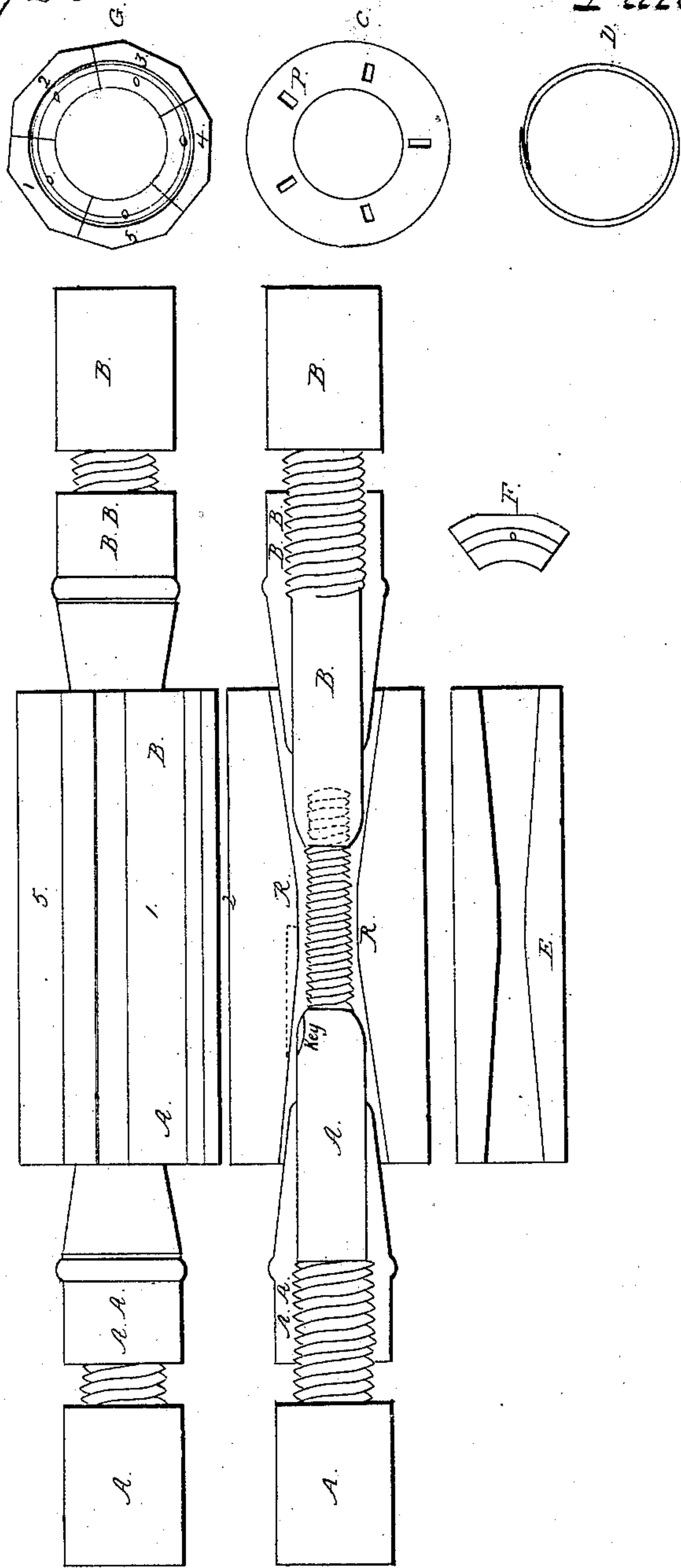


D. L. Allen,

Expanding Mandrel,

Patented Apr. 7, 1868.

N^o 76,372.



Witnesses.

F. C. Campbell.

C. K. Geddes.

Inventor.

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DAVID L. ALLEN, OF WILLIAMSPORT, PENNSYLVANIA.

Letters Patent No. 76,372, dated April 7, 1868.

IMPROVED EXPANDING MANDREL.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, DAVID L. ALLEN, of Williamsport, in the county of Lycoming, and State of Pennsylvania, have invented a new and improved "Expanding Chuck for Turning-Pulleys;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists, first, in the combination and arrangement of a chuck with the arbors and cones thereof, whereby the pulley or other work to be turned may be held rigidly thereon by the sections of the said chuck being expanded to fit the hole of the pulley; second, the combination and arrangement of annular plates, set-screws, and springs, with the chuck, whereby the sections thereof may be united and drawn together around the arbors and cones by the said springs, and their expansion suitably governed by the screws attached at either end of the sections, through slots in the said plates.

To enable any one skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A and B are the small arbors of the mandrel; A A and B B are the cones. The chuck is composed of five sections, (see Nos. 1, 2, 3, 4, and 5, at letter G, which represents an end view of the sections united together, forming the chuck.) A longitudinal view of one of the sections is also shown by the letter E, which view represents the form of its construction internally. In the view immediately above, several of the sections are removed from the arbors and cones, in order to show clearly the relative position of the chuck to the cones, which, as will be seen, on being forced therein by rotating the arbors A and B, will necessarily expand the sections, which may be expanded at either end of the chuck, to suit the inclined or tapering shape of the hole of the pulley, or both ends at once, to conform them to a straight hole. In either case, the pressure exerted by the arbors will spread the sections so as to fit the hole of the pulley tightly, and thus render it immovable; and it will be obvious that the sections may be expanded to fit the holes of pulleys of different diameters.

The arbor A has a key-seat, designed for the reception of a key to keep the small arbor from turning when in use.

The sections are held and drawn together by springs, D, which are placed in circular grooves at each end of the chuck, and attached thereto by screws (see Nos. 1, 2, 3, 4, and 5, at letter G) passed through quadrilaterally-shaped slots, P, in annular plates C, which are placed over the springs on the ends of the chuck, the expansion of each section thereof being controlled by its screw in the slot of the plate.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The combination and arrangement of the chuck, annular plates C, set-screws and springs D, connecting-screw R, with the arbors A and B, and cones A A and B B, substantially in the manner and for the purposes as herein set forth.

DAVID L. ALLEN.

Witnesses:

F. C. CAMPBELL.

C. K. GEDDES.