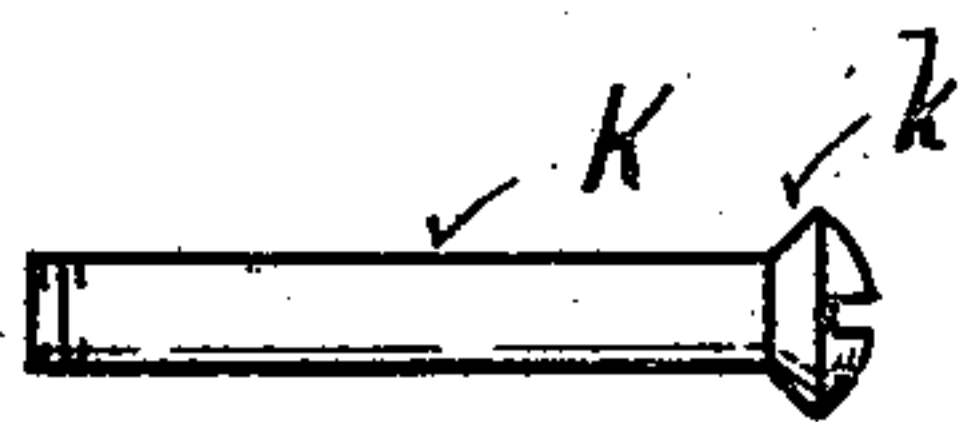
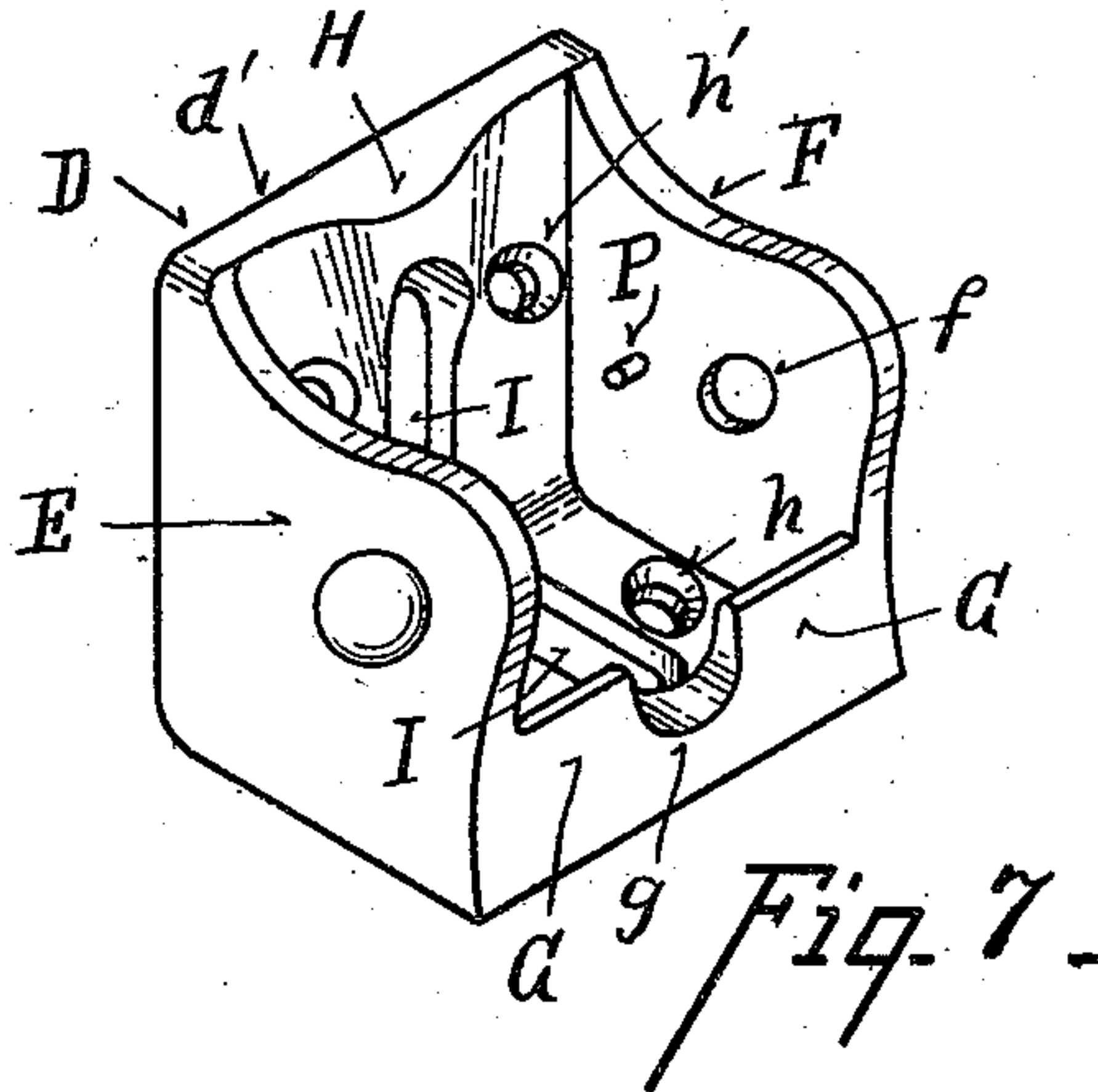
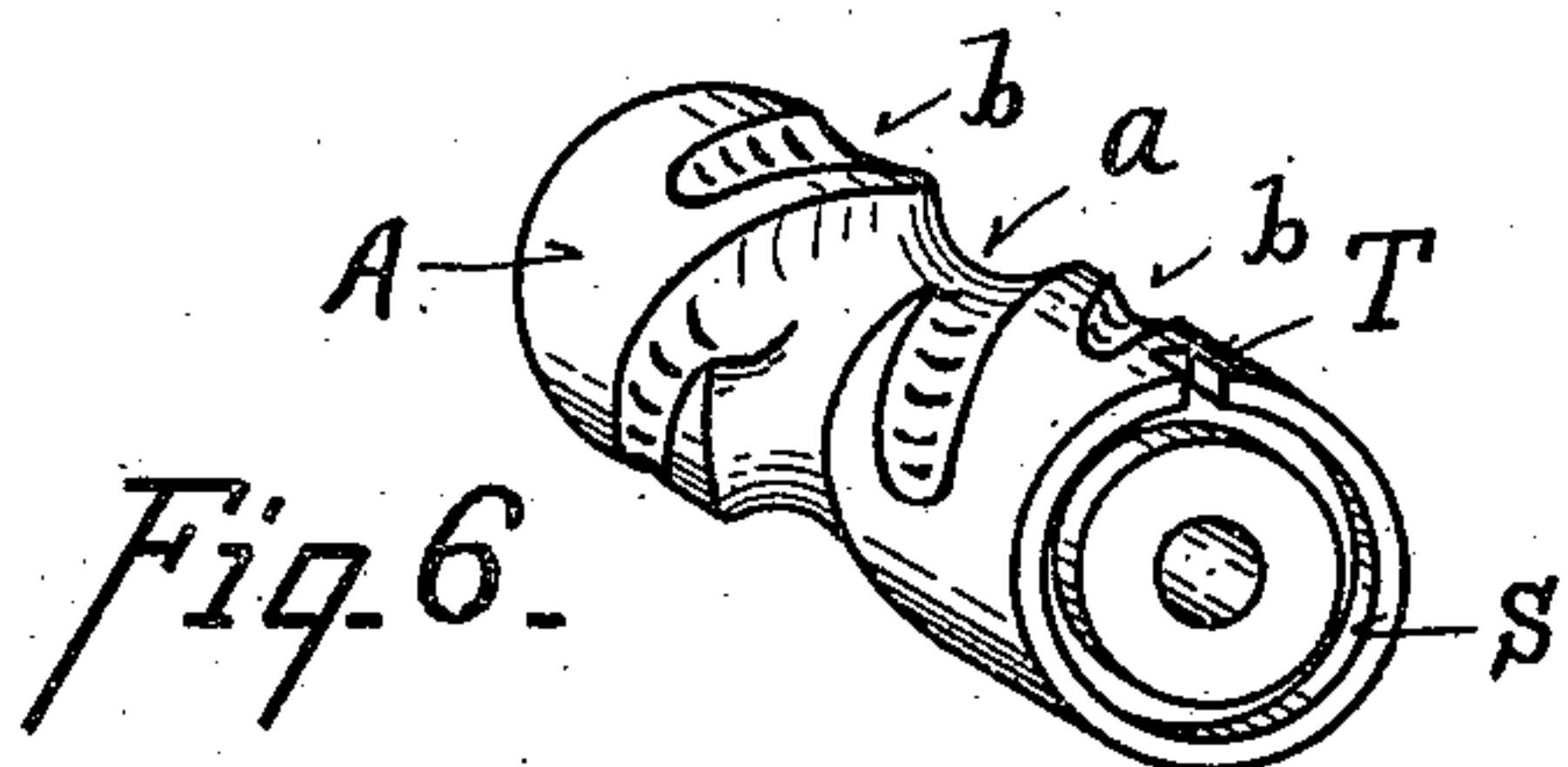
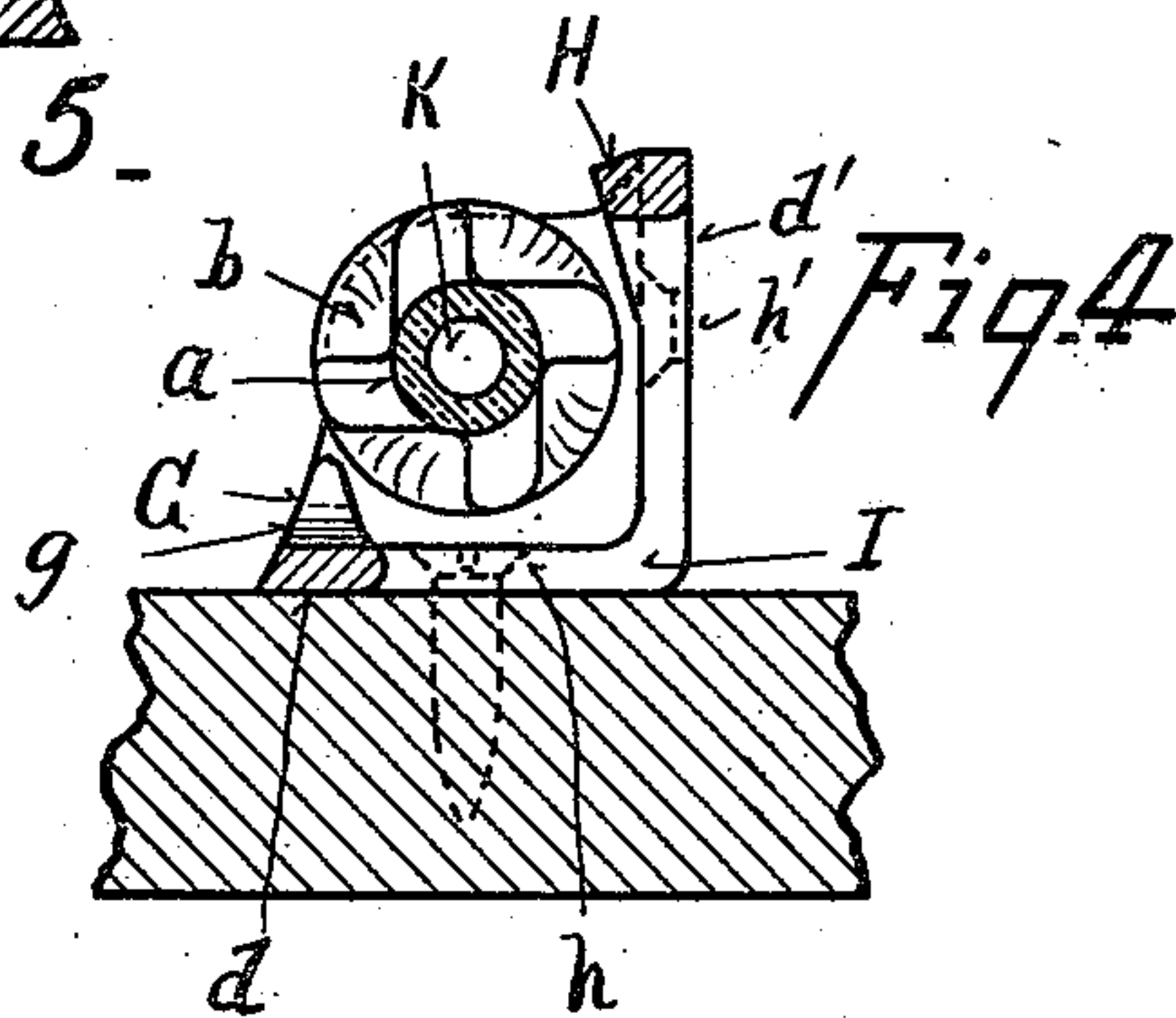
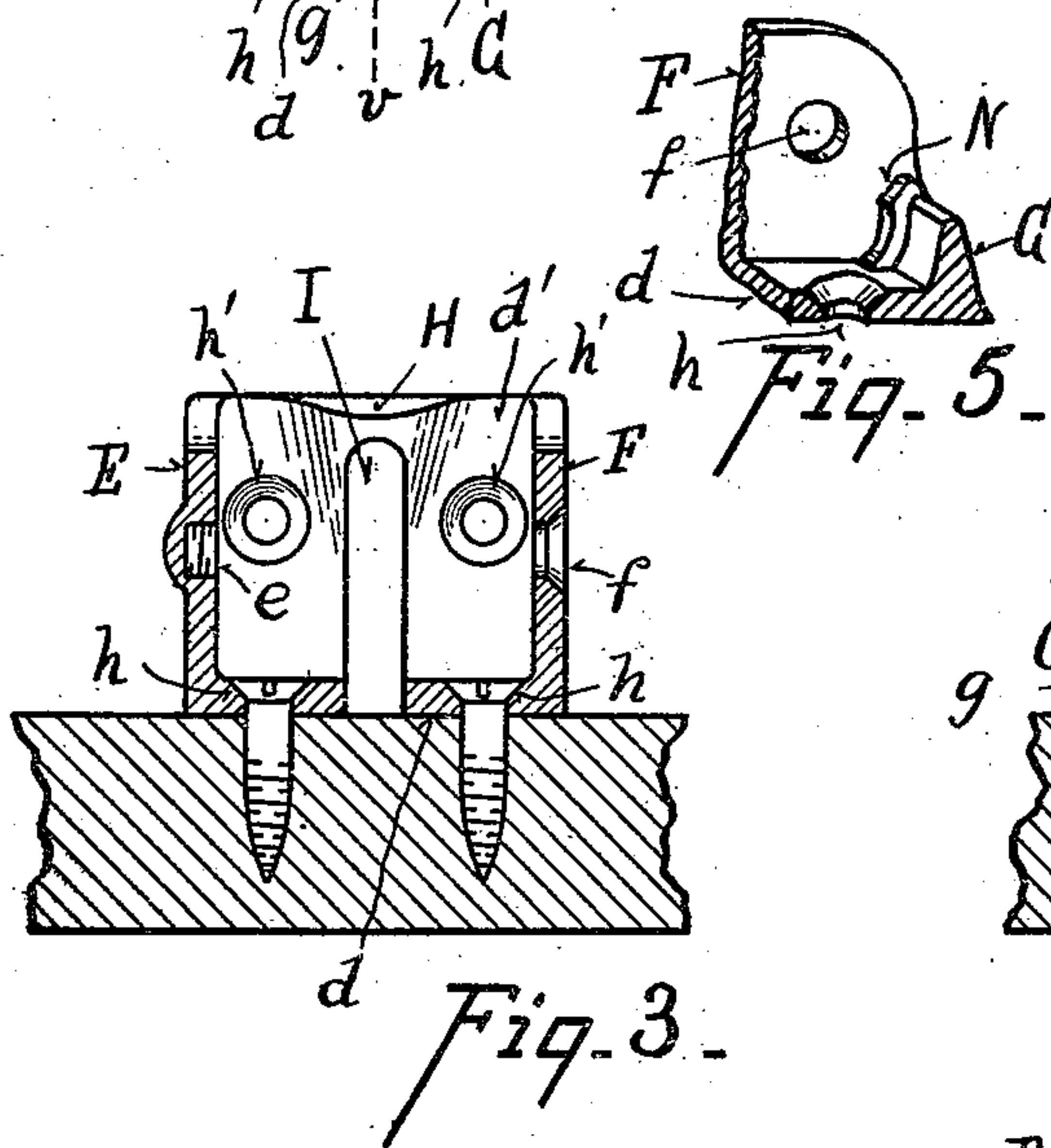
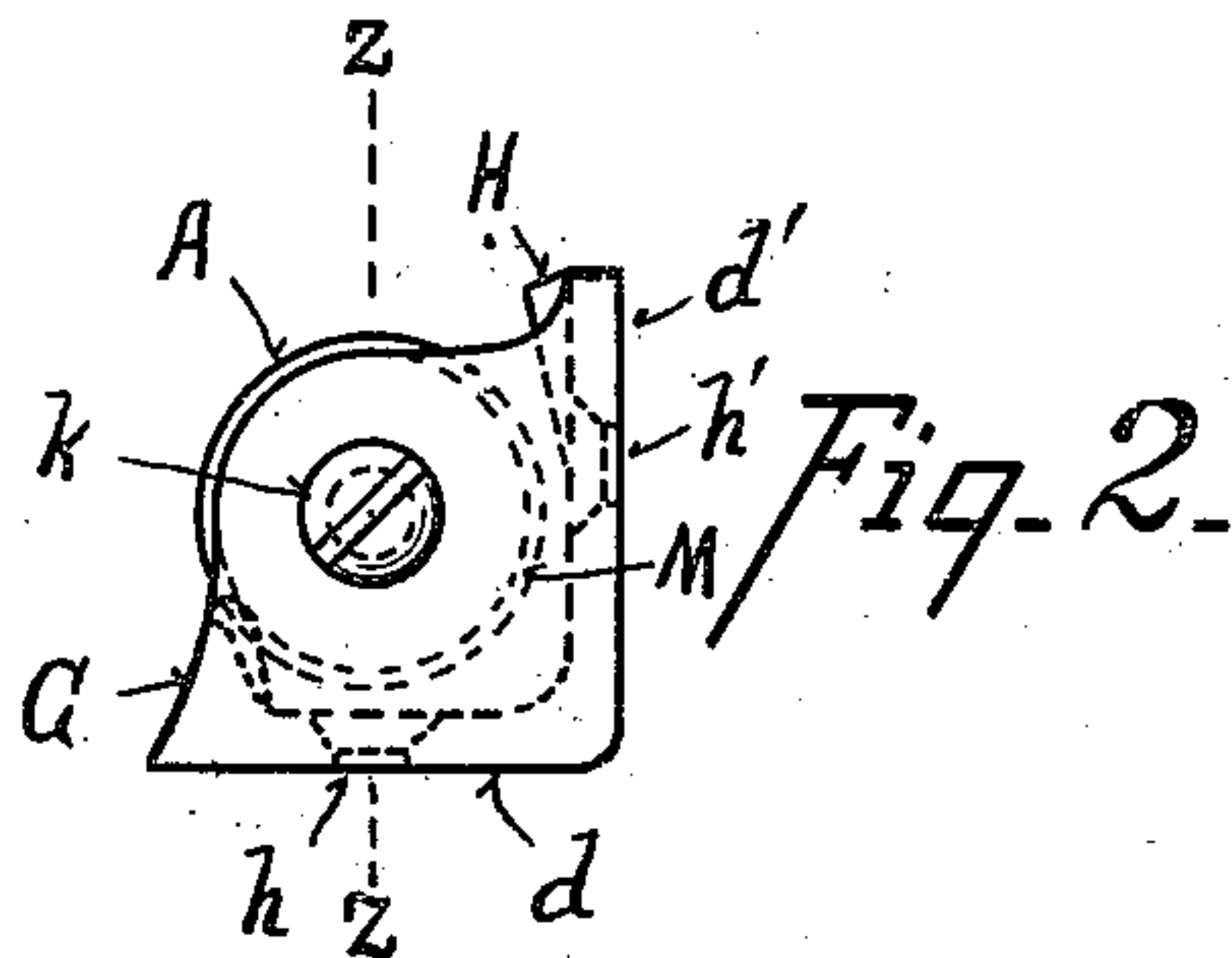


990,431.



Witnesses

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Fig. 8.

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UNITED STATES PATENT OFFICE.

ALBERT N. FRIES, OF CINCINNATI, OHIO.

WINDOW-SHADE CATCH-PULLEY.

990,431.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed November 16, 1910. Serial No. 592,634.

To all whom it may concern:

Be it known that I, ALBERT N. FRIES, citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Window-Shade Catch-Pulleys, of which the following is a specification.

My invention relates to improvements in window shade catch pulleys.

One of its objects is to provide a catch pulley in which the roller or pulley is detachable and its supporting frame or housing is adapted to be attached in various positions to the window frame without the use of special external attaching ears.

Another object is to provide a special form of roller and housing whereby a more efficient operation is attained and a wider range of application.

Another object is to provide a special form sure the roller being mounted in operative position with reference to the housing.

It further consists in certain details of form, combination and arrangement, all of which will be more fully set forth in the description of the accompanying drawings, in which;

Figure 1 is a front elevation of my improved pulley and housing. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section through the housing and part of the window frame, taken on line $z z$ of Fig. 2. Fig. 4 is a vertical section through the pulley and housing taken on line $v v$ of Fig. 1. Fig. 5 is a detail view, partly in section of a portion of the housing. Fig. 6 is a perspective view of the pulley detached, and illustrating a modified means to insure an operative position of the pulley. Fig. 7 is a perspective view of the housing and illustrating a modification adapted to receive the pulley Fig. 6. Fig. 8 is a side elevation of the pulley journal detached.

In the accompanying drawings, A represents the pulley or roller, the ends of which are very slightly conical so that the roller bears at a small surface near its journal against the inner faces of the housing. The pulley is provided with a deep central annu-

lar groove a in which the window shade cord travels in adjusting the shade, and with short diverging and diminishing grooves b at opposite sides of the groove a , into which the cord is adapted to be diverted and locked to hold the shade in the desired position.

D represents the frame or housing in which the pulley is supported and journaled. The housing comprises two plates or members $d d'$ at right angles to each other which are connected at opposite sides by side plates E F. The housing plate d is provided with a projecting rib or guard G having a semi-circular recess g opposite the groove a of the roller, and which guard serves to direct the cord when passing from the guard to the roller, and prevent the cord from entering any of the side grooves or climbing to the larger diameter of the roller. The plate d' is provided with a central projection H , which serves when the cord is passing from said projection to the roller, to deflect the cord whenever it is slackened, into one of the side grooves b where the cord becomes locked between said groove and the plate d' . A groove I through the plates $d d'$ permits the cord to be passed through said groove to the pulley, and thus permits the housing to be attached in a variety of positions with reference to the shade.

In order to attach the housing to the window frame I preferably provide screw holes h through the plate d , and similar holes h' through the plate d' inside the plates E F, and thereby avoid projections outside of the plates E F especially provided to receive the attaching screws. In order to attach the housing through the screw holes inside the plates E F the roller is detached and adjusted to position after the housing has been secured to the window frame. In order to provide for detaching the roller I provide a threaded recess e in the plate E and a perforation f in the plate F. A journal pin K threaded at one end and provided with a head k at the opposite end serves as a journal for the pulley and enables the pulley to be readily detached and replaced.

The pulley would ordinarily be adapted to

be inserted into the housing with either end toward the plate E, but such change would reverse the direction of the grooves *b*, and in one position the pulley would be inoperative.

5 I therefore provide means to prevent the pulley being inserted in inoperative relation to the housing, comprising a member on the pulley to prevent its assembly in inoperative position. As illustrated in Figs. 1, 2, and
10 5 the roller has a portion M of reduced diameter at one end, while the guard G is provided with a projection or fin N adapted to closely approach the reduced portion M of the roller. Thus in introducing the roller
15 into the housing, if in position to be operative the portion M will slip into position over the portion N and permit the journal pin to be inserted through the roller and screwed into the recess *e* to lock the roller in
20 place, but if attempt is made to insert the roller in inoperative relation to the housing the part N will engage the full diameter portion of the roller at the opposite end from the reduced section M, and will prevent the
25 hole in the center of the roller from registering with the hole *f* in plate F thus preventing the journal pin being inserted in position, and necessitating a reversal of the roller.

30 In Figs. 6 and 7 I have shown another form of mechanism to prevent the roller and housing being assembled in inoperative relation, which comprises a pin or projection P projecting inwardly from the plate
35 F, which in assembling the parts is adapted to enter and subsequently travel in an annular recess S in the end of the roller, entrance for said pin to the recess S being through a slot or gate T.

40 The housing is adapted to be secured to the window frame by screws either through holes *h* in the plate *d* or through holes *h'* in the plate *d'*, and so as to present any one of four faces toward the entering cord, and
45 I am thus enabled to provide a more easily running pulley, a housing strong and of pleasing appearance, and without surplus metal or external attachment projections, and insure the attachment of the pulley in
50 operative relation to the housing.

The structure herein illustrated and described is capable of considerable modification without departing from the principle of my invention.

55 Having described my invention, what I claim is:

1. In a mechanism of the character described, a housing comprising a substantially right angle plate adapted to be attached
60 with either face to a support, side plates joining opposite sides of said angle plate and adapted to receive and support a detachable pulley journal, and means intermediate of said side plates adapted to attach said
65 housing to a support, a detachable pulley

journal adapted to be supported by and locked to said side plates, and a detachable pulley having an annular groove and diverging and diminishing grooves leading therefrom adapted to engage and lock a
70 cord.

2. In a mechanism of the character described, an integral housing comprising a substantially right angle plate provided with side plates at opposite sides of said
75 angle plate adapted to support a detachable pulley journal, means carried by said angle plate between said side plates to enable either face of said angle plate to be attached to a support, a detachable pulley journal,
80 and a detachable pulley having an annular groove and diverging and diminishing grooves leading therefrom and adapted to engage and lock a cord.

3. In a mechanism of the character de- 85 scribed, an integral housing comprising a substantially right angle plate provided with side plates at opposite sides of said angle plate adapted to support a pulley journal, said angle plates being perforated inter- 90 mediate of said side plates for the passage of screws to attach said angle plate to a support, a pulley journal adapted to be supported and locked to said side plates, and a detachable pulley having an annular 95 groove to receive a cord and diverging and diminishing grooves leading from said annular groove and adapted to engage and lock a cord.

4. In a mechanism of the character de- 100 scribed, an integral housing comprising a substantially right angle plate provided with side plates at opposite sides adapted to support a pulley journal, said angle plates being provided with means intermediate of 105 said side plates to attach said housing to a support, a pulley journal, and a pulley provided with an annular groove to receive a cord and diverging grooves adapted to lock a cord, and means adapted to prevent said 110 pulley being assembled in an inoperative position relative to said housing.

5. In a mechanism of the character described, a housing comprising an angle plate adapted to be attached with either face to a 115 support, side plates at opposite sides of said angle plate adapted to support a pulley journal, and means intermediate of said side plates to attach said housing to a support, a pulley journal, and a pulley having an annular 120 cord groove and diverging locking grooves, and a member to insure the assembling of said pulley and housing in predetermined relation to each other.

6. In a mechanism of the character de- 125 scribed, a housing comprising an angle plate adapted to be attached with either face to a support, side plates at opposite sides of said angle plate adapted to support a pulley journal, said angle plate being perforated inter- 130

mediate of said side plates for the passage of screws to attach said housing to a support, a pulley journal, and a pulley having an annular cord groove and diverging locking grooves and a member to insure the assembling of said pulley and housing in predetermined relation to each other.

In testimony whereof I have affixed my signature in presence of two witnesses.

ALBERT N. FRIES.

Witnesses:

C. W. MILES,
NATHANIEL H. MAXWELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
