

No. 633,163.

Patented Sept. 19, 1899.

L. T. SICKA.

FRICTIONAL SELF TIGHTENING FASTENING FOR CAMS, PULLEYS, &c.

(Application filed Dec. 1, 1898.)

(No Model.)

Fig. 1.

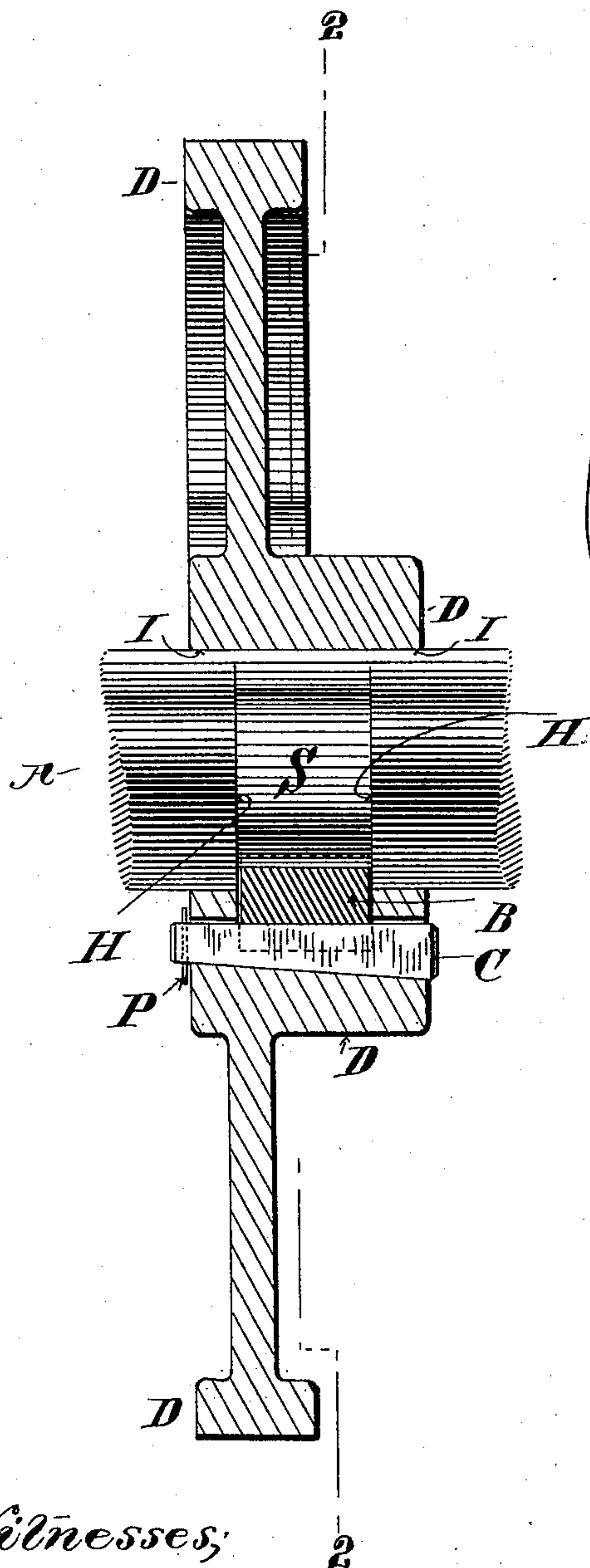
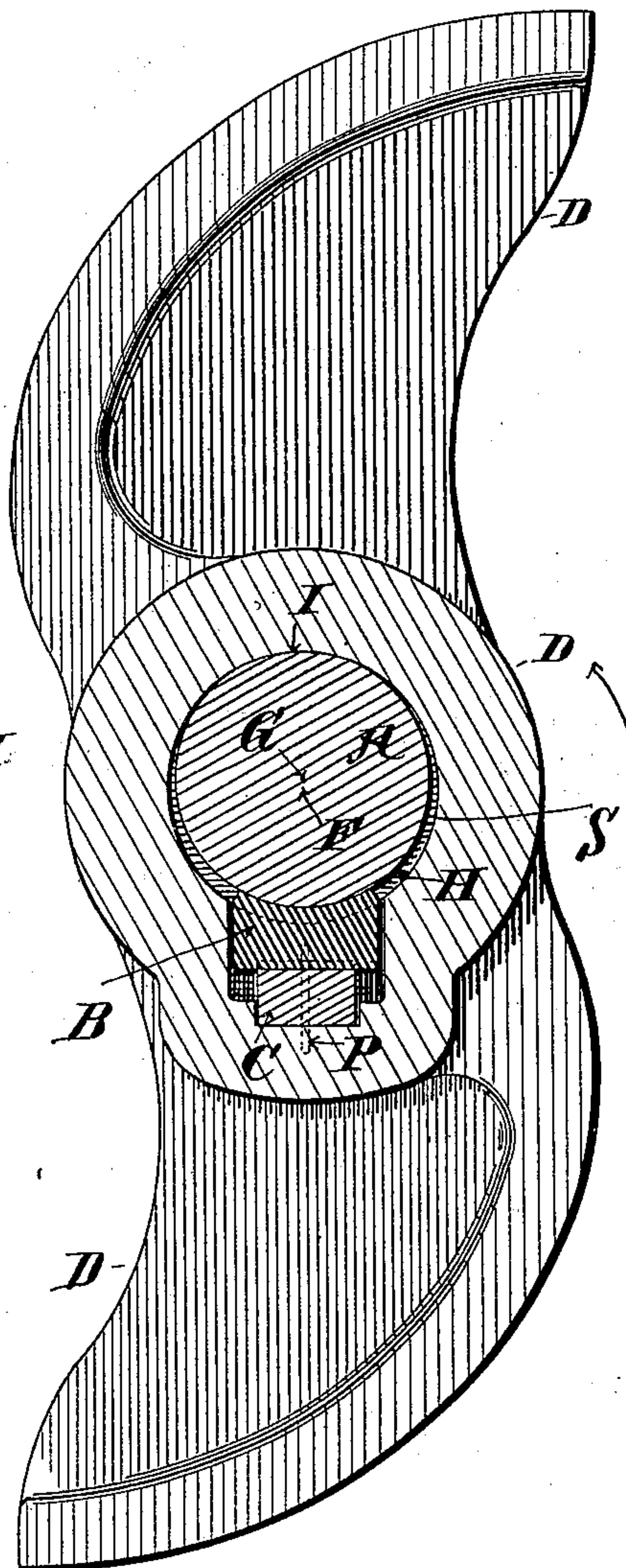


Fig. 2.



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UNITED STATES PATENT OFFICE.

LOUIS T. SICKA, OF DENVER, COLORADO, ASSIGNOR TO THE DENVER
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FRICTIONAL SELF-TIGHTENING FASTENING FOR CAMS, PULLEYS, &c.

SPECIFICATION forming part of Letters Patent No. 633,163, dated September 19, 1899.

Application filed December 1, 1898. Serial No. 697,956. (No model.)

To all whom it may concern:

Be it known that I, LOUIS T. SICKA, of Denver, in the county of Arapahoe, and in the State of Colorado, have invented certain new and useful Improvements in Frictional Self-Tightening Fastenings for Cams, Pulleys, and other Bodies, of which the following is a description referring to the accompanying drawings, which form part of this specification.

The object of the invention is to produce a simple and reliable means for firmly securing cams, pulleys, and other bodies to shafting.

The nature of the invention is such that it will be best understood from the accompanying drawings, which illustrate the best forms of the invention at present known to me.

Figure 1 is a central longitudinal section showing the invention as applied to a cam and cam-shaft. Fig. 2 is a transverse central section of the same.

Throughout the drawings like letters of reference indicate like parts.

The shaft is lettered A. At the point where the cam or other body is to be mounted the shaft is channeled so as to form an eccentric bearing-surface S for the gib or fastening block B. The gib B is fitted to the curved surface S and to the plain surfaces or shoulders H, so that when in place it bears evenly against the curved surface, and is held from movement longitudinally of the shaft by the shoulders H.

The cam or other body to be secured to the shaft is lettered D, and it preferably fits the concentric surface of the shaft and extends, though not necessarily, beyond the eccentric surface S in both directions. The gib B fits into a recess, as shown, in the body D, thereby preventing the longitudinal movement of the body D relatively to the gib B. A wedge or key C, suitably fitted in the body D, acts on the gib B to force it against the eccentric surface S. A pin or cotter P may be passed through the end of the key C to prevent its displacement. The key C forms means for clamping the gib B against the shaft to secure the body D in place.

The operation of the device is as follows:
To put the body D on the shaft A the gib B is inserted in its recess and dropped back so

as not to interfere with the slipping of the body D along the shaft. The body D is slipped along the shaft and turned so that the gib B comes opposite the deepest portion of the channel formed by the eccentric surface A. The wedge-key C is then forced in, driving the gib B against the surface S, between the shoulders H. When in this position, owing to the eccentricity of the surface S, which in the drawings is centered at the point G slightly to one side of the center F of the shaft, the gib B is nearer to the center F of the shaft than it can possibly be at any other point in the eccentric surface S. Consequently, even if the wedge C be not driven in tight, the turning of the body D around the shaft jams the gib B as it slips along the eccentric surface S toward portions farther removed from the center F of the shaft. The more the cam or body D tends to turn on the shaft the tighter will become the frictional grip of the gib B upon the surface S. If the key C is driven tightly into place in putting on the cam or body D, no appreciable displacement of the cam in one direction or the other can take place. The invention, therefore, is applicable not only to prevent the slipping and turning of bodies mounted upon shafts, but is also applicable to the securing of such bodies as have to be set at certain definite angles in relation to other bodies on the same shaft, excepting only instances where mathematically exact setting is required. Furthermore, in cases where the shaft rotates continuously in one direction my invention allows an adjustment of the cam or rotary body for a considerable angle one way from the position shown in the drawings, because a slight loosening of the key C will allow the cam to turn through a considerable angle before the gib B jams, and this angle can be regulated by means of the key C.

It must be understood that the eccentric surface S, so far as its own functions are concerned, need not extend all around the shaft and need not lie in a recess, since the operation of the surface would be the same however far removed from the axis of the shaft, provided only that its curvature be about a point which does not coincide with the center of the shaft. Likewise it is clear

that the embodiment of the principles of the invention is susceptible of great diversity of form.

Therefore I claim and desire to secure by these Letters Patent of the United States the following essential features and combinations, to wit:

1. In combination with a cam, pulley or rotary body, a shaft provided with a recessed, eccentric portion, a gib resting in the recessed portion against the eccentric surface thereof and confined within the rotary body, and a key for forcing the body against the said surface, thereby forming a self-tightening fastening for the said body, and also preventing endwise movement, substantially as set forth.

2. In combination, a shaft in part eccentric and in part concentric, a cam, pulley, or rotary body, loosely fitting a concentric portion

of the shaft, a gib bearing against the eccentric portion of the shaft, and a wedge-key therefor, substantially as set forth.

3. In combination, a shaft provided with eccentric portion or surface, a cam, pulley, or rotary body, and a gib jammed between such surface of the said shaft and the said cam, pulley, or rotary body, and lying in a recess in the said cam, pulley, or rotary body, which prevent relative movement between the gib and the cam, pulley, or rotary body, endwise of the shaft, substantially as set forth.

Signed this 7th day of October, 1898, at Denver, Colorado.

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Witnesses:

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