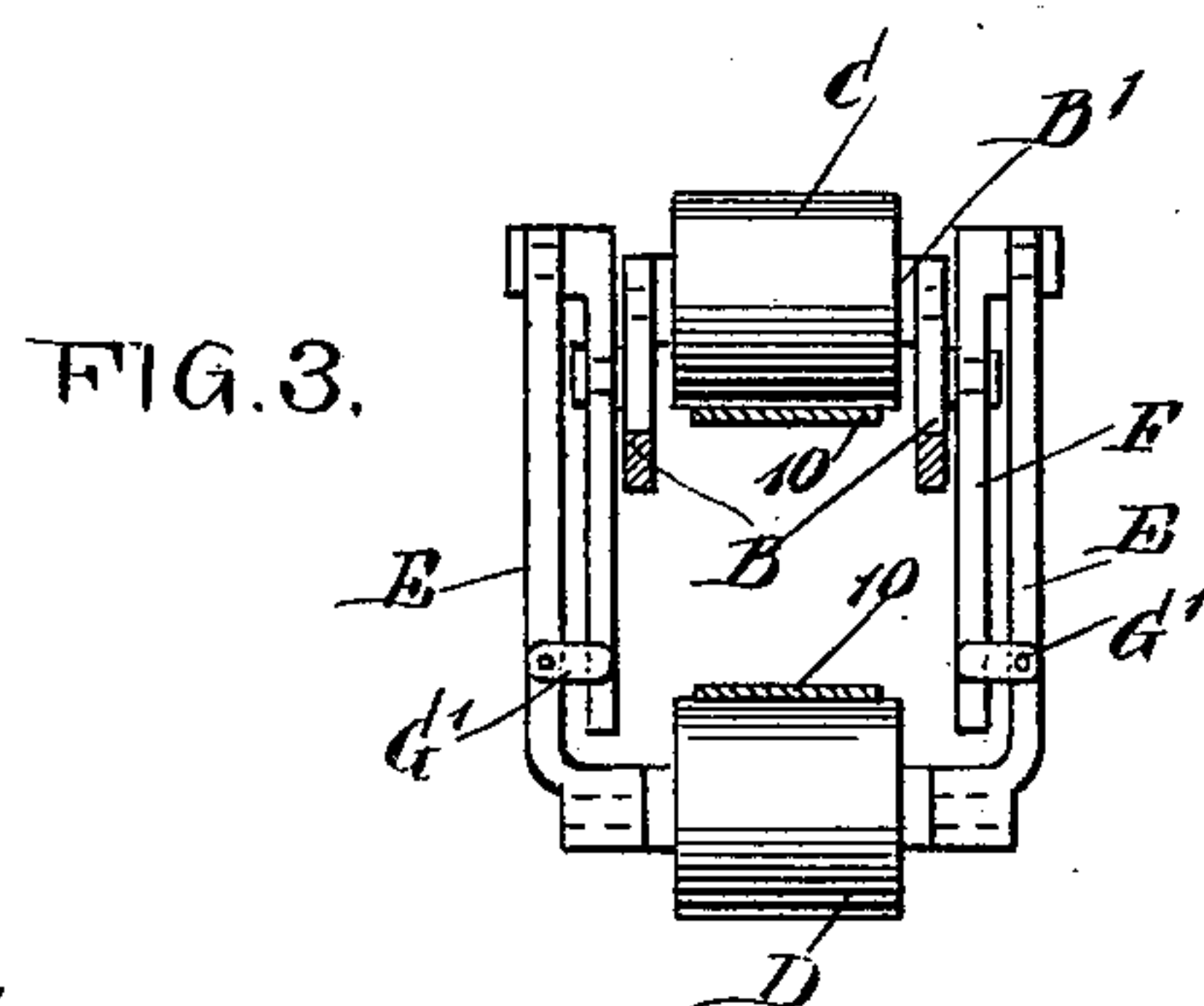
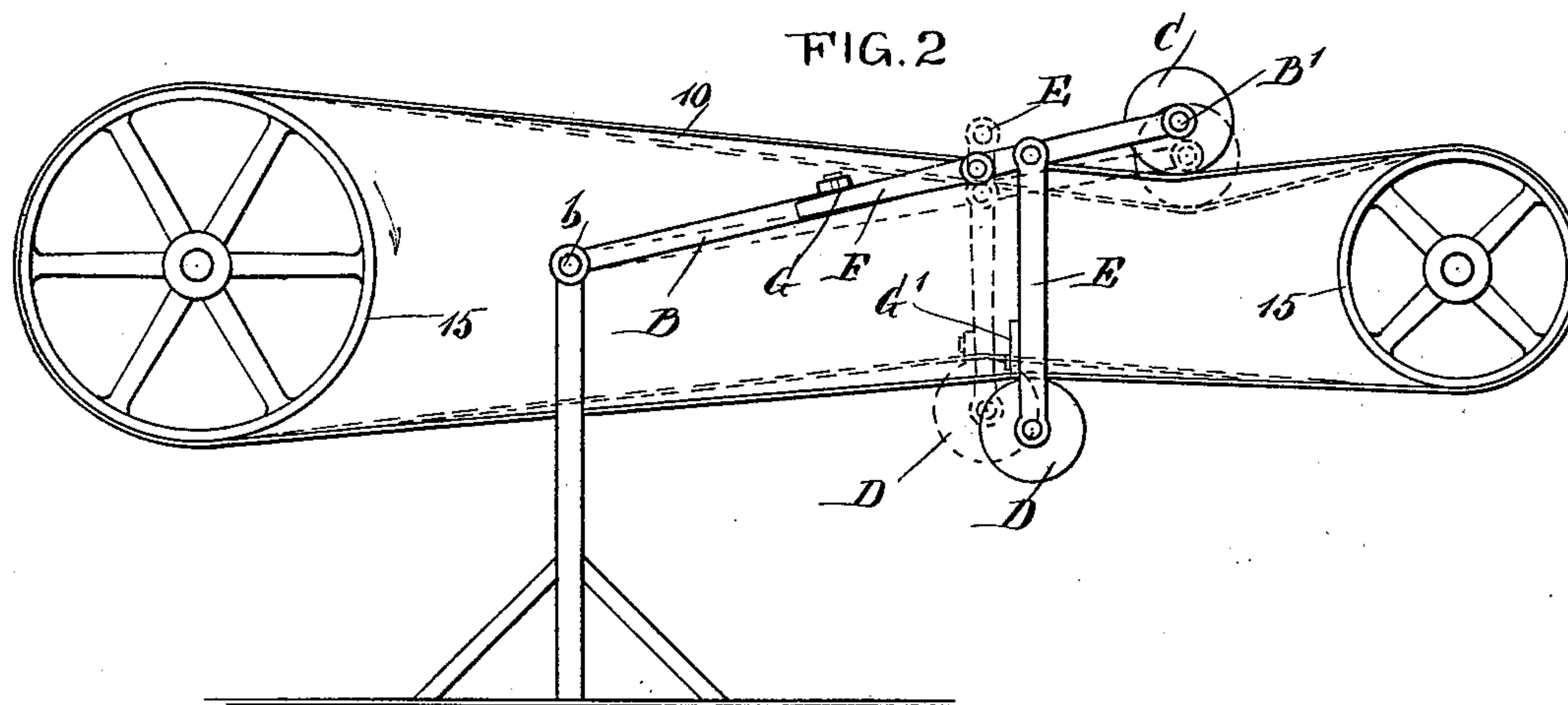
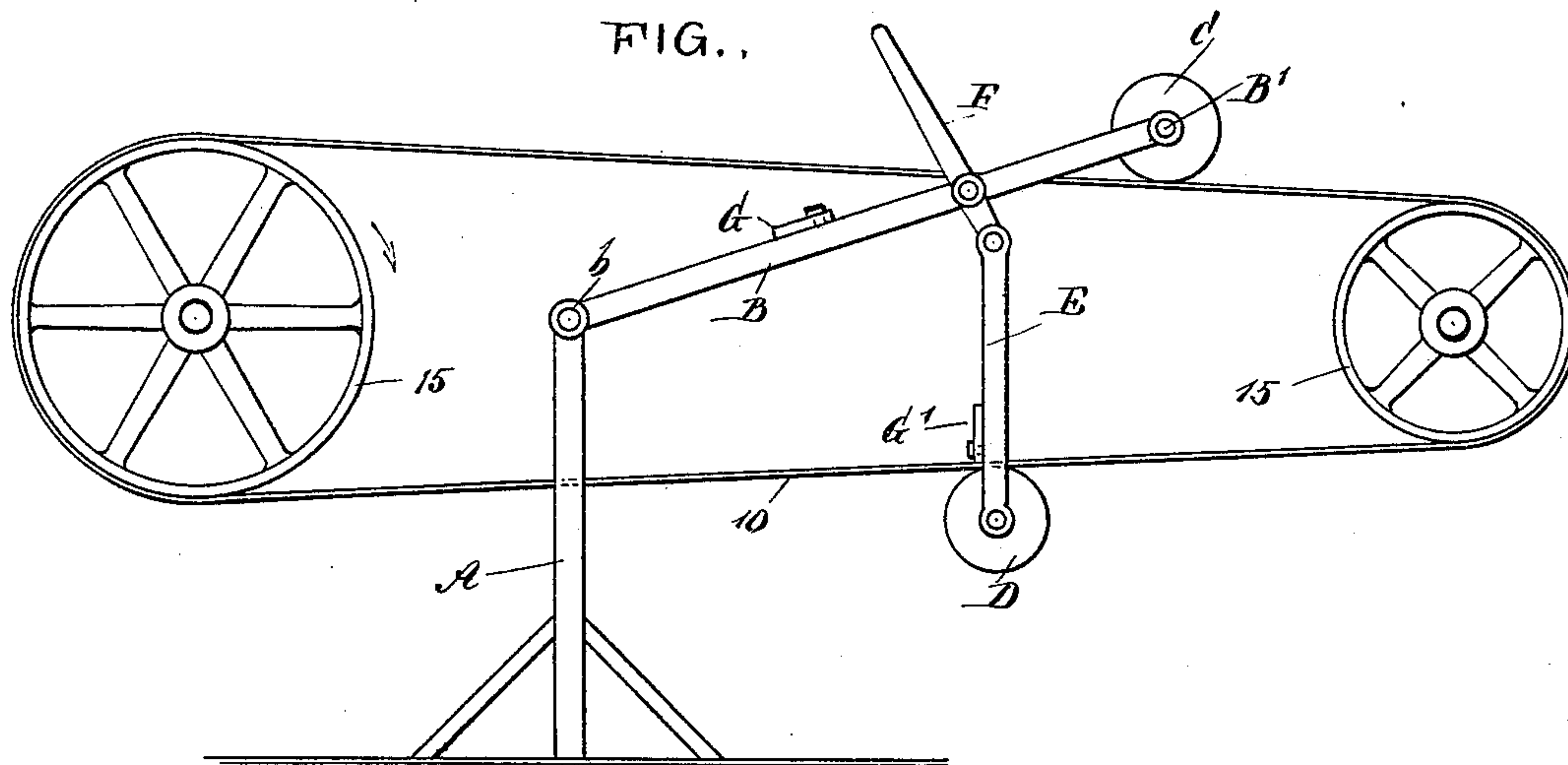
No. 613,960.

Patented Nov. 8, 1898.

E. A. BIGELOW.  
BELT TIGHTENER.

(Application filed Nov. 15, 1897.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ELIAS A. BIGELOW, OF DASH, MICHIGAN.

## BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 613,960, dated November 8, 1898.

Application filed November 15, 1897. Serial No. 658,559. (No model.)

*To all whom it may concern:*

Be it known that I, ELIAS A. BIGELOW, of Dash, in the county of Newaygo and State of Michigan, have invented a new and Improved Belt-Tightener, of which the following is a full, clear, and exact description.

The invention relates to belt-tighteners in which rollers are provided having means for causing them to exert pressure on a belt for tightening its hold on the belt-pulleys.

The invention consists in the novel features hereinafter particularly described, and defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation showing my improved belt-tightener in position for use, the tightening-rollers being in inactive positions. Fig. 2 is a similar view showing in full lines the rollers pressing on the belt to tighten the same and representing in dotted lines a further tightening of the belt, and Fig. 3 is a cross-section.

I have shown my invention applied to an ordinary belt 10, passing over pulleys 15.

On standards A or other suitable support adjacent to the belt I pivotally mount a suitable frame, here shown as composed of two arms B B, one at each side of the belt, and the free ends of the arms B B are connected by a shaft B', on which the roller C is mounted, the said roller running on the upper side of the belt 10. A second tightening-roller D is mounted on a frame E similar to the frame B B and supported from the lever F, which is fulcrumed on the frame B B, the said second roller D bearing on the under side of the lower run of the belt 10. On both the frame B B and the frame E latches G G' are pivoted to retain the lever in the desired position for causing the rollers to press on the belt. Thus by throwing the lever F from the position shown in Fig. 1 down along the frame B B, as shown in full lines in Fig. 2, the rollers will be brought toward each other, the latch G serving to hold the parts in place. If a further tightening is desired, the lever F is thrown down farther alongside the frame E, that carries the lower roller, and held to said frame

by the catch or button G', as indicated in dotted lines in Fig. 2.

In addition to the provision of means for increasing the tension exerted by the belt-tightener it will be seen that the tightener is in another sense self-adjusting. Thus assuming the pulley at the left to be the driving-pulley and to be rotating in the direction of the arrow the lower run of the belt is the working run and the upper run will accordingly be slack. With the working run laboring under the work of a heavy "load" it will tend to straighten and thus tend to throw the lower roller downward, and to an equal extent the upper roller will be pressed downward also, being in fixed relation to the lower roller. When, however, the working lower roller labors less because of a decrease in the load, the tension on the lower run will be relieved, and under these conditions the resistance of the upper run on its roller will be more effective because exerting a leverage from C to the pivot or fulcrum b, which is longer than from D to b. Hence the upper roller C will be raised and will in turn raise the lower roller D and thus in a measure oppose or compensate for the slackening of the lower run. Thus the tightener automatically maintains a uniform and effective tension and adjusts itself to the varying tendencies of the respective runs under changing conditions.

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

1. A belt-tightener, comprising a support, a frame pivoted on the support to swing bodily and as a unitary member, and two rollers at different distances from the pivot of the said frame, the rollers being spaced to bear on the opposite runs of a belt and the rollers describing each its own arc, without changing their distance from each other, when the frame swings on its pivot.

2. A belt-tightener, comprising a pivotally-mounted frame, a tightening-roller thereon, a lever fulcrumed on said frame, a second frame connected with the lever, a tightening-roller on the second frame, and means for holding the parts in adjusted position.

3. A belt-tightener comprising a pivotally-mounted frame, a tightening-roller thereon,



a lever fulcrumed on said frame, a second frame pivoted to and depending from the lever, a tightening-roller on the second frame, and catches on the two frames for holding the lever in either of two positions.

4. A belt-tightener comprising a frame having at one end a pivotal support on which it may swing as an integral structure, and rollers on the frame at different distances from the pivot of the frame, the rollers receiving both runs of the belt between them.

5. A belt-tightener comprising a frame

carrying a roller, a second frame also carrying a roller, means for holding the frames in fixed relation to each other, and means for pivotally supporting the structure at one end to permit it to swing bodily, the said rollers being at different distances from the center of movement of the structure and adapted to receive between them both runs of a belt.

ELIAS A. BIGELOW.

Witnesses:

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