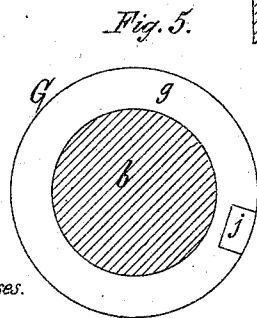
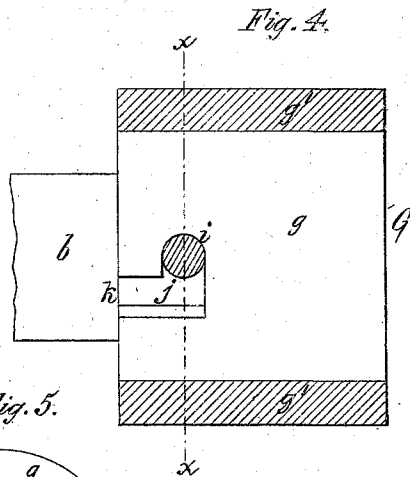
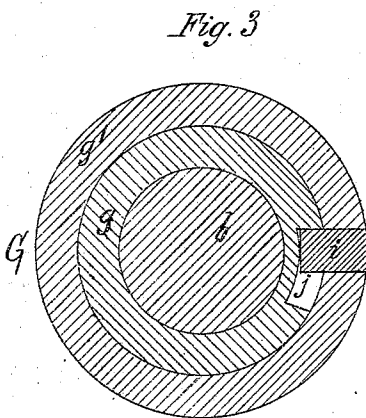
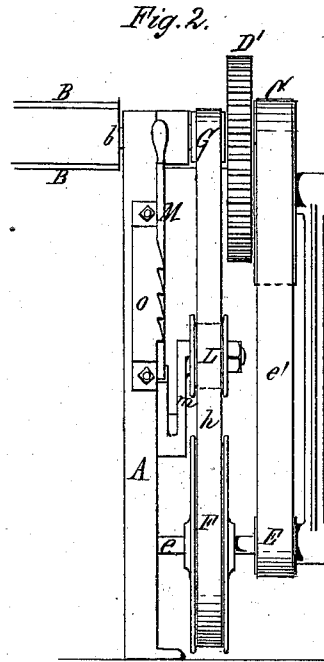
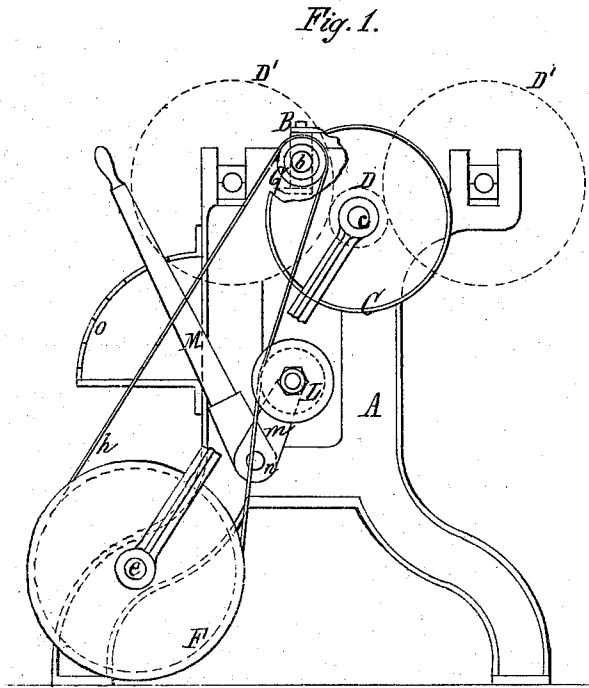


A. H. FRANK & G. SPIRE.
Planing-Machines.

No. 143,232.

Patented September 30, 1873.



Edward Wilhelm
John J. Donnan
Witnesses.

Andrew H. Frank
Geo. Spire
Inventors
by Jay Hyatt

UNITED STATES PATENT OFFICE

ANDREW H. FRANK AND GEORGE SPIRE, OF BUFFALO, NEW YORK.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. **143,232**, dated September 30, 1873; application filed June 14, 1873.

To all whom it may concern:

Be it known that we, ANDREW H. FRANK and GEORGE SPIRE, both of the city of Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Wood-Planing Machines, of which the following is a specification:

Our invention relates to an improved means for changing the speed or number of revolutions of the feed-rollers of a planing-machine; and it consists, principally, of a pulley composed of two or more concentric cylinders capable of being readily secured together or separated, so as to increase or reduce the size of the pulley, as may be required.

In the accompanying drawing, Figure 1 is a side elevation of a planing-machine provided with our improvements. Fig. 2 is a fragmentary front elevation thereof. Fig. 3 is an enlarged sectional view of our improved pulley in line *xx*, Fig. 4. Fig. 4 is a front elevation of the pulley with the outer cylindrical portion in section. Fig. 5 shows the pulley with the outer portion removed.

Like letters of reference designate like parts in each of the figures.

A represents one of the side frames of a wood-planing machine; *b*, the cutter-shaft; B, the cutters, driven in the ordinary manner; C, a driving-pulley mounted on shaft *c*; D D', gear-wheels for transmitting motion to the feed-rolls; and *e*, a counter-shaft, carrying the pulleys E F. The pulleys C and E are connected by an endless belt, *e'*. All of these parts are constructed and arranged in a common and well-known manner. G is the pulley, mounted on the outer end of the cutter-shaft *b*, for transmitting motion to the pulley F by means of an endless belt, *h*. It is composed of an inner cylinder or pulley proper, *g*, keyed or otherwise secured to the shaft *b*, and one or more concentric cylinders, *g'*, fitting upon the pulley proper *g*, and one upon the other, when more than one are used, only one cylinder, *g'*, being shown in the drawing. The cylinder *g'* is secured to the pulley proper *g* by a fastening-pin, *i*, secured in the cylinder *g'*, and projecting inwardly into a knee-shaped recess or cavity, *j*, formed in the face of the pulley proper *g*, and extending to the side thereof, as shown at *k*.

In order to connect the parts *g* and *g'* to-

gether, the cylinder *g'* is so placed against the pulley *g* that the pin *i* coincides with the outer end *k* of the cavity *j*, when, by moving the part *g'* laterally until the fastening-pin strikes the inner end of the cavity *j*, and partly turning it in the direction in which the pulley revolves, the pin *i* is brought into the position shown in Fig. 4, whereby the parts are firmly locked together.

When two cylinders, *g'*, are employed, the inner one is provided with a similar cavity, *j*, for the reception of the fastening-pin of the outer cylinder.

Any other suitable device for connecting the cylinders *g'* with the pulley proper *g*, such as a key or lateral set-screw, may, however, be employed, if preferred.

L represents a tightening-roller, pressing against the endless belt *h*, and mounted on the short arm *m* of the lever M, turning on a pivot, *n*. The outer end of the lever M is held in its respective position by the notches of an arc or segment, *o*, secured to the side frame A.

It is evident from the foregoing that the size of the pulley G is readily reduced by removing the cylinder *g'*, and increased by re-applying the same, thereby diminishing or increasing the speed of the feed-rollers, as the nature of the work may require.

When the cylinder *g'* is removed from the pulley proper *g*, the belt *h* becomes slack, and is tightened again by adjusting the roller L and lever M in an obvious manner.

Our improved pulley meets all the requirements for which ordinarily step-pulleys are used, and is less expensive in its construction, while it requires no more space laterally than an ordinary simple pulley.

We claim as our invention—

The pulley G, composed of the pulley proper *g* and one or more concentric cylinders, *g'*, capable of being readily secured thereto and detached therefrom by means of the fastening-pin *i* and cavity *j*, substantially as and for the purpose hereinbefore set forth.

ANDREW H. FRANK.
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Witnesses:

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