No. 837,261. PATENTED NOV. 27, 1906.

G. S. COX.

EXPANSIBLE PULLEY.

APPLICATION FILED NOV. 28, 1905.

FIG. 1.

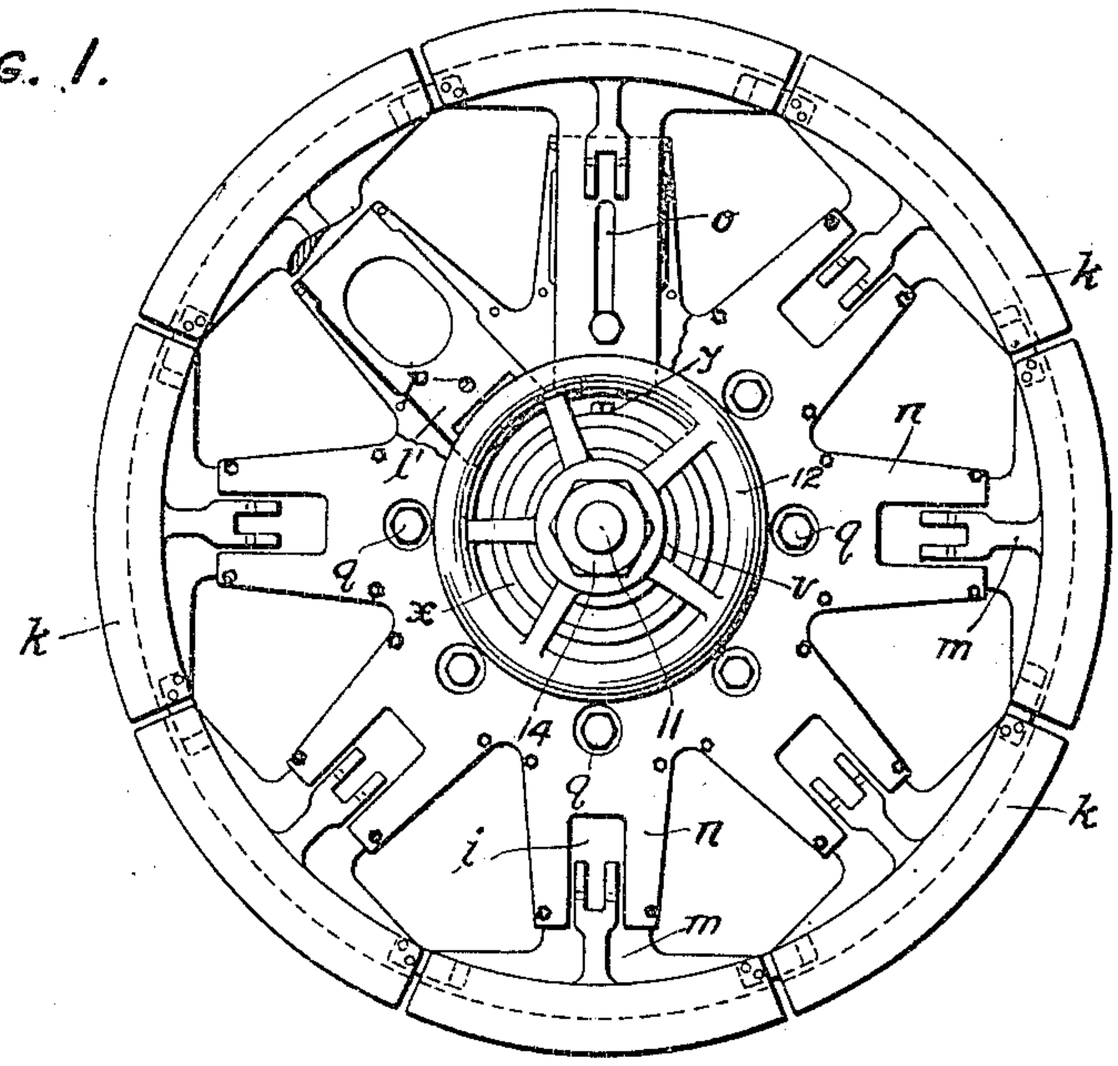
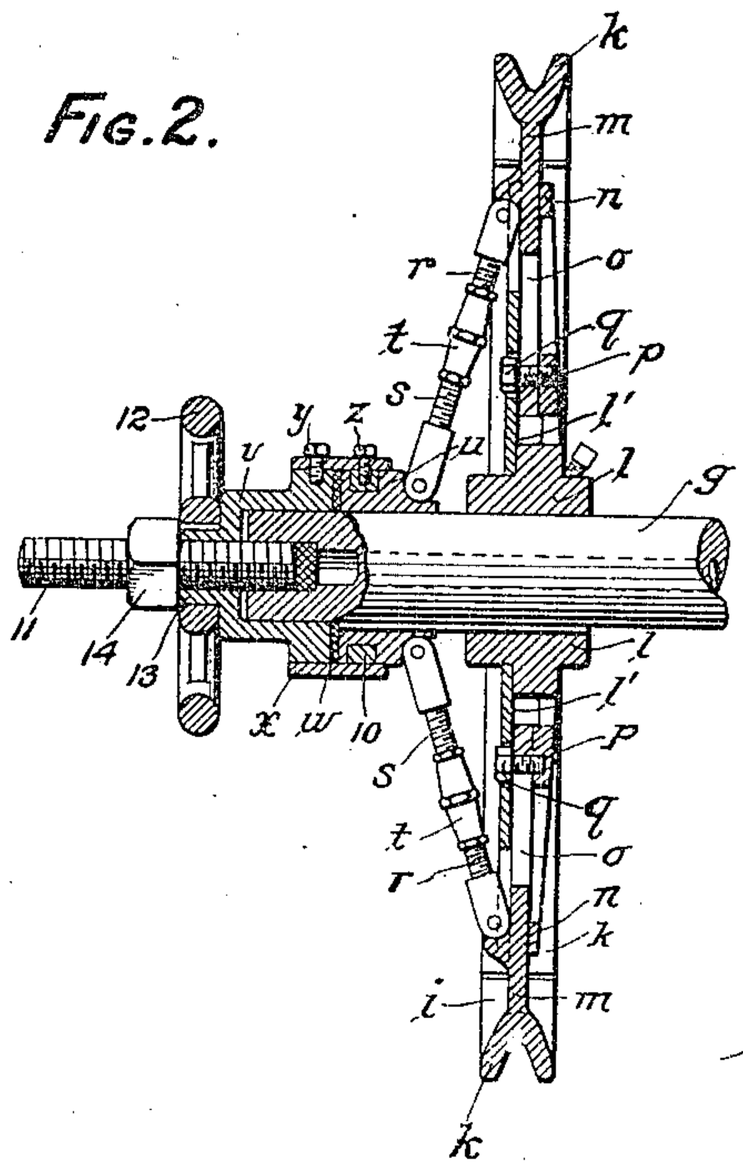


FIG. 2.



WITNESSES:-

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GEORGE S. COX, OF FITZWATERTOWN, PENNSYLVANIA, ASSIGNOR TO HIMSELF, AND WALTER S. COX, OF PHILADELPHIA, PENNSYLVANIA, TRADING AS GEORGE S. COX AND BROTHER.

EXPANSIBLE PULLEY.

No. 837,261. Specification of Letters Patent. Patented Nov. 27, 1906.

Original application filed June 21, 1905, Serial No. 266,228. Divided and this application filed November 28, 1905. Serial No. 289,407.

To all whom it may concern:

Be it known that I, GEORGE S. COX, a citizen of the United States, residing at Fitzwatertown, county of Montgomery, and State of Pennsylvania, have invented a new and useful Improvement in Expansible Pulleys, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

The object of the invention is to provide a construction whereby the diameter of a pulley may be expanded or contracted.

This application is a division of an application heretofore filed by me June 21, 1905, Serial No. 266,228, for patent for a drying or finishing machine for textile fabrics.

In the drawings, Figure 1 is a transverse sectional view of a pulley, its shaft, and the means for expanding and contracting it. Fig. 2 is a side elevation of one-half the pulley.

g is a shaft on which the expansible and contractible pulley *i* is keyed. The pulley *i* is constructed as follows: Extending radially inward from the sectional rim *k* are arms *m*, slidable in guides in arms *n*, projecting radially outward from the hub *l*. The rim-arms *m* are provided with radial slots *o*. *l'* represents plates secured to the hub *l* and fitting over the rim-arms *m*. *p* represents tap-bolts extending through the slots *o* and engaging bolt-holes in the hub-arms *n*. *q* represents nuts on the ends of bolts *p*. By tightening the nuts they are caused to bind firmly against the rim-arms *m*, thereby securing the rim-arms *m* and hub-arms *n* together in their adjusted positions. By loosening the nuts the rim-arms, with their rim-sections, may be moved radially inwardly from the expanded position shown, thereby contracting the pulley.

The rim-sections and rim-arms may be moved radially by hand; but to secure nice adjustments I prefer to employ the following mechanism: *u* is a sleeve keyed on shaft *g*. Pivoted at one end to the rim-arms *m* and at the other end to the sleeve *u* are links, each composed of the sections *r s*, screw-threaded at their inner ends and connected together by means of a threaded sleeve *t*, thereby enabling the length of the link to be varied. Loose on the shaft *g* is a cap *v*, the sleeved portion of which is separated from the sleeve *u* by a washer *w*. *x* is a collar overlapping and encircling both sleeve *u* and cap *v*. *y* is a bolt by means of which collar *w* is secured to cap *v*. 10 is a block or ring extending into an annular groove in sleeve *u*. *z* is a bolt by means of which collar *w* is secured to ring 10. 11 is a threaded shaft secured in the end of shaft *g* on the line of the latter's axis. 12 is a hand-wheel keyed on the neck 13 of cap *v*.

By turning the hand-wheel 12 the cap *v* is rotated and at the same time fed forwardly or backwardly on the threaded shaft 11 and shaft *g*. This necessarily imparts a corresponding advancing or receding motion to the sleeve *u*, but without turning the same, ring 10 merely turning in its groove. This movement of sleeve *u* through links *r s t* moves rim-sections outwardly or inwardly, thereby expanding or contracting the pulley *i*. Prior to this operation the nuts *q* of the tap-bolts are of course loosened and subsequently tightened to hold the rim-sections and rim-arms in their adjusted positions. In order to hold the foregoing parts stationary relatively to each other during the operation of the machine, a nut 14 on the threaded shaft 13 is tightened against the hand-wheel 12.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In an expansible pulley, in combination, a shaft on which the pulley is mounted, the pulley-hub, radially-movable rim-sections, a threaded shaft secured to the pulley-shaft, a cap on the threaded shaft, means to turn the cap relatively to the threaded shaft, thereby causing the cap to move longitudinally of the threaded shaft and connections between the cap and the rim-sections.

2. In an expansible pulley, in combination, a shaft on which the pulley is mounted, the pulley-hub, radially-movable rim-sections, a sleeve on the shaft, links connecting the sleeve and rim-sections, a threaded shaft secured to the pulley-shaft, a cap on the threaded shaft, means to turn the cap relatively to the threaded shaft, causing the cap to move longitudinally of the threaded shaft, and connections between the cap and the sleeve.

3. In an expansible pulley, in combination, a shaft in which the pulley is mounted, the pulley-hub, radially-movable rim-sections, a grooved sleeve keyed on the shaft, links connecting the sleeve and rim-sections, a cap on the shaft, a block in the groove, a collar connected to the cap and block, a threaded shaft secured to the pulley-shaft and engaged by the cap and means to turn the cap relatively to the threaded shaft, thereby causing the cap to move longitudinally of the shaft and threaded shaft and imparting a corresponding longitudinal movement to the sleeve without rotating the same.

4. In an expansible pulley, in combination, a hub, arms radiating therefrom having guides, a rim divided into sections, slotted arms radiating inwardly therefrom and slidable on the guides, a bolt extending through the slot of a rim-arm and engaging the corresponding hub-arm, a nut on the bolt adapted to tighten against the rim-arm, a shaft on which the hub is keyed, a sleeve provided with a circumferential groove and also keyed on said shaft, adjustable links connecting said sleeve and rim-sections, a cap on the shaft, a block in the groove of the sleeve, a collar surrounding said sleeve and cap and connected to said cap and block, a threaded neck on the cap, a threaded shaft on the line of the axis of the pulley-shaft and engaging the threaded neck of the cap, a wheel secured to the cap-neck, and a nut on the threaded shaft engaging said wheel.

In testimony of which invention I have hereunto set my hand, at Philadelphia, on this 20th day of November, 1905.

GEORGE S. COX.

Witnesses:
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THORNLEY B. WOOD.