

Jos. Steger's Improved Friction Pulley.

117010

Fig 1

PATENTED JUL 11 1871

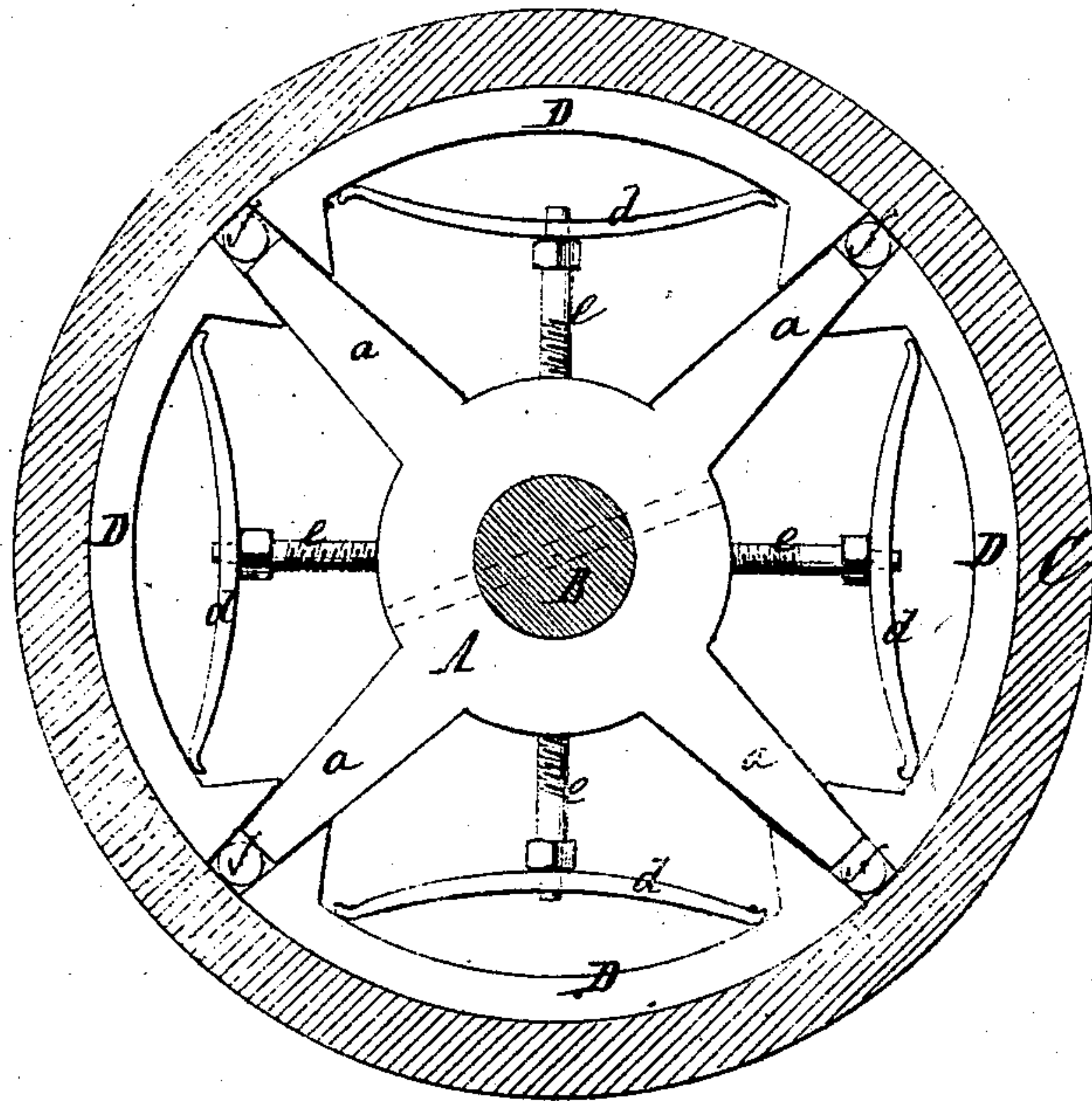
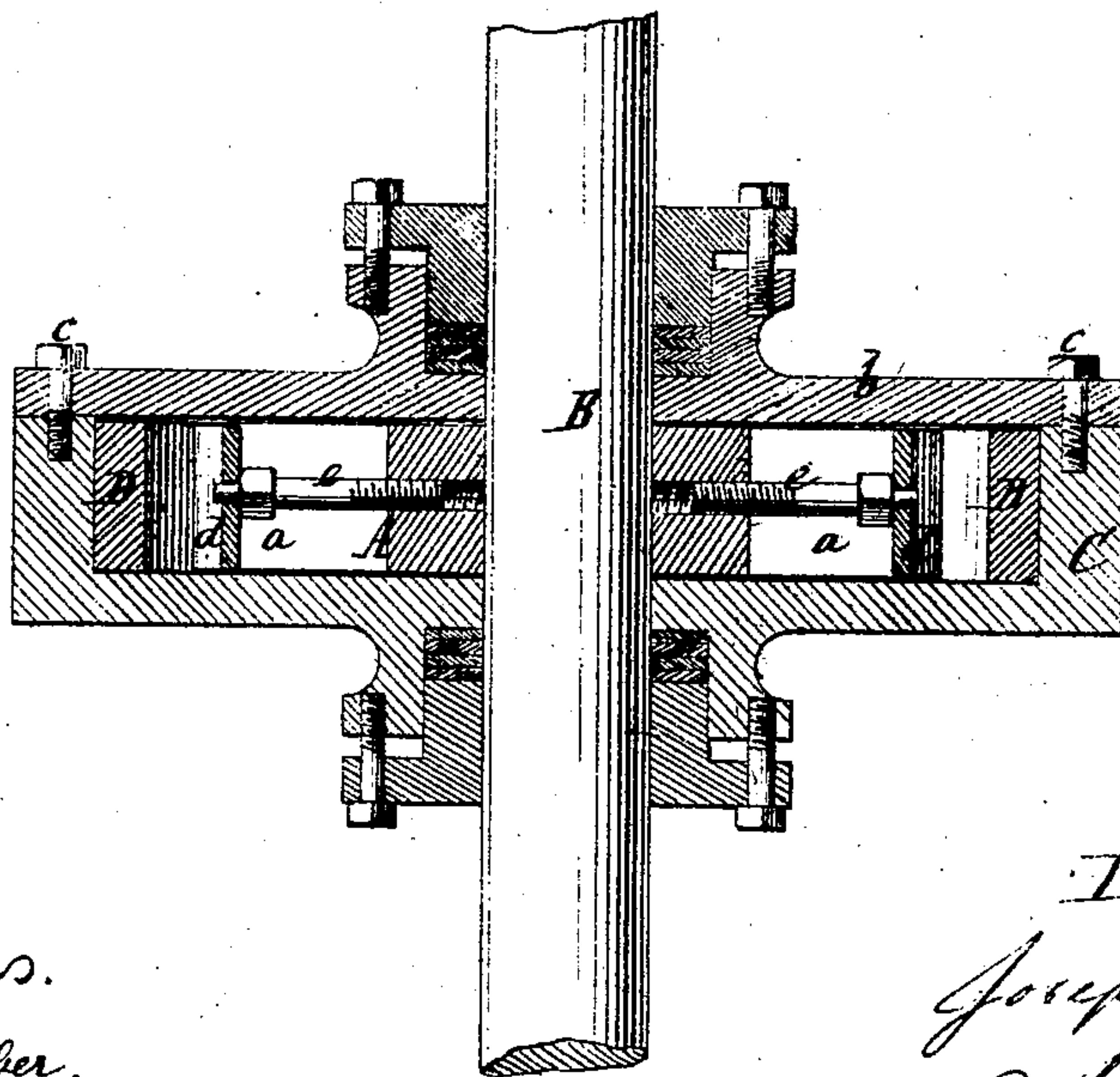


Fig 2.



Witnesses.
C. Mahlers.
Ernst Bilhuber.

Inventor.
Joseph Steger
per Santovard & Haupt
Attys

UNITED STATES PATENT OFFICE.

JOSEPH STEGER, OF NEW YORK, N. Y.

IMPROVEMENT IN FRICTION-PULLEYS.

Specification forming part of Letters Patent No. 117,010, dated July 11, 1871.

To all whom it may concern:

Be it known that I, JOSEPH STEGER, of the city, county, and State of New York, have invented a new and Improved Friction-Pulley; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a sectional front view of this invention. Fig. 2 is a horizontal section of the same.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of a spider mounted firmly on a shaft and inclosed in a sealed drum mounted loosely on said shaft, in combination with shoes situated between the arms of the spider and pressed out against the inner circumference of the drum by adjustable springs, and with friction-rollers interposed between the ends of the arms of the spider and the inner circumference of the drum in such a manner that, by adjusting the springs which act on the shoes, the amount of power required to turn the drum, independent of the spider and its shaft, can be regulated, and at the same time the drum, when pressed up against a revolving axle, pulley, drum, or other device, is prevented from yielding by the friction-rollers, and thereby a friction-pulley is obtained which offers a uniform degree of resistance independent of the power brought to bear against its working-face. Furthermore, all the working parts of the friction-pulley, being inclosed in the sealed drum, are fully protected against dirt or dust, and a friction-pulley is obtained which can be operated for a long time in any place whatever.

In the drawing, A designates a spider provided with four (more or less) arms, *a*, and firmly mounted on the shaft B. Said spider is inclosed in a drum, C, which is mounted loosely on the shaft, and which is provided with a movable head, *b*, secured to the body of the drum by screws *c*, so that when the said head is taken off the drum can be readily passed over the spider, and when the movable head is replaced the drum is firmly seated, and the spider and other parts connected thereto are protected against dirt and

dust; and furthermore, the material used for lubricating the friction-surfaces is inclosed in a drum, and the friction-pulley can be run for a long time without requiring any attention. In practice, the heads of the drum C will be provided with stuffing-boxes, through which the shaft B passes, as shown in Fig. 2, so that no dirt can get into the drum between the shafts and the heads; and furthermore, the escape of the lubricating material at these places is prevented. Between the arms *a* of the spider A are situated the shoes D, which are pressed out against the inner circumference of the drum C by means of springs *d*, and the pressure exerted by these springs on the shoes is regulated by screws *e* secured in the hub of the spider, as shown in the drawing. If a belt is drawn over the drum C, and motion is imparted to the same, the shaft B will be caused to revolve with the drum until the resistance offered to the revolution of the shaft exceeds the friction between the shoes D and the drum, and when this takes place the shaft will remain stationary and the drum will revolve independent of the same. The same effect will be produced if the drum is pressed up against a revolving shaft or wheel. The revolving motion will be transmitted to the shaft B, unless the resistance opposing the revolution of this shaft exceeds the friction between the shoes D and the drum C. By adjusting the springs *d* the friction between the shoes D and the drum C can be regulated, but by the strain of the belt or by the pressure of the drum against the revolving-wheel the force of the springs *d* would be slightly changed and the correct operation of the pulley would be disturbed. To prevent this, I have interposed between the ends of the arms *a* of the spider and the inner circumference of the drum C suitable friction-rollers *f*, by preference made of hardened steel or chilled iron, so that if the drum is exposed to an external pressure tending to force the same inward against the springs *d* this pressure is intercepted by the friction-rollers, and the friction between the shoes D and the drum remains unchanged. By these means I have produced a friction-pulley which is capable of retaining a sufficient quantity of lubricating material to last for several months, and which excludes all dirt and dust from its work-

ing parts and allows of being adjusted to any desired maximum resistance opposing the motion of the shaft B.

What I claim as new, and desire to secure by Letters Patent, is—

1. The spider A with its shoes D mounted firmly on the shaft B, in combination with the drum C, constructed and operating substantially as herein shown and described.

2. The friction-rollers *f*, in combination with the spider A, shoes D, shaft B, and drum C, substantially as set forth.

JOSEPH STEGER.

Witnesses:

E. F. KASTENHUBER,
E. A. ELLSWORTH.