G. SOGER.

Counter-Shaft Pulley.

No. 196,772. Patented Nov. 6, 1877.

Fig 1

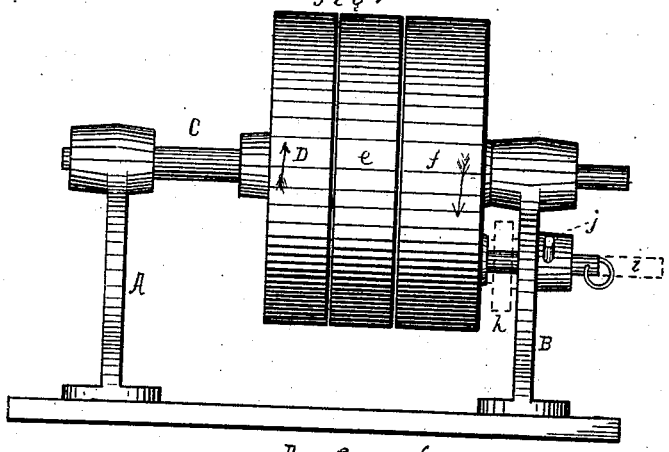


Fig 2

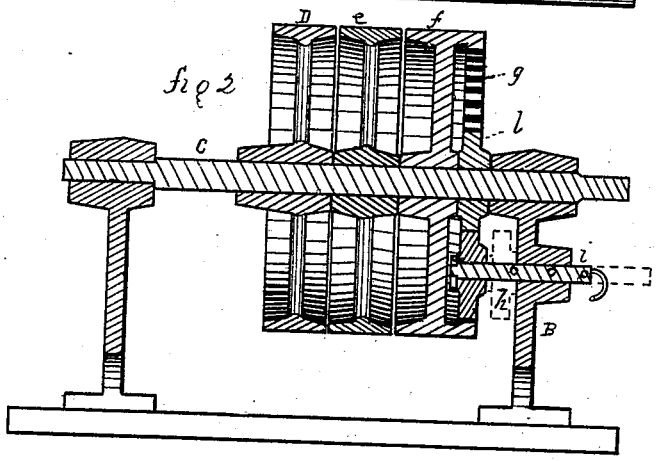
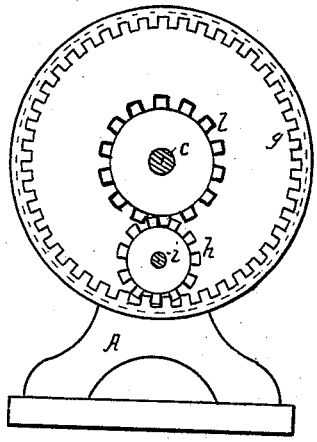


Fig 3



Witnesses

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UNITED STATES PATENT OFFICE.

GEORG SOGER, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN COUNTER-SHAFT PULLEYS.

Specification forming part of Letters Patent No. **196,772**, dated November 6, 1877; application filed August 31, 1877.

To all whom it may concern:

Be it known that I, GEORG SOGER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Counter-Shaft Pulleys; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in counter-shaft pulleys; and consists in an arrangement of gear in connection with one of the pulleys of the counter-shaft, whereby a reverse motion is obtained—that is to say, two motions by pulleys arranged on the same counter-shaft, as will be hereinafter more fully explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a side elevation of my improvement. Fig. 2 is a vertical and longitudinal section of the same. Fig. 3 is an end view section at line *y* of Fig. 2.

In the drawings, A B represent the bearings, supports, or hangers for the counter-shaft C, upon which is permanently attached a pulley, D, and a gear-wheel, *l*. *e* represents a loose pulley, and *f* a loose pulley furnished with cogs *g* on its inner face and at its outer edge. The bearing, support, or hanger B is furnished with a bearing for an adjustable shaft, *i*, on the inner edge of which is a cog-wheel, *h*, which meshes into the cogs *g* of the pulley *f*, and also meshes into the wheel *l*, permanently secured to the counter-shaft C. The wheel *h* is held in and out of gear by means of a pin, *j*, which passes through openings in the shaft *i*.

The operation of my improvement is as follows: When a reversed motion is desired—that is to say, when it is desired to have the pulley D travel in one direction and the pulley *f* in an opposite direction, as indicated by the arrows in Fig. 1—the wheel *k* is placed in position so as to mesh with the wheel *l* and cogs *g* of the pulley *f*, as shown in the accompanying drawings, and secured in said position through the medium of the key or pin *j*. When such is the case the belt, on either the pulley *d* or *f*, may be shifted onto the loose pulley *e*. The cogs *g* of the pulley may be arranged in a series of detachable sections, so that in case of the breaking of one or more teeth, a section may be removed and a new section supplied.

Having thus described my improvement, what I claim is—

The pulley *f*, furnished with cogs *g*, in combination with the wheels *l* and *h* and pulleys *e* and D, substantially as herein described, and for the purpose set forth.

GEORG SOGER.

Witnesses:
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