

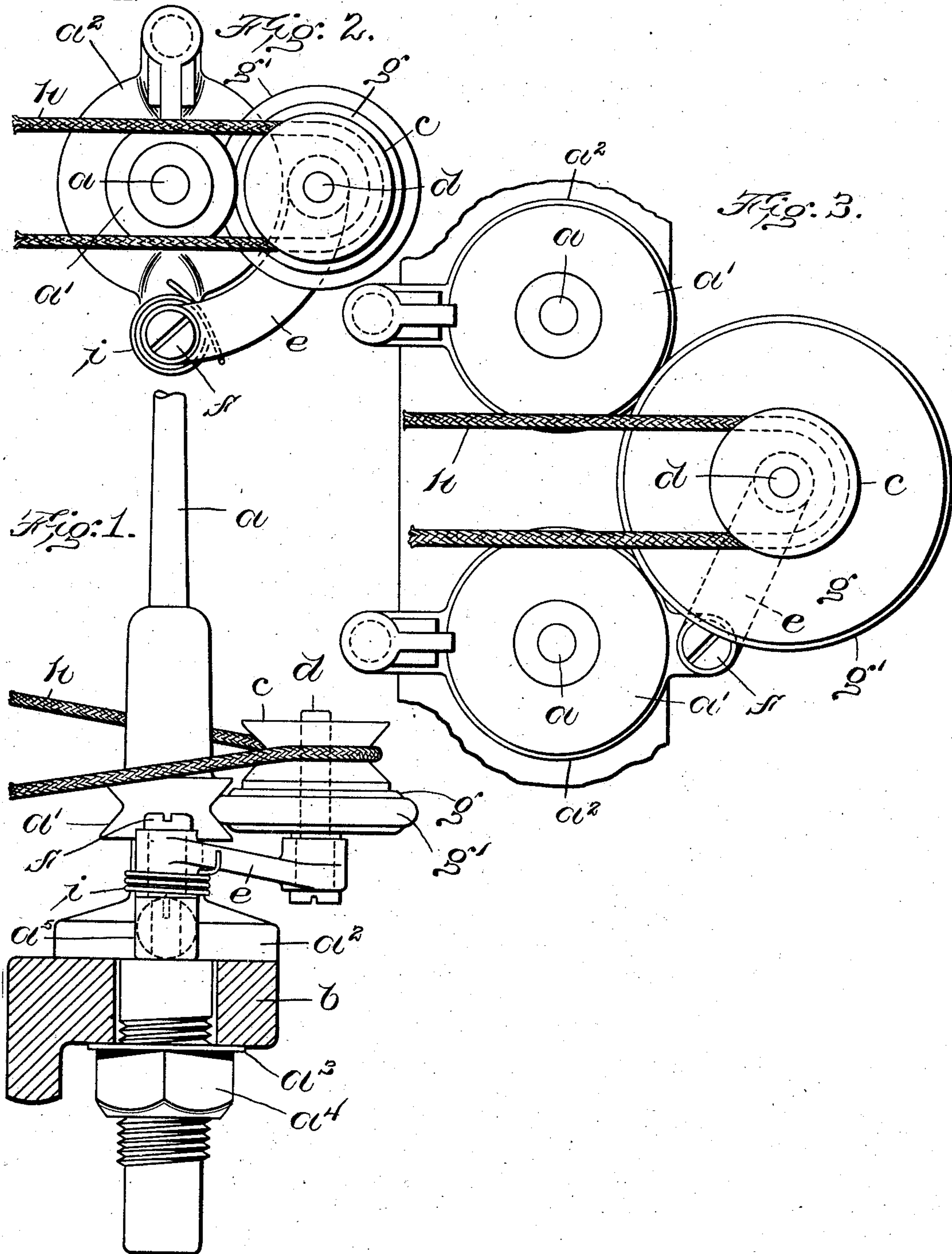
No. 768,556.

PATENTED AUG. 23, 1904.

V. BÉLANGER.
SPINDLE.

APPLICATION FILED MAY 23, 1903.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

VICTOR BÉLANGER, OF SEAVIEW, MASSACHUSETTS.

SPINDLE.

SPECIFICATION forming part of Letters Patent No. 768,556, dated August 23, 1904.

Application filed May 23, 1903. Serial No. 158,473. (No model.)

To all whom it may concern:

Be it known that I, VICTOR BÉLANGER, of Seaview, in the town of Marshfield, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Spindles, of which the following is a specification.

This invention has relation to spinning machinery, and more particularly to spindles and spindle-driving mechanism, having for its object certain improvements by means of which the spindle may be driven at a high rate of speed without increasing the speed of rotation of the usual driving-drum commonly employed in such mechanism.

On the drawings, Figure 1 represents one embodiment of the invention. Fig. 2 represents a plan view of the same. Fig. 3 represents in plan view another embodiment of the invention in which a single band or tape is employed for driving a plurality of spindles.

Referring to the drawings, the spindle-blade *a* is provided with a grooved member *a'* substantially similar to the whirl hitherto used. The spindle base or bearing *a²* is secured to the spindle-rail *b* by a washer *a³* and a nut *a⁴*, screwed on the threaded portion of the spindle base or bearing. In lieu of passing the tape, cord, or band, which is driven by the drum, around the whirl on the spindle it is passed around a grooved pulley *c*, which is shown as journaled on an upright stud-shaft *d*, arranged in parallelism with the axis of the spindle-blade *a*. The shaft *d* is mounted upon the end of a swinging arm *e*, which is in turn pivoted to an upright stud *f*, rising from an extension *a⁵* on the spindle-base *a²*. These parts are shown somewhat conventionally; but it will be understood that provision is made for lubricating them. The stud *f* is parallel to the stud-shaft *d* and to the blade *a*.

Secured to the pulley *c* there is a relatively large wheel *g*, which is shown as shod with leather, rubber, rawhide, or other suitable frictional material, as at *g'*. The periphery of the shoe is complementary to the groove in the driven member *a'* on the spindle *a*. The arm or lever *e*, as shown in Fig. 2, is curved and is of such length that when the member *g* is in contact with the member *a'* a line pass-

ing through the axes of the shaft *d* and the spindle *a* will be substantially parallel to a line at right angles to the drum, (not shown,) but the location of which is indicated by the driving band or cord *h*.

It is to be observed that the pulley *c* and the driving member *g* are located in front of the spindle, so that the tension of the band *h* is such as to draw the member *g'* into firm frictional contact with the member *a'* on the spindle-blade *a*. To assist, however, in holding the two members of the couple of rotation—to wit, the members *g* and *a'*—in contact, there is a spring *i*, one end of which bears against the arm *e* and the other end of which is inserted in the aperture in the spindle-base, as shown in Fig. 2.

In virtue of the construction as thus described the spindle is driven at an accelerated speed much greater than if the band *h* were passed around the usual whirl on the spindle.

In Fig. 3 a construction is shown in which a single driving member is utilized for effecting the rotation of two separate spindles. In this instance the arm *e* is pivoted to one spindle-base, so that the member *g*, carried thereby, is adapted to make contact with the two driven members *a'* on the two spindle-blades *a a*. The spindle to which the arm is not pivoted is adjustable toward and from the other, as usual in spinning-frames, so that it is possible to insure a firm frictional contact of the member *g* with both the driven members *a' a'* of the two spindles.

I do not herein claim specifically the construction shown in Fig. 3, in which a single band is employed for effecting the actuation of two spindles.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. The combination of a spindle, an arm pivoted on an axis parallel to said spindle, a belt-driven pulley mounted on the free end of said arm, and a couple of rotation comprising a relatively large wheel connected to the belt-driven pulley and a relatively small wheel

connected to the spindle, said wheels being in frictional contact, whereby the speed of the belt-driven pulley is multiplied in transmission to the spindle.

5 2. The combination of a spindle base or bearing, a blade journaled therein and having a rotary driven member fast thereon, an arm pivoted to said base or bearing on an axis parallel to the spindle, a belt-driven rotary
10 member mounted on the free end of said arm, and a friction member fast to said belt-driven member and in operative contact with the driven member on the spindle-blade.

15 3. The combination of a spindle, an arm pivoted on an axis parallel to said spindle, a belt-driven pulley mounted on the free end of

said arm, a couple of rotation comprising a relatively large wheel connected to the belt-driven pulley and a relatively small wheel connected to the spindle, said wheels being in
20 frictional contact, whereby the speed of the belt-driven pulley is multiplied in transmission to the spindle, and a spring bearing against said arm for maintaining the members of said couple of rotation in frictional
25 contact.

In testimony whereof I have affixed my signature in presence of two witnesses.

VICTOR BÉLANGIER.

Witnesses:

MARCUS B. MAY,
C. C. STECHER.