R. BLAKE & S. A. DAVIS.

Device for Engaging Pulleys to Wheels.

No. 208,884. Patented Oct. 15, 1878.

Fig. 1.

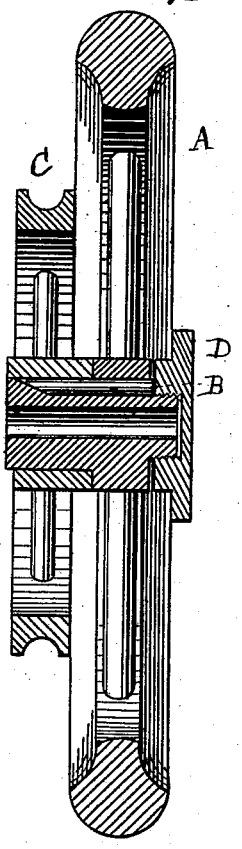
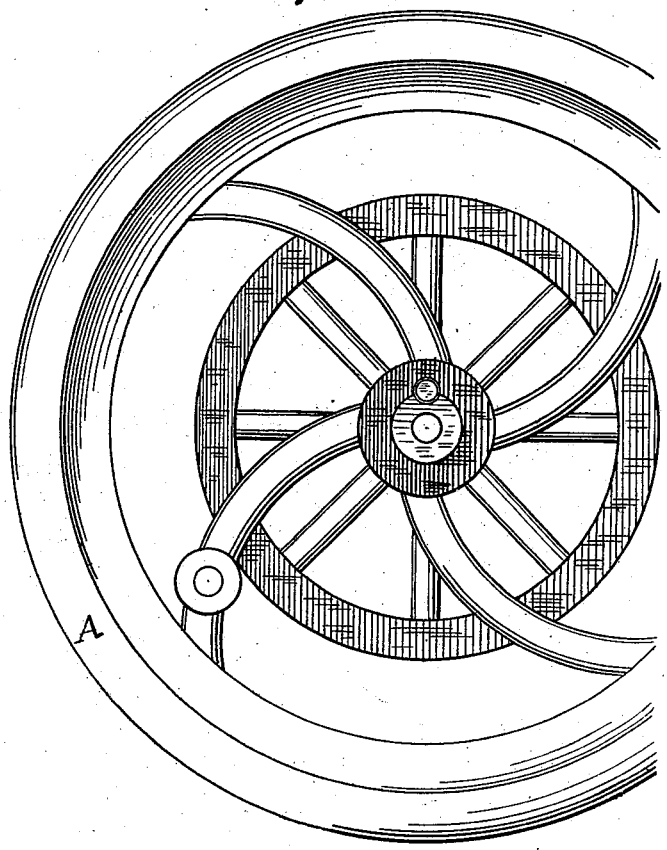


Fig. 2.



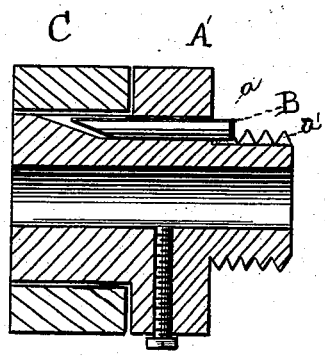


Fig. 3.

WITNESSES

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ROBERT BLAKE AND STEPHEN A. DAVIS, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN DEVICES FOR ENGAGING PULLEYS TO WHEELS.

Specification forming part of Letters Patent No. **208,884**, dated October 15, 1878; application filed June 22, 1878.

To all whom it may concern:

Be it known that we, ROBERT BLAKE and STEPHEN A. DAVIS, both of the city of Newark, Essex County, in the State of New Jersey, have invented new and useful Improvements in Wheels or Pulleys adapted to run fixed or loose at the will of the operator; and we do hereby declare that the following specification, taken in connection with the drawings furnished, will enable others skilled in the art to make and practice the same.

This invention relates to wheels connected together in such manner that one of them may at will operate either as a fixed pulley or a loose pulley.

The nature of said invention consists in the combination, with said wheels, of a locking wedge-bar, which works in a longitudinal groove of the hub of one of the wheels, and is adapted to bind directly against the inside of the hub of the other wheel.

It also consists in employing a suitable fastening device for holding said wedge-bar in locking position or releasing it at will.

Our object is to provide a cheap and convenient means for winding shuttle-bobbins for sewing-machines without running the stitching mechanism of the latter.

We are aware of the existence of many contrivances to accomplish this result, many of which are defective for the following reason, for instance: When the band-wheel is fixed to the balance-wheel and is disengaged from the shaft, the weight of the needle-bar is such as to allow it to fall by its own gravity, and thus allow the needle to penetrate the material, when, in most instances, it is desirable for it to be suspended above. The weight of the balance-wheel is such as to require more power to drive it than the small band-wheel. Again, the mechanism usually employed in connection with such balance-wheels for connecting and disconnecting with the shaft is complex in construction and expensive to make.

In cases where two band-wheels are arranged side by side, in connection with the balance-wheel of sewing-machines, it becomes necessary for the operator to move the belt while the machine is in motion from the groove of one wheel to the groove of the other, which is accomplished by the fingers, which is not only difficult but liable to injure them.

Again, the second band-pulley requires additional space, consequently a greater length of shaft, which is undesirable.

By our invention we have accomplished the desired result by arranging the band-pulley upon the hub of the balance-wheel in such a manner as to require no more space than the hub of the balance-wheel requires alone, which balance-wheel is provided with a pin or wedge operating through or within its hub, which pin is operated in a manner to secure or disengage the band-wheel in its connection with the hub of said balance-wheel.

Referring to the drawing, Figure 1 represents a vertical section of the device embodying my invention. Fig. 2 represents a front elevation of the same with the cap removed, and Fig. 3 represents a detail sectional view.

A designates a balance-wheel, having a longitudinal groove, *a*, in its hub A′, which groove has its bottom upwardly inclined at its inner end, so as to correspond with the similarly-inclined inner end of a wedge-bar, B, which works in said groove. On said hub is a band wheel or pulley, C, which surrounds said inclines. The other end of said hub is screw-threaded at *a′* to receive a screw-threaded cap, D, that operates to force said wedge-bar farther into its groove when it is screwed home. The wedge action of said inclines then operates to clamp said pulley C to said hub A′, and thus cause the two to turn together; but when said cap is loosened the said pulley will revolve independently.

Having thus set forth our invention, what we claim as new, and desire to secure by Letters Patent of the United States of America, is—

In combination with a wedge-bar, screw-cap, and pulley, a wheel-hub having a longitudinal groove terminating in an incline, said incline being solid with the hub, and said parts being arranged so that when the cap is screwed home against the wedge-bar the incline forces the bar against the pulley, locking the same, substantially as set forth.

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STEPHEN A. DAVIS.

Witnesses:
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