(No Model.)

C. DANCEL.

MECHANISM FOR REVERSING MOTION.

No. 260,285. Patented June 27, 1882.

Fig. 1.

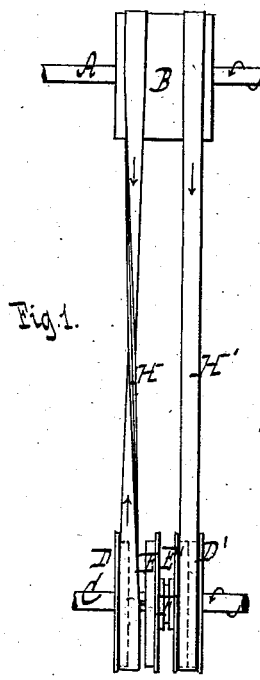
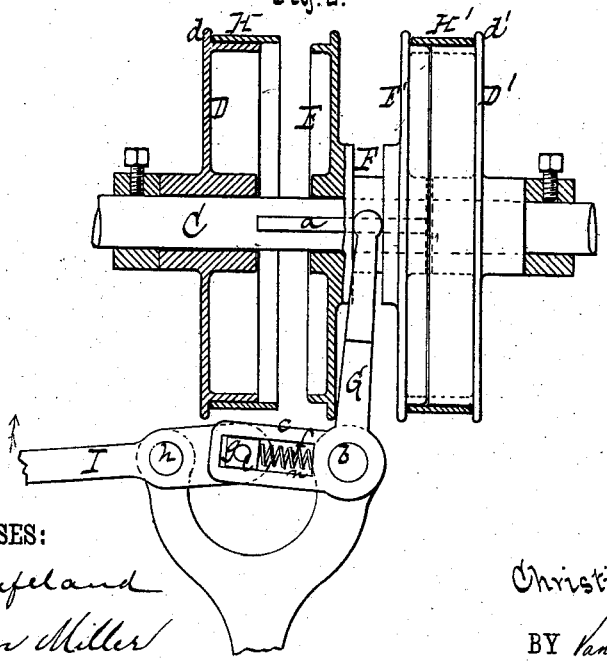


Fig. 2.



WITNESSES:

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MECHANISM FOR REVERSING MOTION.

SPECIFICATION forming part of Letters Patent No. 260,285, dated June 27, 1882.

Application filed March 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN DANCEL, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Mechanism for Reversing Motion, of which the following is a specification.

This invention consists in the combination of the following devices: a pulley mounted on the driving-shaft, two sectional pulleys mounted on the driven shaft, each of said sectional pulleys consisting of a section which revolves loosely on the driven shaft and of a section which is feathered to said driven shaft, a hub connecting the feathered pulley-sections, a lever engaging with said hub, a cross-belt extending from the driving-pulley over the loose section of one pulley, and an open belt extending from said driving-pulley over the loose section of the other pulley, said belts being of such a width that their edges extend beyond the inner edges of the loose pulley-sections, so that when one of the feathered pulley-sections is moved up against the corresponding loose section that portion of the belt which projects beyond the inner edge of said loose section acts upon the feathered section and the driven shaft is caused to revolve in one direction, and by moving the other feathered section up against the corresponding loose section the motion of the driven shaft is reversed. With the shipping-lever is combined a sort of a toggle mechanism for locking the feathered pulley-sections in the required position.

In the accompanying drawings, Figure 1 represents a front view of my mechanism. Fig. 2 is a longitudinal section of the same on a larger scale than the previous figure.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the driving-shaft, on which is mounted the pulley B.

C is the driven shaft, which is to turn alternately in one and then in the opposite direction. On this driven shaft are mounted two pulleys, each of which consists of a section D or D′ and of a section E or E′, the sections D D′ being mounted loosely on the shaft C, while the sections E E′ are connected to the same by a feather-key, *a*, so that they can slide on said shaft toward and from the loose sections, while the shaft is compelled to revolve with the feathered sections. These feathered sections are connected together by a hub, F, and with this hub engages a shipping-lever, G, so that by the action of this lever the feathered sections can be moved on the shaft C. From the pulley B extends a cross-belt, H, round the loose section D, and an open belt, H′, round the loose section D′. The outer edge of each of these belts bears against a flange, *d* or *d′*, on the corresponding loose section, while the inner edges of said belts project beyond the inner edges of the corresponding loose sections to a distance equal to the face of the corresponding feathered section, as shown in Fig. 2.

If the feathered section E′ is moved up against the corresponding loose section D′, the belt H′ bears upon the face of said loose section and the shaft C revolves in one direction—say that indicated by the arrows in Fig. 1. If, now, the feathered section E is moved up against the loose section D, the feathered section E′ being at the same time removed from the loose section D′, the cross-belt H is brought to act on the feathered section E and the motion of the shaft C is reversed.

The shipping-lever G is made in the form of a bell-crank lever, which turns on a pivot, *b*, and the arm *c* of which is provided with a slot, *n*, containing a slide, *e*, which is pressed outward away from the fulcrum *b* by a spring, *f*. From the slide *e* projects a pin, *g*, which engages with a lever, I, that has its fulcrum on a pivot, *h*. When the lever I is brought into the position shown in Fig. 2 the feathered section E′ is moved up against the loose section D′, and the shipping-lever G becomes locked, since the pin *g* is thrown above the line drawn through the center of the pivots *b h*, and consequently some power is required to disturb the position of the shipping-lever. If the lever I is moved in the direction of the arrow marked near it in Fig. 2, the spring *f* is compressed, and as the pin *g* passes beneath the line drawn through the pivots *b h* the shipping-lever G is shipped and the feathered section E is moved up against the loose section D, the motion of the shaft C is reversed, and the shipping-lever is again locked.

This mechanism is particularly adapted to metal-planing machines in which the bed reciprocates and the lever I is moved by the di-

rect action of said bed; but my mechanism can also be used in many other machines where a self-acting reversing-gear is required.

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

1. The combination, substantially as hereinbefore described, of the driving-pulley, the loose pulley-sections, and the feathered pulley-sections mounted on the driven shaft, the cross-belt H and the open belt H′, extending round the loose pulley-sections and projecting beyond their inner edges, and the shipping-lever acting on the feathered pulley-sections.

2. The combination, substantially as hereinbefore described, of the driving-pulley, the loose pulley-sections, and the feathered pulley-sections mounted on the driven shaft, the cross-belt H and the open belt H′, extending round the loose pulley-sections and projecting beyond their inner edges, the shipping-lever acting on the feathered pulley-sections, and an automatic locking mechanism.

3. The combination, substantially as hereinbefore described, of the shipping-lever mounted on a pivot, *b*, the slide *e*, fitted to the arm *c* of said shipping-lever, the spring *f*, acting on the slide, the pin *g*, projecting from said slide, and the lever I, mounted on the pivot *h* and engaging with the pin *g*.

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

CHRISTIAN DANCEL. [L. S.]

Witnesses:

W. HAUFF,

CHAS. WAHLERS.