2 Sheets--Sheet 1.

J. J. SQUIRE.

Counter-Shaft Hanger.

No. 162,867. Patented May 4, 1875.

Fig. 1.

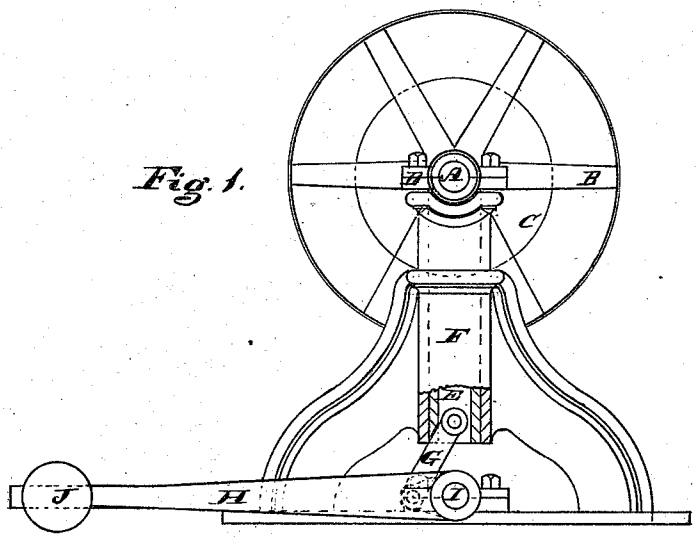


Fig. 2.

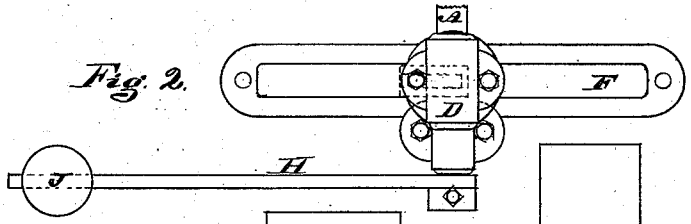
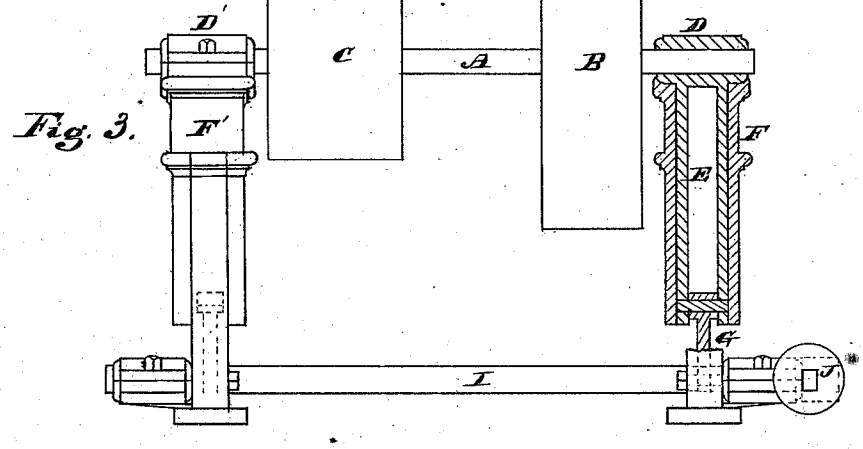


Fig. 3.



Witnesses:

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Inventor:

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2 Sheets--Sheet 2.

J. J. SQUIRE.

Counter-Shaft Hanger.

No. 162,867. Patented May 4, 1875.

Fig: 4.

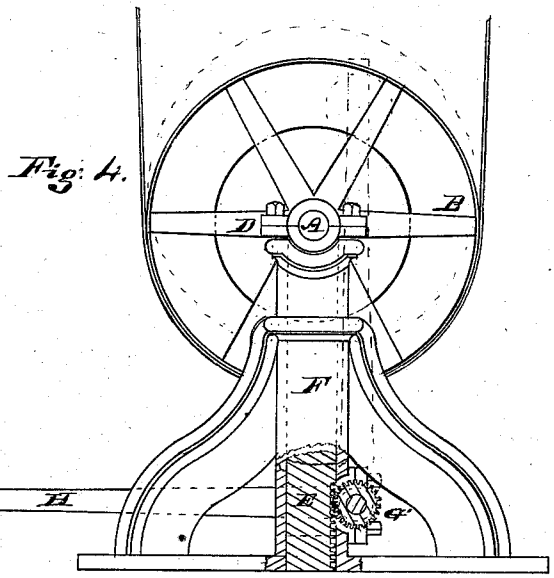


Fig: 5.

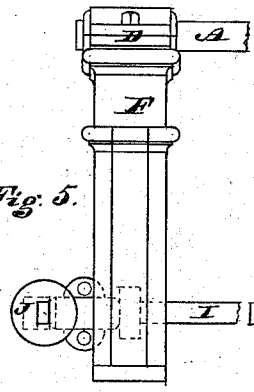


Fig: 6.

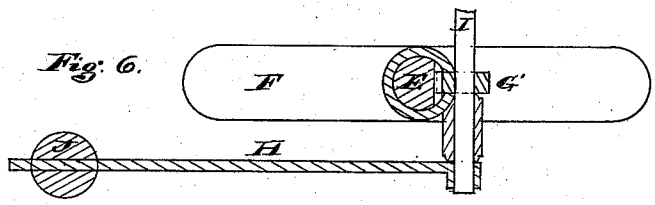


Fig: 7.

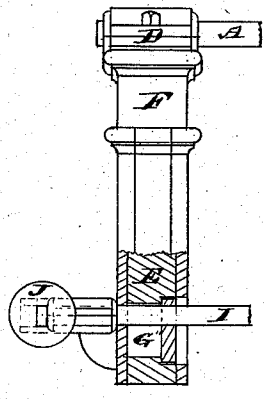
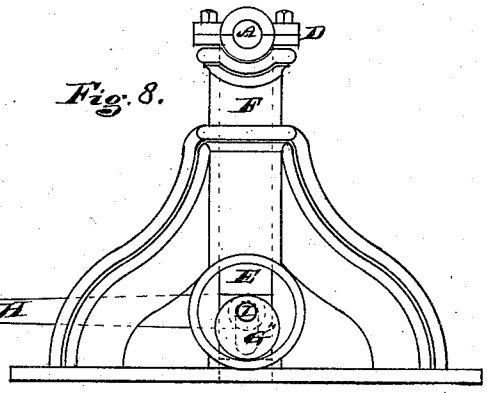


Fig: 8.



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UNITED STATES PATENT OFFICE.

JOHN J. SQUIRE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOSEPH W. BRANCH, OF SAME PLACE.

IMPROVEMENT IN COUNTER-SHAFT HANGERS.

Specification forming part of Letters Patent No. **162,867**, dated May 4, 1875; application filed February 25, 1875.

To all whom it may concern:

Be it known that I, JOHN J. SQUIRE, of St. Louis, Missouri, have invented a new and useful Improvement in Counter-Shaft Hangers, of which the following is a full, clear, and exact description, reference being had to the annexed drawing, making a part of this specification, where—

Figure 1 is an end elevation; Fig. 2, a plan; Fig. 3, a side elevation; Figs. 4, 5, and 6, modification of the invention; Figs. 7 and 8, a further modification.

Like letters of like kind indicate like parts.

The present invention relates to an improvement in shafting where belting is used for the transmission of motion between the driving-power and the machine to be driven; and its object is mainly to provide means whereby the driven pulley on the counter-shaft is readily and surely thrown into and out of connection or gear. It consists in the peculiar devices, substantially as is hereinafter set forth.

It has been customary, where numerous machines are propelled by a common power, for the purpose of stopping any one of them at pleasure, and of restoring its motion without interfering with the movements of the rest, to accomplish the engagement and disengagement by means of live and dead pulleys arranged side by side, both on the counter and driven shafts, and by slipping the belt communicating the power from one to the other accordingly.

In the present invention the loose pulleys are dispensed with, and the belt is not slipped, the object being effected by changing the position of the counter-shaft and its driven pulleys with relation to the belt. As the pulley is moved so as to tighten the belt the engagement occurs, and the disengagement is effected by a reverse movement.

Referring to the drawing, A represents an ordinary counter-shaft, provided with the usual pulley B, driven from the main shaft by a belt and the driving-pulley C, whereby the movement is communicated to the desired part. D D′ represent the bearings of the shaft, which are made adjustable, and to this end are provided with projections E E′, suitably shaped, and extending downward into the supports F F′, and fitted to slide up and down therein. At their lower ends the slides E E′, by means of toggle-connections G G, Figs. 1 and 3, or their equivalents G′ G′, Fig. 4, and G″ G″, Fig. 8, are connected with a shaft, I, extending across the frame underneath the pulleys and counter-shaft, and parallel to the latter, and hung in suitable bearings. H represents a lever attached to the shaft I. J represents a counterpoise arranged to slide on the lever.

The operation is as follows: To engage the machinery the lever H is turned down, as shown in Fig. 1. This draws the pulley B against its belt, causing it to move. Any other suitable device may be used in place of the lever H for changing the position of the counter-shaft A. To secure the requisite tautness the counterpoise J is suitably moved on the lever. To disengage the machinery the arm H is turned up, raising the pulley from the belt. Where a definite or limited movement is required the toggle, or the eccentric connections, as shown in Figs. 1 and 8, may be used; but without departing from the principle of the invention, a rack and pinion, G′ G′, Fig. 4, can be more effectually used when the counter-shaft has to be moved a greater distance.

In the manner described, it will be seen that not only can the various parts be readily thrown into and out of connection, but by means of the adjustable weight J any degree of tautness of belt can be obtained.

A further advantage arising from this method is, that all danger incident to the use of loose pulleys is obviated.

The relative position of the counter-shaft may be changed at will by changing the position of the lever accordingly—that is, if the counter-shaft have its driving-power underneath it must be raised to communicate its motion, and be lowered to arrest the movement. In this application not only is all intermediate motion from the main driver arrested, but the belt from the driver becomes stationary, and the power hitherto used in turning a loose pulley is economized, as well as the wear of those parts. When the counter-shaft is be-

neath its driver, and intermediate motion is arrested, the driving-belt remains on the driving-pulley, turning with it, but hanging loose on the driver. In either case, however, it is always in place, ready for use.

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

1. The combination of the counter-shaft A, pulley B, bearings D D′, slides E E′, supports F F′, connections G G, lever H, shaft I, and counterpoise J, substantially as described and shown.

2. The combination of the counter-shaft A, pulley B, bearings D D′, slides E E′, supports F F′, connections G G, and shaft I, substantially as described and shown.

JOHN J. SQUIRE.

Witnesses:
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CHAS. D. MOODY.