(No Model.)

B. J. RILEY.

EXPANSION PULLEY.

No. 370,087. Patented Sept. 20, 1887.

Fig. 1.

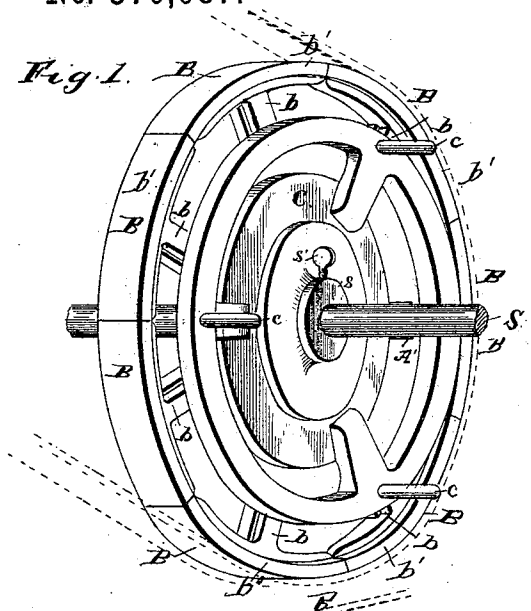
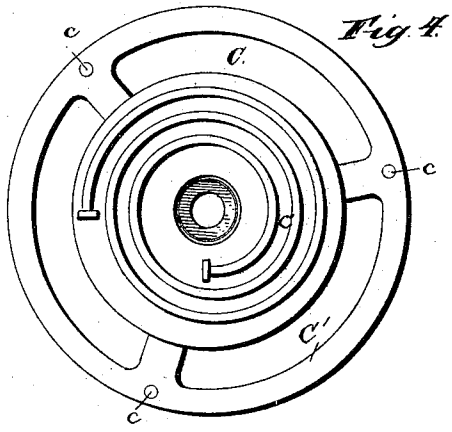


Fig. 4.



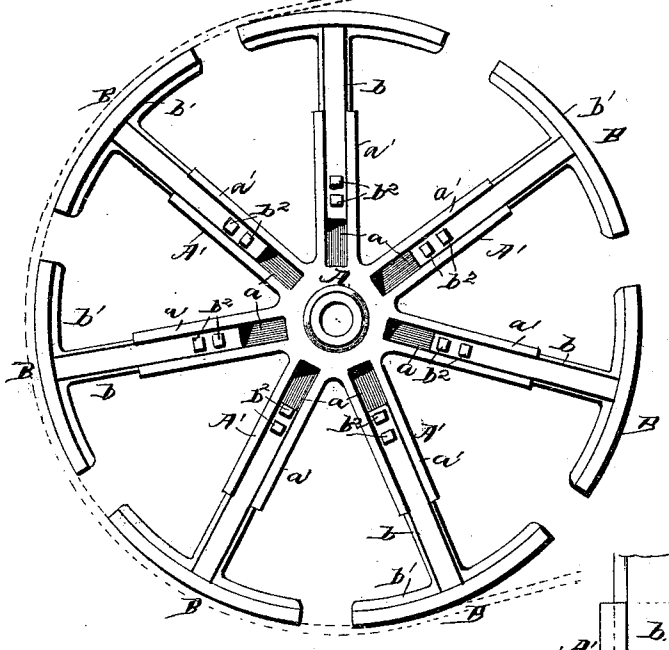


Fig. 2.

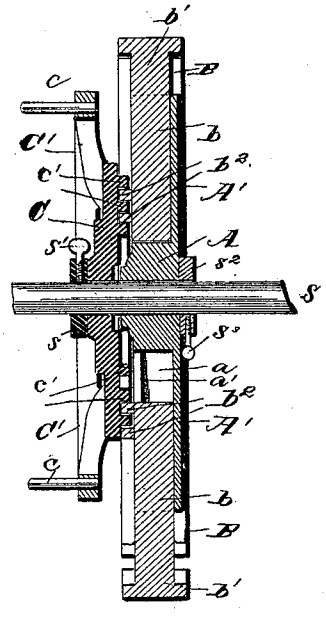


Fig. 3.

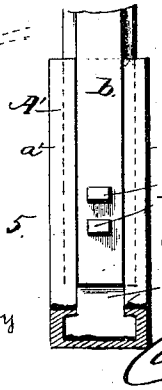


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

BERNARD J. RILEY, OF NORTH WALPOLE, NEW HAMPSHIRE.

EXPANSION-PULLEY.

SPECIFICATION forming part of Letters Patent No. 370,087, dated September 20, 1887.

Application filed June 24, 1887. Serial No. 242,410. (No model.)

To all whom it may concern:

Be it known that I, BERNARD J. RILEY, a citizen of the United States, residing at North Walpole, in the county of Cheshire and State of New Hampshire, have invented new and useful Improvements in Expansion-Pulleys, of which the following is a specification.

My invention relates to improvements in expansion-pulleys; and it consists in the construction and arrangement of the parts of the same, which will be more fully hereinafter described, and pointed out in the claims.

The object of my invention is to provide a pulley which is adapted to be expanded and by means of which the speed may be increased or decreased, as may be desired, by adjusting the said pulley and increasing its diametric cross-section. I attain this object by the device illustrated in the accompanying drawings, wherein like letters of reference indicate similar parts of the several views, and in which—

Figure 1 is a perspective view of my improved expansion-pulley, shown as adjusted to smallest diametric cross-section. Fig. 2 is a side elevation of my improved pulley, shown expanded. Fig. 3 is a vertical cross-sectional view of my improvement. Fig. 4 is a front elevation of the inner face of the adjusting-disk. Fig. 5 is an enlarged elevation of a portion of one of the adjusting spoke-connections.

A indicates the hub of the wheel, which is of any preferred form of construction, and is formed with a series of radial arms, A′, constructed with slots *a* and with overlying shoulders *a′*. Engaging with the said arms A′ are a series of sections, B, which consist of the arms *b*, provided with sectors *b′*, said arms being received by and moving in the slots formed in the radial arms A′. These rims *b′* are formed with such a degree of curvature that when they are united they form a solid periphery. At the lower portion of the arms *b* two lugs, b^2, are formed and arranged in the same position on each arm. These lugs b^2 project outwardly from the said arms *b* and beyond the shoulders formed with the radial arms A′. When the sectional pulley, as thus described, has been mounted on the shaft S, an adjusting-disk is also mounted on said shaft adjacent to the side of the sectional pulley from which the lugs b^2 project. This adjusting-disk C consists, essentially, of a plain central plate having a rim integrally formed therewith, which rim C′ may be used for turning the disk entire; or suitable handles, *c*, may be mounted therein at right angles thereto for the same purpose of adjustment. The inner face of the center plate of the disk C is formed with a spiral way, *c′*, which consists of a rib integrally formed at this portion of the disk and projecting outwardly therefrom. This spiral formation is constructed with such nicety that when the lugs b^2 on the sections B are in engagement therewith the said sections will be equally adjusted radially from the center of the pulley. This adjustment is accomplished by turning the adjusting-disk C, and the lugs b^2 being in engagement with the spiral way *c′* the said sections B will be equally expanded from the center of the wheel. When the said disk C is mounted on the shaft S, it is keyed securely in contact with the pulley by means of a collar, *s*, having a clamping-screw, *s′*, passing therethrough and engaging with the shaft S. Upon the opposite side of the said pulley and adjacent thereto another clamping-collar, s^2, is secured upon the shaft S, and in like manner is provided with a clamping-screw, s^3, the construction of the said collar being readily understood by those skilled in the art.

My improved expansion-pulley can be used to advantage in many classes of machinery where it is desired to suddenly change the speed, and by my construction such operation is rendered convenient and accomplished without loss of time.

The novelty and utility of my improved device being obviously apparent and appreciable, it is unnecessary to further enlarge upon the same herein.

It is obvious that many changes in the construction and arrangement of the parts of my improved expansion-pulley might be made and substituted for those shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, I claim—

1. The combination of the hub A, provided with the radial arms A′, having the slots *a* and

the overlying shoulders a', the sections B, formed by the arms b, having lugs b^2 and the circular rims b', and the disk C, having the spiral way c' directly engaging with the lugs b^2, and adapted upon rotation to simultaneously move all the arms, substantially as described.

2. The combination of the hub A, provided with the radial arms A′, having the slots a and the overlying shoulders a', the sections B, formed by the arms b, having lugs b^2 and the circular rims b', the disk C, having the spiral way c' directly engaging with the lugs b^2, and the clamping-collars and their screws, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

BERNARD J. RILEY.

Witnesses:
GEO. A. WESTON,
HENRY C. LANE.