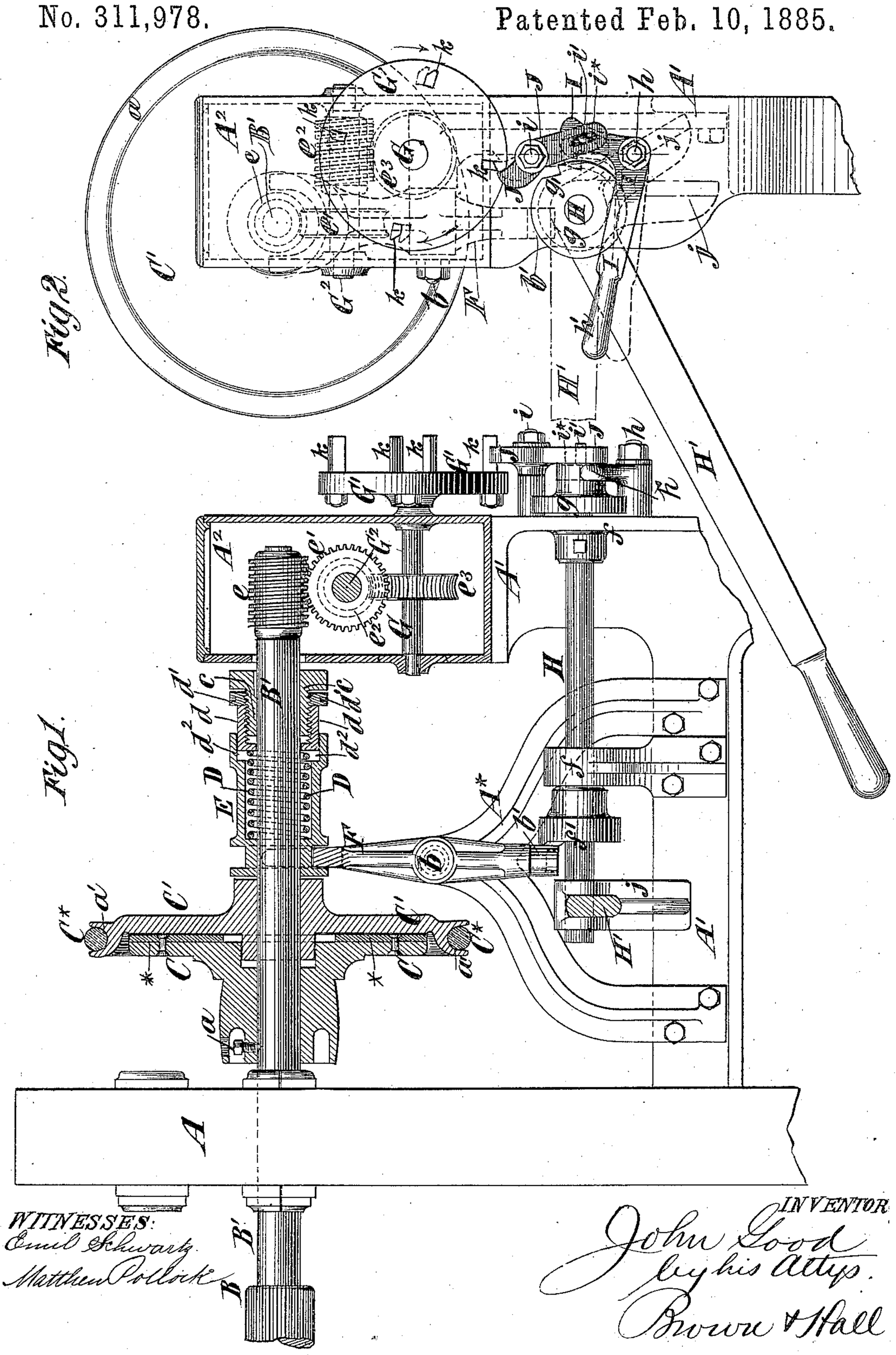
(No Model.)

J. GOOD.

MEASURING STOP MOTION FOR HEMP SPREADERS, &c.

No. 311,978. Patented Feb. 10, 1885.



UNITED STATES PATENT OFFICE.

JOHN GOOD, OF BROOKLYN, NEW YORK.

MEASURING STOP-MOTION FOR HEMP-SPREADERS, &c.

SPECIFICATION forming part of Letters Patent No. 311,978, dated February 10, 1885.

Application filed July 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN GOOD, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Measuring Stop-Motions for Hemp Spreaders, Drawing-Frames, &c., of which the following is a specification.

My invention relates more particularly to stop-motions for hemp-spreaders, drawing-frames, and other machines for working fibrous materials, in which the driving-clutch is to be automatically thrown out of gear or relieved when any shaft of the machine—such, for example, as one of a pair of drawing-rolls—has completed a predetermined number of revolutions. When my stop-motion is applied to a hemp-spreader or drawing-frame, it will be geared with one of the drawing-rolls by which the hemp is drawn forward, and when said roll has made such predetermined number of revolutions as are found to suffice for filling a can the driving-clutch will be disengaged or relieved by the stop-motion and the machine thereby stopped.

The invention consists in novel combinations of parts and details of construction hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is is a partly-sectional view of my improved stop-motion as applied to one of the rolls of a hemp-spreader or drawing-frame, and Fig. 2 is an end elevation of the same.

A designates a portion of one of the side frames of the machine, and B a portion of a fluted metal roll, the shaft B′ of which is prolonged beyond the side frame, and constitutes the driving-shaft of the machine.

Secured fast on the driving-shaft B′ by a set-screw, *a*, or other suitable means is a disk or plate, C, which constitutes one half of a friction-clutch, and by the side thereof is a pulley, C′, loose upon said shaft B′, and forming the driving portion of the clutch. The pulley C′ is here shown as grooved at *a′*, and receives upon it a driving-belt, C*. The pulley C′ is constantly rotated, and when pressed forcibly against the disk C the pulley will transmit rotary motion to the part C and to the shaft B′.

In order to increase the frictional engagement of the clutch portions C C′, one of them—in this instance the part C—is faced with leather *, or other material calculated to increase friction. The clutch-pieces C C′ are kept in driving engagement by means of a spring pressing the piece C′ against the piece C, and they are relieved or disengaged by means of a clutch-lever, which is moved automatically by the stop-motion to draw back the piece C′ out of engagement with the piece C. As here shown, a spiral spring, D, is arranged within a sleeve, E, which is loose on the shaft, and is recessed to receive the spring. The sleeve E presses at one end against the hub of the pulley or clutch-piece C′, and at that end is grooved circumferentially to receive the forked end of a clutch-lever, F, which is fulcrumed at *b* to a bracket or standard, A*, secured to a portion, A′, of the frame of the machine.

Keyed or otherwise secured fast to the shaft B′ is an externally-screw-threaded collar, *c*, on which is fitted a nut, *d*, and a lock-nut or jam-nut, *d′*. The nut *d* is externally cylindric and enters a socket or recessed portion, d^2, in the open outer end of the sleeve E. The spring D bears at one end against the nut *d*, and by adjusting the nut *d* upon the threaded collar *c*, and then locking it by the jam-nut *d′*, the spring D may be compressed so as to force the pulley or clutch-piece C with any desired power. When the spring D is permitted to exert its force, the clutch-piece C and shaft B′ are driven by the clutch-piece C′, and the sleeve E, nut *d*, and collar *c* all rotate with the shaft.

To stop the rotation of the shaft B′, the clutch-lever F must be operated to force back the sleeve E against the power of the spring D.

In a case, A^2, supported on the frame portion A′, is journaled a short shaft, G, upon the outer end of which is a wheel or disk, G′. The shaft G is to be geared with the shaft B′ by any suitable system of gearing which will permit a large number of rotations of the shaft B′ to each turn of the shaft G. In this example of my invention I have represented a shaft, G^2, at right angles to the shafts B′ G.

Upon the end of the shaft B′ is a worm or screw, *e*, which gears into a worm-wheel, *e′*, on the shaft G^2, and upon the shaft G^2 is a

worm or screw, e^2, which gears into a worm-wheel, e^3, on the shaft G.

By mechanism similar to that described a very slow motion is transmitted to the shaft G and wheel G′.

H designates a rock-shaft mounted in bearings *f*, and capable of turning but incapable of longitudinal movement.

On the shaft H is a cam, *f′*, against which bears a roller or bowl, *b′*, on the lower end of the clutch-lever F, and by a slight turn of the rock-shaft H the cam *f′* will press the lower end of the clutch-lever to the left and its upper end to the right, thereby moving the sleeve E against the force of the spring D and relieving the clutch-piece C′ of the pressure of the spring. Upon the other end of the rock-shaft H is a disk or collar, *g*, notched at *g′*; and I designates a catch-lever which is fulcrumed at *h* and comprises a handle, *h′*, which is heavy enough to serve as a weight to hold the nose of the catch-lever I in engagement with or against the notched disk or collar *g g′*.

J designates an intermediate lever, fulcrumed at *i*, and having at the lower end a slot-and-pin connection *i* i′* with the catch-lever I. The rock-shaft H is weighted, so that it will be turned to throw off the clutch-lever F the instant the nose of the catch-lever I is withdrawn from the notched disk or collar *g g′*. As here shown, the weight applied to turn the shaft H is in the form of a handle or hand-lever, H′, fast on the shaft, and having a downwardly-projecting arm, *j*, which, by striking against the frame A′, forms a stop to limit the turning movement of the rock-shaft H.

On the disk or flange G′ are secured one or more projecting toes, *k*, four being shown. The said disk turns in the direction indicated by the arrows, Fig. 2, and when a toe or projection, *k*, comes against the intermediate lever, J, the latter is moved and caused to trip or pull back the nose of the catch-lever I out of the notch *g′* in the flange or collar *g*. The rock-shaft H being thus released, the weight of the handle H′ causes it to drop from the position shown by dotted lines in Fig. 2 into the position shown by full lines, and thereby the shaft H is turned sufficiently to cause the cam *f′* to throw off the clutch-lever F.

From the above description it will be readily understood that the relative speed of rotation of the shaft B′ and the shaft and flange or disk G G′ being known, the toes or projections *k* can be arranged to trip the intermediate lever, J, and withdraw the nose of the catch-lever from the notch *g′* after any predetermined number of rotations of the shaft B′ and roll B have been performed. The disk or flange G′ therefore constitutes a tripping-cam, and the lever J a trip-lever.

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

1. The combination, with a shaft to be rotated and a clutch for imparting motion thereto, of a spring acting upon the movable clutch portion to hold it in driving contact with its fellow, a clutch-lever for relieving or disengaging the clutch against the force of said spring, a rock-shaft weighted to turn automatically when released, and provided with a cam bearing against said clutch-lever, a catch for holding said rock-shaft against operation, to throw off the clutch-lever, and trip mechanism operated by the driven shaft, and adapted to release the said rock-shaft from the catch after a predetermined number of turns of the driven shaft, substantially as herein described.

2. The combination, with a shaft, B′, and clutch C C′, of the spring D, sleeve E, nut and collar *d c*, the clutch-lever F, devices for acting upon said lever to compress said spring and relieve the clutch, and a trip mechanism actuated by the shaft B′, and capable of operation after a predetermined number of revolutions of the shaft B′, to release the devices for acting on the clutch-lever F, substantially as herein described.

3. The combination, with the shaft B′, a clutch for driving the same, a spring acting on the clutch to render it operative, and a clutch-lever, F, for relieving the clutch, of the weighted rock-shaft H and its cam *f′*, the catch-lever I, for holding the rock-shaft and cam inoperative, and a tripping-cam for throwing off the said catch-lever, geared with the shaft B′, substantially as herein described.

4. The combination, with the shaft B′, a clutch for driving the same, a spring for acting on the clutch to render it operative, and a clutch-lever, F, for compressing said spring to render the clutch inoperative, of the weighted rock-shaft and cam H *f′*, provided with a locking-notch, *g′*, the catch-lever I, the tripping-lever J, for withdrawing said catch-lever to release said rock-shaft H, and the tripping-cam G′, geared with the shaft B′, all substantially as herein described.

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Witnesses:
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