No. 694,211. Patented Feb. 25, 1902.

L. J. C. SOUHAMI.

BELT AND PULLEY GEARING.

(Application filed July 22, 1901.)

(No Model.)

FIG. 1.

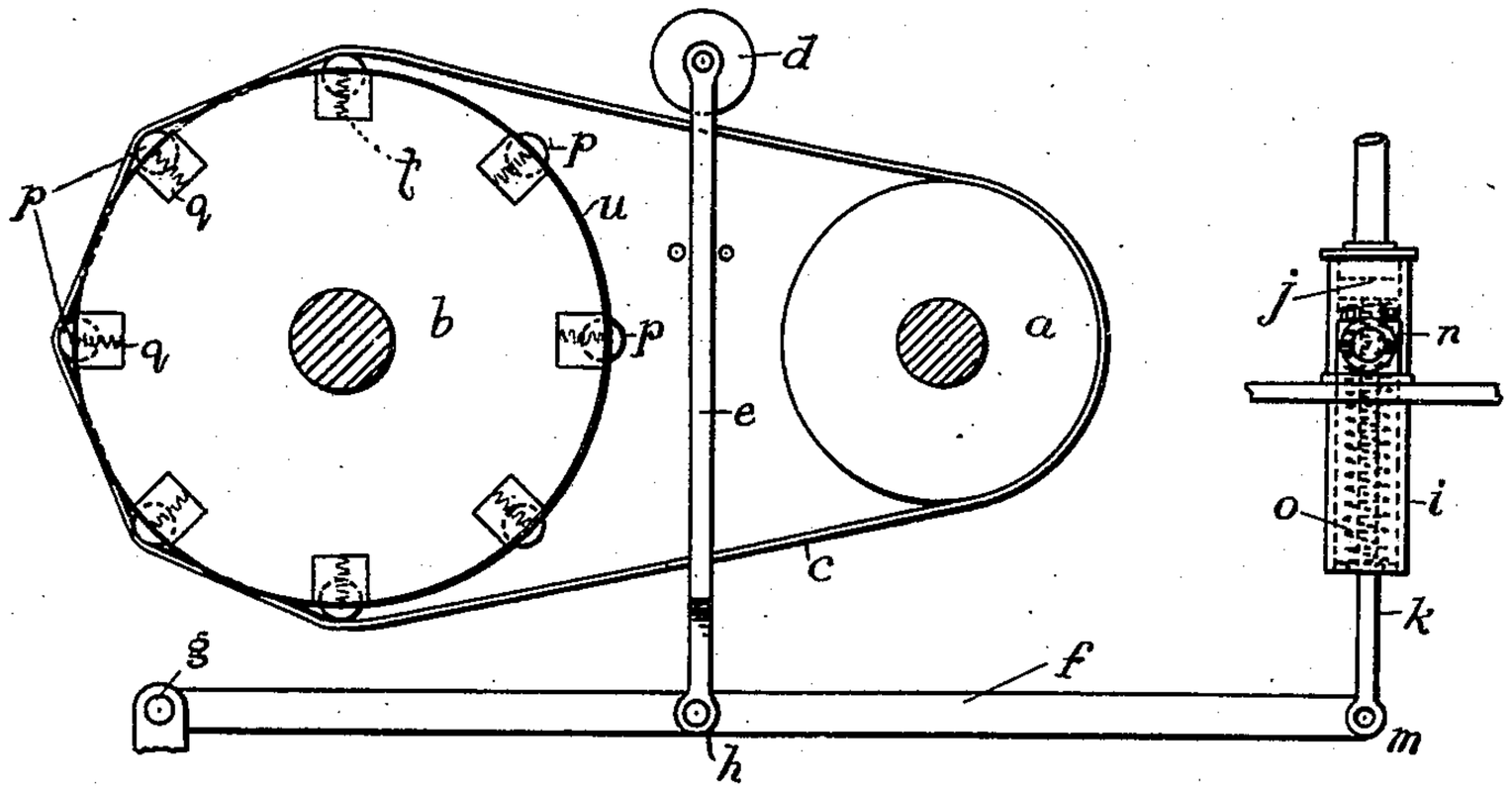

FIG. 2.

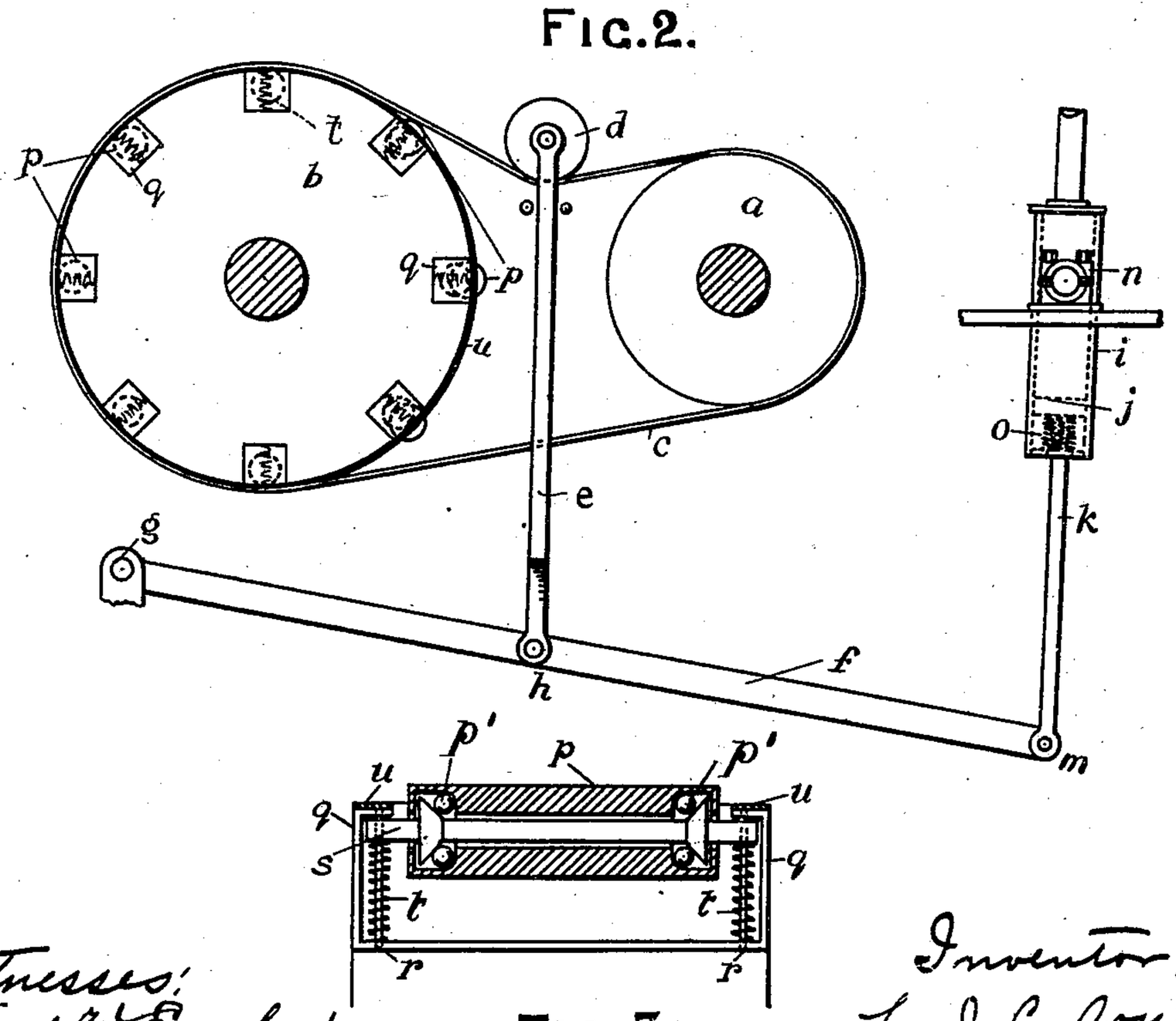

FIG. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

LEONARD JOSEPH COPPING SOUHAMI, OF LONDON, ENGLAND.

BELT-AND-PULLEY GEARING.

SPECIFICATION forming part of Letters Patent No. 694,211, dated February 25, 1902.

Application filed July 22, 1901. Serial No. 69,308. (No model.)

To all whom it may concern:

Be it known that I, LEONARD JOSEPH COPPING SOUHAMI, a subject of the King of England, residing at 128 Victoria Park road, London, England, have invented certain new and useful Improvements in and Relating to Belt-and-Pulley Gearing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to belt-and-pulley gearing, and is designed to provide a means of throwing the driven shaft into and out of action without the use of the ordinary fast and loose pulleys.

The device consists, essentially, of a pulley keyed onto the driven shaft, such pulley being provided with rollers around its circumference. These rollers are mounted above recesses cut in the pulley and are pressed outward by means of springs. Immediately above the belt which drives the pulley I so mount a "jockey-pulley" that it may be lowered when desired in order to press against the belt and take up the slack. By this means the belt is tightened round the driven pulley, forcing the rollers into the recesses, and thus enabling the belt to grip the pulley.

In order that my said invention may be clearly understood, I will describe the same with reference to the drawing accompanying this specification, in which—

Figure 1 is an elevation of the gear in its "free" state. Fig. 2 is an elevation showing the driven pulley "fast." Fig. 3 is a section on a larger scale, showing a roller on ball-bearings.

The same letters of reference are employed to denote the same parts in all the views.

a shows the driving, and *b* the driven, pulley; *c*, the belt.

d shows a jockey-pulley turning freely and carried by a fork *e*. *f* is a lever having its fulcrum at *g*. The lower end *h* of the fork *e* is pivoted to the lever *f*.

i shows a cylinder in which works a piston *j*, the rod *k* of which is pivoted to the extremity *m* of the lever *f*. The cylinder *i* rocks in bearings *n*.

o is a spring.

Rollers *p* are mounted in recesses in the pulley *b* in the manner shown at Fig. 3, in which figure *q* shows a metal framework which fits in the recess in the pulley. (See also Figs. 1 and 2.)

r r are two pins passing through holes, one at each end of the spindle *s*, which carries the roller *p* on ball-bearings *p'*.

t shows springs.

u u show bands passing around the pulley to hold the metal frames *q* in place in the recesses.

The operation of the disconnecting-gear is as follows: When the jockey-pulley *d* is in the position shown at Fig. 1, the rollers *p* project above the surface of the pulley *b*, being forced outward by the springs *t*. Consequently when the pulley *a* is turning the belt *c* simply turns the rollers *p* without moving the pulley *b*; but when air under pressure is admitted to the top of the piston *j* in the cylinder *i* the piston descends (overcoming the spring *o*) and the lever *f* is turned into the position shown at Fig. 2, bringing the jockey-pulley *b* down, and thus tightening the belt *c*. In consequence of this tightening the rollers *p* when they touch the belt are forced into the recesses in the pulley *b*, so that the belt then grips the surface of and drives the pulley *b*.

While I have shown one particular method of mounting the rollers upon the face of the pulley, it will be understood that I do not limit myself to the construction shown, the number of rollers employed and the method of mounting the same being adapted to vary according to different requirements.

Any other suitable means for actuating the jockey-pulley may be used in place of those shown.

What I claim, and desire to secure by Letters Patent, is—

1. In a device of the character described, the combination with a pair of pulleys, a belt passing over said pulleys, and a plurality of rollers resiliently set in the face of one of said pulleys; of means for applying a tension upon said belt, substantially as described.

2. In a device of the character described, the combination with a pair of pulleys, a belt passing over said pulleys, and a plurality of rollers resiliently set in the face of one of said pulleys; of a jockey-pulley adapted to apply

tension upon said belt, substantially as described.

3. In a device of the character described, the combination with a pair of pulleys, a belt passing over said pulleys, and a plurality of rollers resiliently journaled in the face of one of said pulleys; of a jockey-pulley, and fluid-pressure mechanism for actuating said jockey-pulley to apply tension upon said belt, substantially as described.

4. In a device of the character described, the combination with a pair of pulleys, a belt passing over said pulleys, and a plurality of rollers resiliently journaled in the face of one of said pulleys; of a jockey-pulley, a pivoted lever in connection with said jockey-pulley, and means for actuating said lever, substantially as described.

5. In a device of the character described, the combination with a pair of pulleys, a belt passing over said pulleys, and a plurality of rollers resiliently journaled in the face of one of said pulleys; of a jockey-pulley, a pivoted lever in connection with said jockey-pulley, a piston connected to the free end of said lever, and a fluid-pressure cylinder within which said piston reciprocates, for actuating said lever, substantially as described.

6. In a device of the character described, the combination with a belt-pulley; of a plurality of rollers yieldingly journaled in the face of said pulley, substantially as described.

7. In a device of the character described, the combination with a belt-pulley; of a plurality of rollers journaled in the face thereof, and springs beneath said rollers, adapted to force the same above the surface of said pulley, substantially as described.

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

LEONARD JOSEPH COPPING SOUHAMI.

Witnesses:
ADOLPH EDWARD VIDAL,
HERBERT ARTHUR MARSHALL.