

No. 840,373.

PATENTED JAN. 1, 1907.

J. RENNER.
BALL BEARING WINDOW SHADE ADJUSTER.

APPLICATION FILED MAR. 15, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

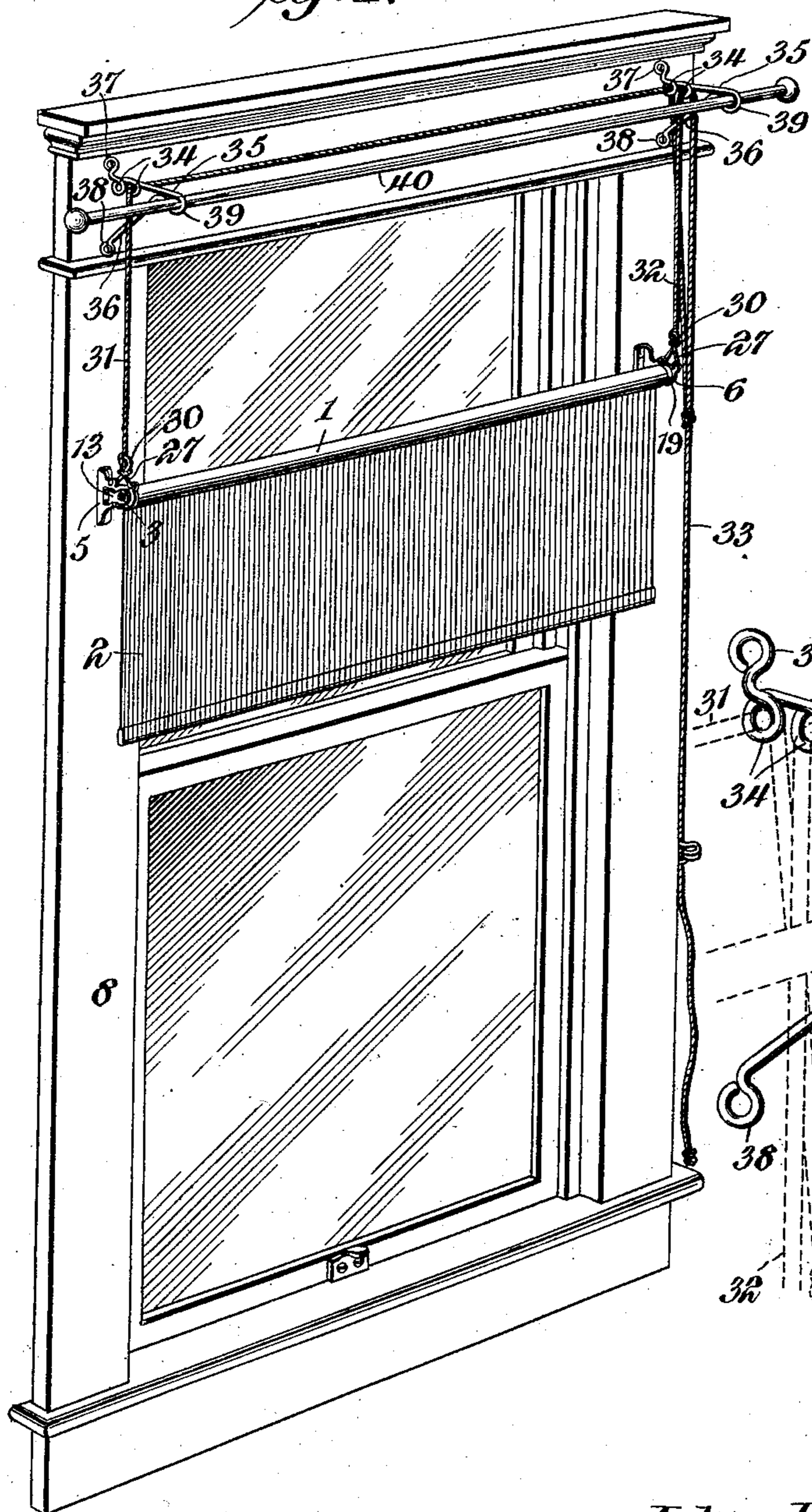
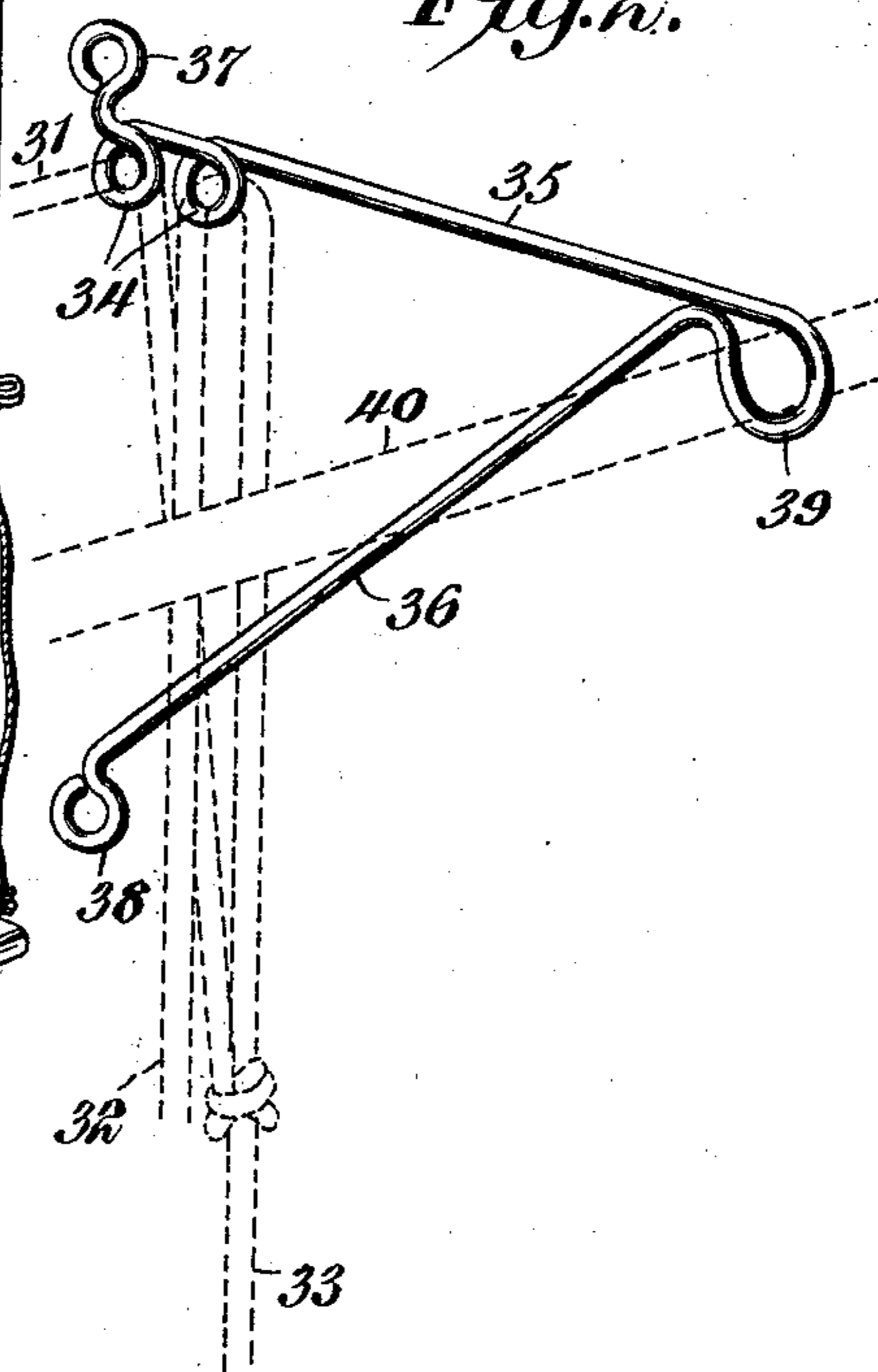


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

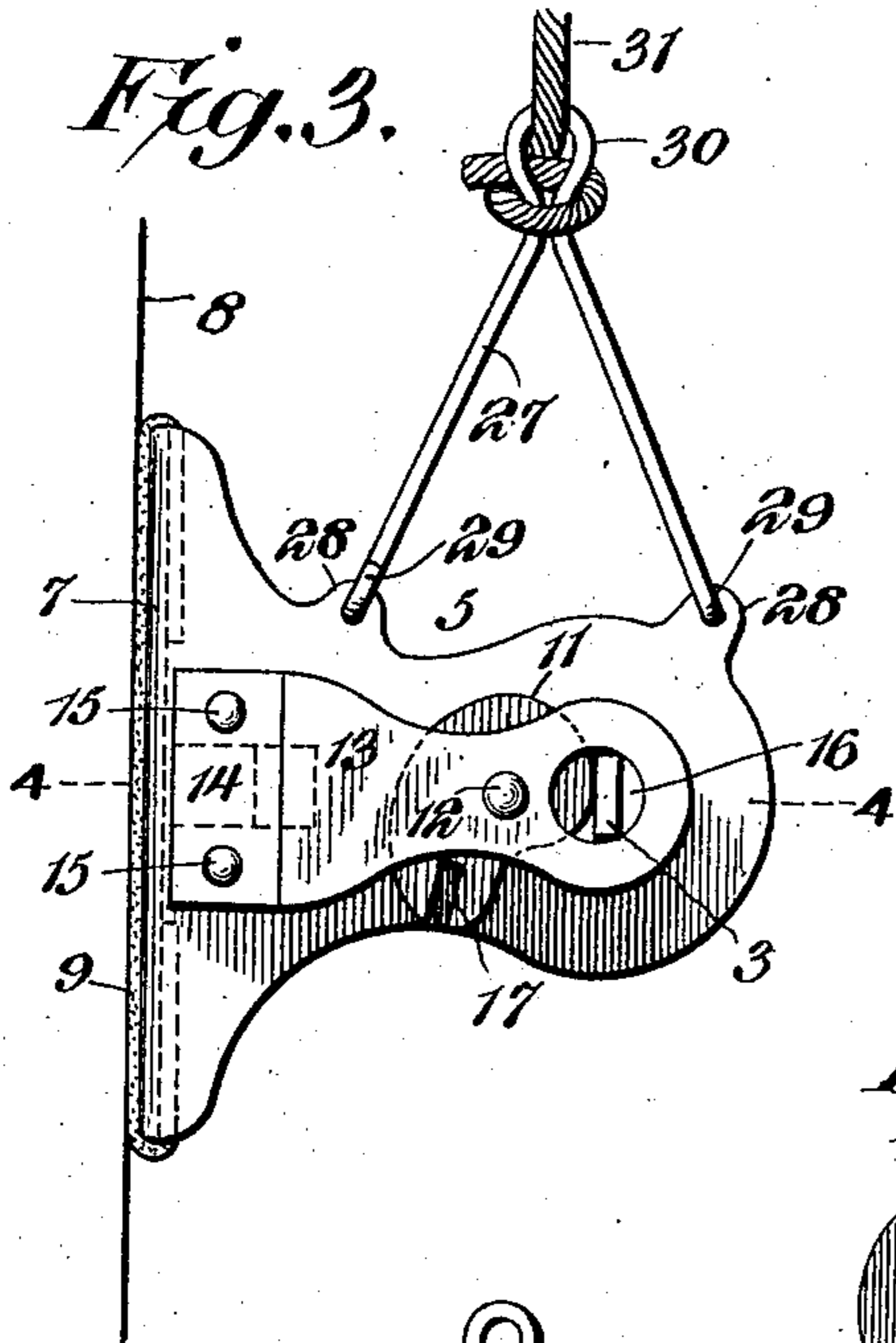


Fig. 4.

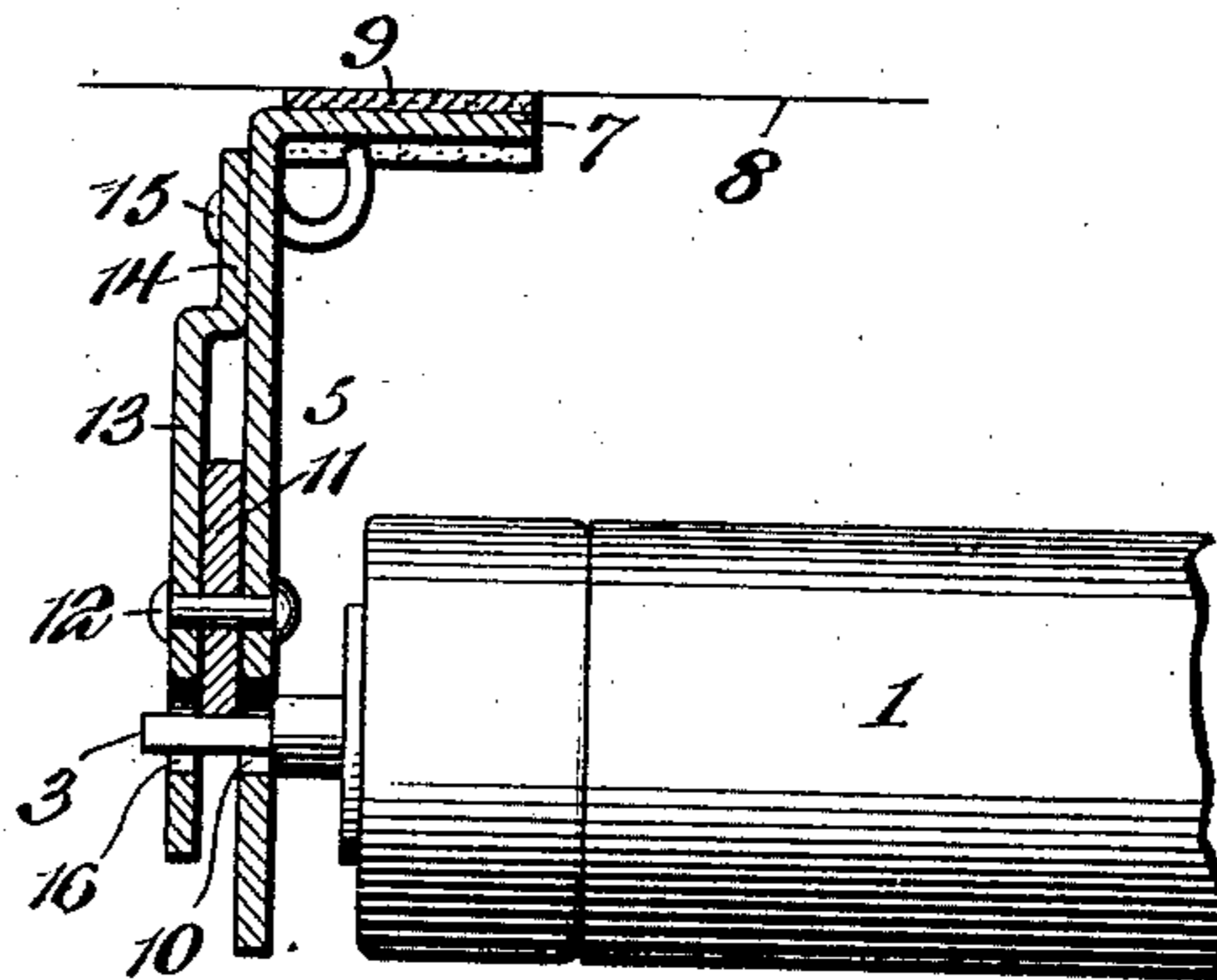


Fig. 5.

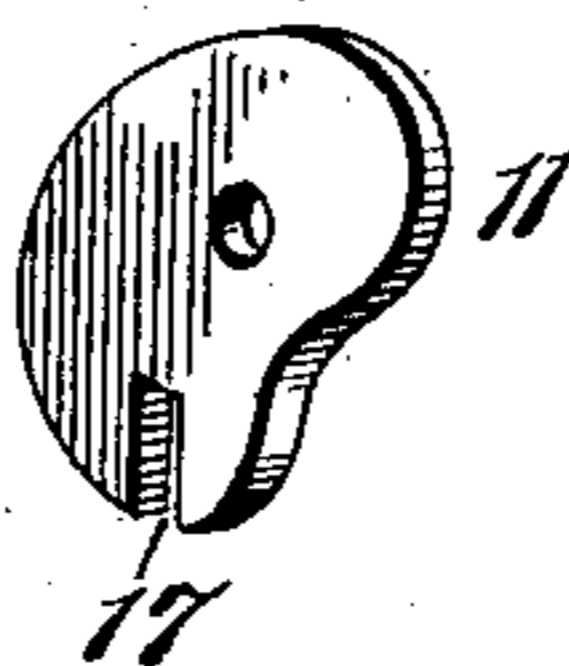


Fig. 6.

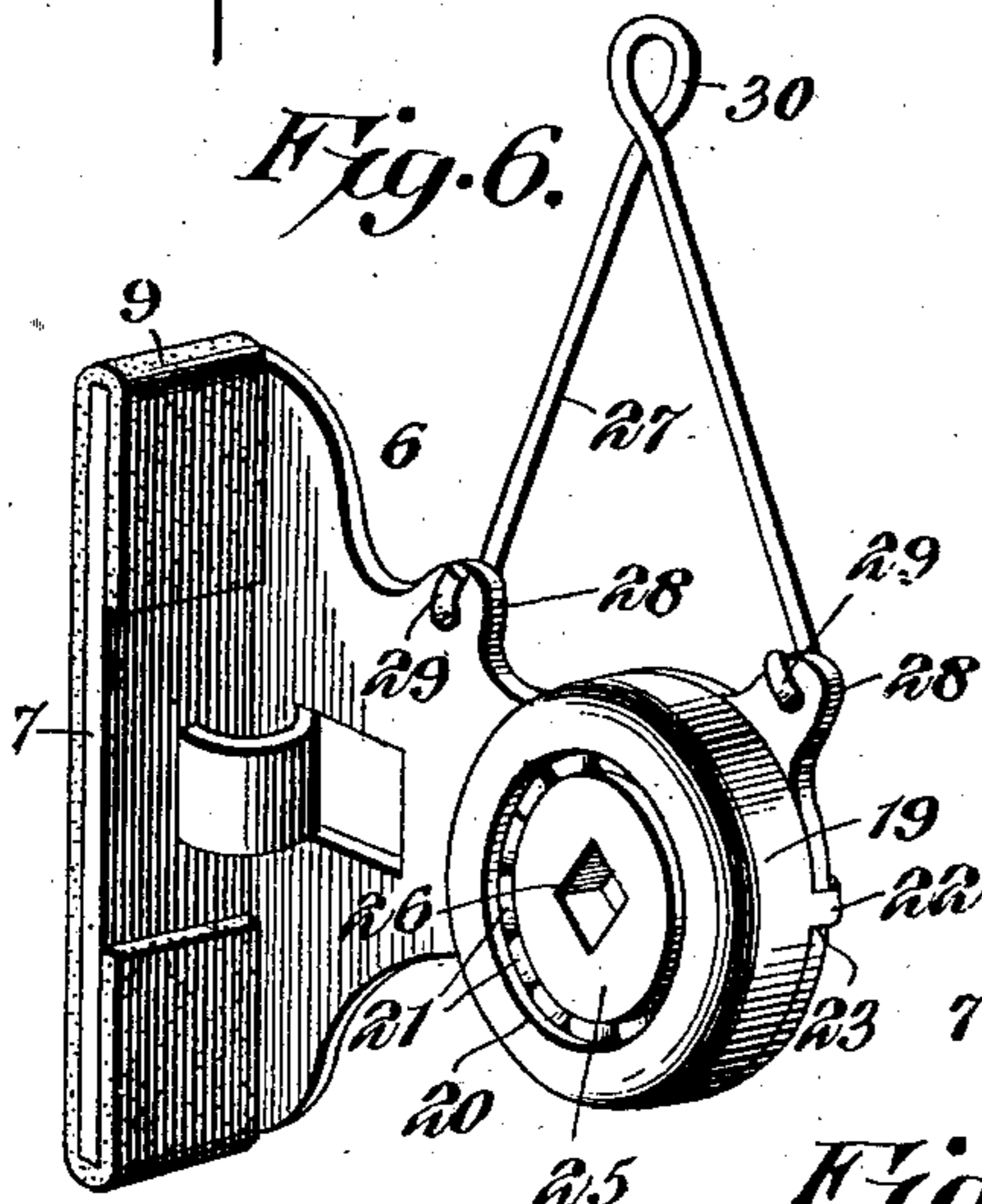


Fig. 8.

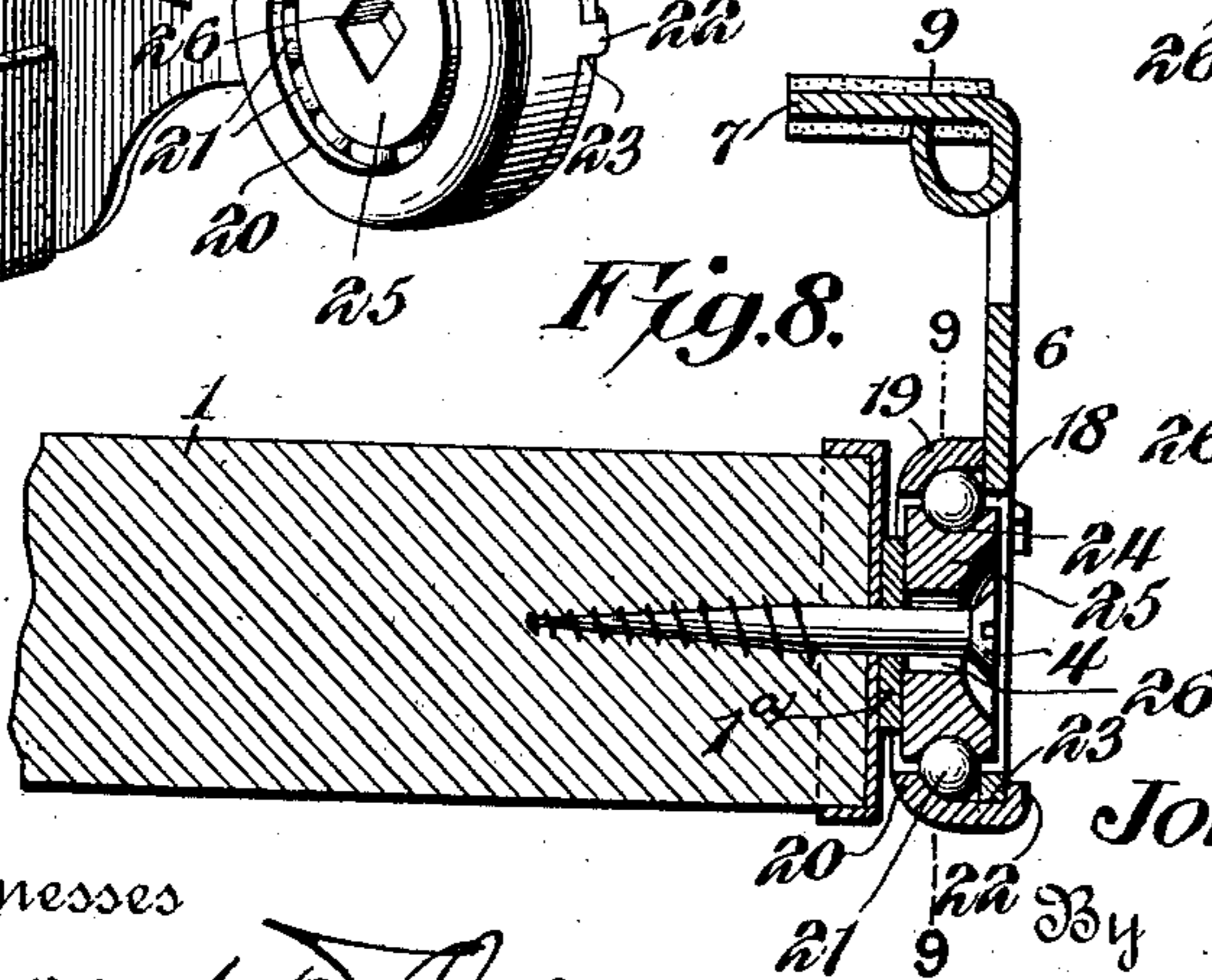


Fig. 7.

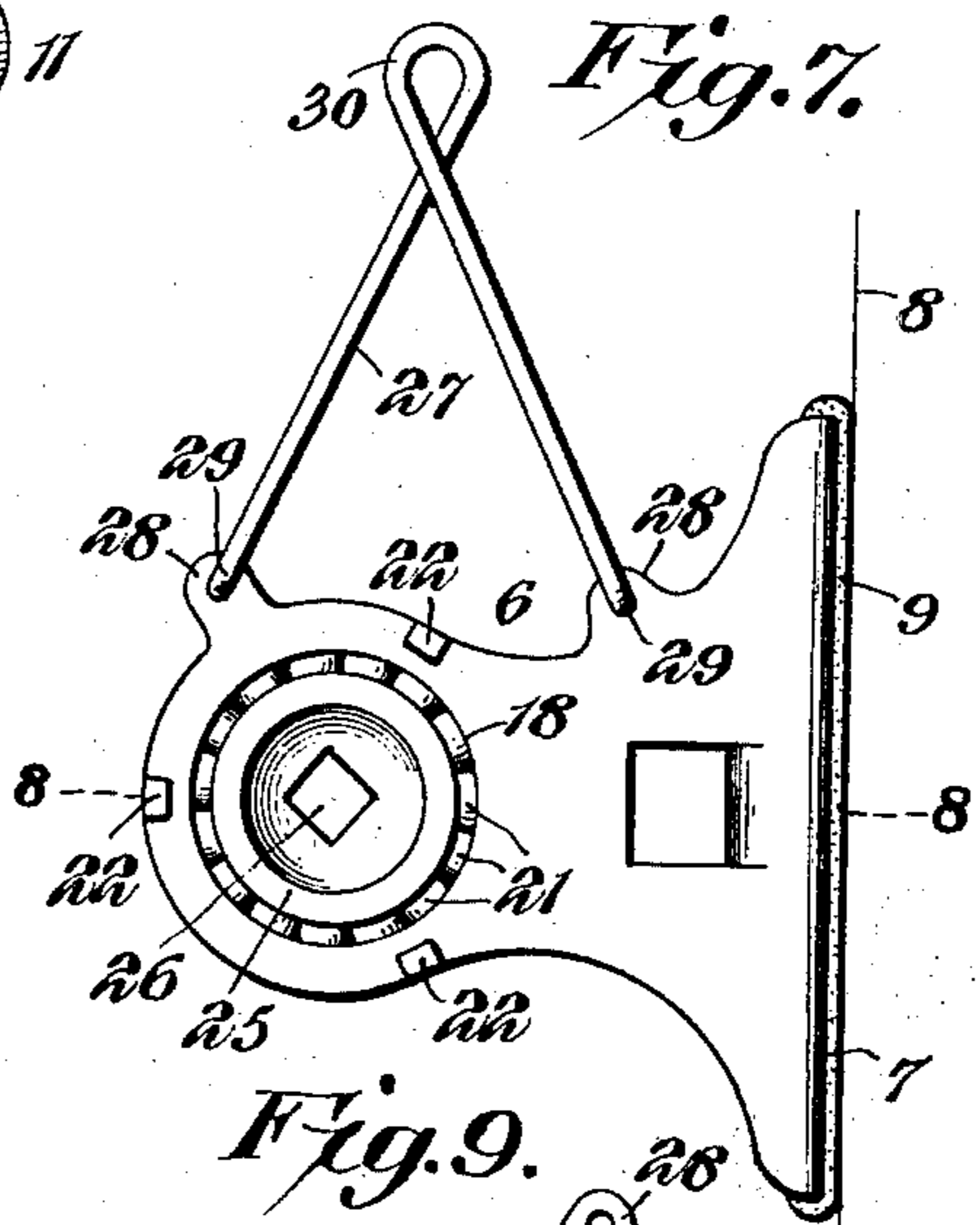
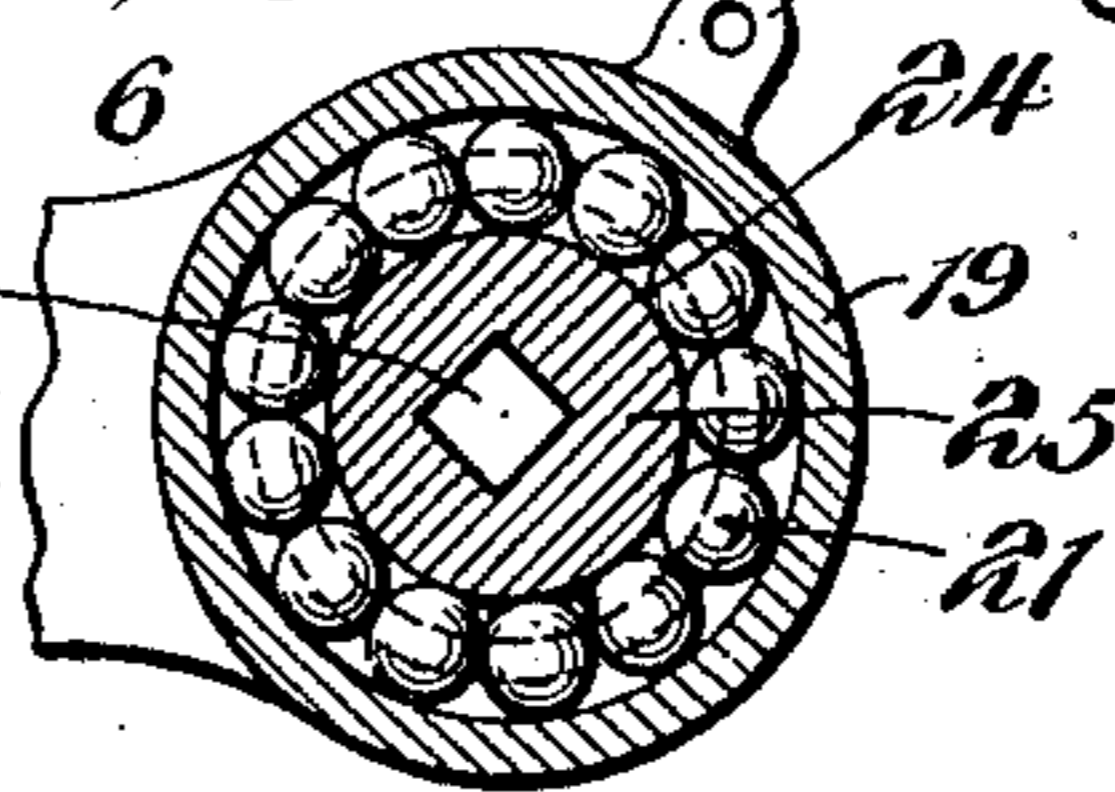


Fig. 9.



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UNITED STATES PATENT OFFICE.

JOHN RENNER, OF BURLINGTON, IOWA.

BALL-BEARING WINDOW-SHADE ADJUSTER.

No. 840,373.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed March 15, 1906. Serial No. 306,189.

To all whom it may concern:

Be it known that I, JOHN RENNER, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented a new and useful Ball-Bearing Window-Shade Adjuster, of which the following is a specification.

The invention relates to a ball-bearing window-shade adjuster.

The object of the present invention is to improve the construction of window-shade fixtures and to provide a ball-bearing window-shade adjuster of simple and comparatively inexpensive construction adapted to permit a window shade or curtain to be readily applied to a spring-roller of an ordinary window shade or curtain and capable of enabling the same to be readily arranged over the desired portion of a window and of also supporting a lace-curtain rod so that the lace curtains will not interfere with the adjustment of the window-shade.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a ball-bearing window-shade adjuster constructed in accordance with this invention. Fig. 2 is a detail perspective view of one of the supporting-brackets. Fig. 3 is a side elevation of one of the shade-carrying brackets, illustrating the construction for clamping the spring-journal of the shade-roller. Fig. 4 is a horizontal sectional view on the line 4 4 of Fig. 3. Fig. 5 is a detail perspective view of the cam for engaging the spring-journal. Fig. 6 is a perspective view of the shade-carrying bracket, illustrating the construction of the ball-bearing for supporting the rotary journal of the shade-roller. Fig. 7 is an elevation of the same. Fig. 8 is a horizontal sectional view on the line 8 8 of Fig. 7. Fig. 9 is a sectional view on the line 9 9 of Fig. 8, the rotary journal being omitted.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a spring-actuated shade-roller of an ordinary window shade or curtain 2, the said roller 1 being provided at one end with a spring-journal 3 and having a rotary journal 4 at its other end. The spring-journal, which is provided with an outer polygonal or flattened portion, is connected with the spring of the roller in the usual manner, and as the particular construction of the means for actuating the roller to wind up the curtain or shade does not constitute a portion of the present invention illustration thereof is deemed unnecessary. The curtain or shade is supported by adjustable brackets 5 and 6, which are approximately L-shaped, as clearly illustrated in Figs. 4, 6, and 8 of the drawings. The inner portions 7 of the shade-carrying brackets 5 and 6 extend transversely of the window and are adapted to fit against and slide vertically on the window frame or casing 8, as clearly shown in Fig. 1 of the drawings. These inner transverse portions 7 are preferably provided with felt strips 9 to avoid scratching or otherwise marring the window frame or casing 8.

The shade-carrying brackets have outwardly-extending arms for supporting the roller 1, and the arm of the bracket 5 is provided at its outer portion with an opening 10, through which passes the spring-journal 3, and the latter is engaged and is locked rigidly with the bracket 5 by a cam 11. The cam 11 is mounted on a pivot 12, which pierces the arm of the bracket 5 and which is supported at its outer end by a plate 13, arranged in spaced relation with the arm of the bracket and provided with an inner angularly-bent attachment portion 14, which is secured to the arm of the bracket at the inner end thereof by rivets 15 or other suitable fastening devices. The outer portion of the plate 13 is provided with a circular opening 16 to receive the spring-journal 3, and the latter is held against the walls of the opening 16 at the front portion thereof by the said cam. The cam is provided with an upper curved engaging edge, which is arranged eccentrically with relation to the pivot, whereby when the lower portion of the cam is swung inwardly or rearwardly the upper portion will be caused to clamp the

spring-journal. The lower portion is provided with a slot or opening 17, adapted to receive the blade of a screw-driver or other tool for operating the cam. The openings 10 and 16 are of the same diameter and register with each other, so that the spring-journal when engaged by the cam is supported by the plate 13 and the arm of the bracket 5.

The other bracket 6 is provided with an enlarged opening 18 and has a casing 19 mounted on it and arranged at its inner face. The casing is circular and is provided with an inwardly-extending annular flange or wall 20, which is spaced from the arm to provide an annular groove for the reception of a series of antifriction-balls 21. The casing 19 is provided at its inner edge, contiguous to the arm of the bracket 6, with a plurality of tongues 22, which are bent over the edge of the outer portion of the arm of the bracket 6 and which embrace the said arm, whereby the casing is retained in position thereon. The outer portion of the bracket 6, which is circular, is provided with notches or recesses 23 for the tongues 22, whereby the casing is interlocked with the bracket 6 and is held against rotary movement on the outer portion of the arm.

The groove of the annular casing 19 cooperates with a groove 24 of a ring or hub-section 25, which is arranged within the opening of the arm of the bracket 6 and the opening of the casing, as clearly illustrated in Fig. 8 of the drawings. The annular series of antifriction-balls interlock the hub-section or ring 25 with the bracket and the casing, the tongues being the only fastening devices employed for securing the parts of the bearing in their operative position. By this construction the parts of the ball-bearing may be readily assembled. The shade-carrying brackets are designed to be constructed of sheet-steel or other suitable material, and the casing is also stamped from similar sheet metal. The inner hub-section or ring, although shown solid in the accompanying drawings, may be stamped from sheet metal without affecting the result, as will be readily understood.

The hub-section or ring is provided with a central opening 26 to receive the rotary journal 4 of the roller 1. The rotary journal may consist of a screw or other suitable fastening device, as shown in Fig. 8, and the opening 26 may be square, as shown, or of any other configuration, as it is immaterial whether the hub-section rotates on the journal or not, for the reason that the end of the roller abuts against the hub-section and does not come in contact with the casing 19. The inner side face of the hub-section is arranged substantially in the same plane as the adjacent side face of the casing 19, so that the washer or projecting portion 1^a of the roller

will abut against the hub-section. The annular series of antifriction-balls will enable the roller to run perfectly free and rotate without friction.

The adjustable shade-carrying brackets are secured to inverted-V-shaped hangers 27 and are provided at the upper edges of the arms with inner and outer ears 28 to receive the lower terminals 29 of the sides of the hangers. The lower ends of the sides of the hangers are passed through the openings of the ears and are bent against the brackets, as shown. The hangers are provided at their upper ends with eyes or loops 30 and are secured to branches 31 and 32 of an operating-cord 33, which is adapted to be adjusted to raise and lower the shade-carrying brackets. The branches of the operating-cord extend through guide openings or eyes 34 of supporting-brackets 35. The supporting-brackets 35, which are provided with guiding means for the operating-cord and which are preferably constructed of stout wire, consist of horizontal upper portions and inclined bracing portions 36, which extend upwardly from points below the inner ends of the horizontal portions to the outer portions thereof, as clearly illustrated in Fig. 2 of the drawings. The wire of the horizontal portions is curved at the inner ends of the same to form the said eyes 34, which are arranged in pairs and which depend from the horizontal portions of the supporting-brackets. The terminals of the wire are also curved to form attaching-eyes 37 and 38, through which pass suitable fastening devices for securing the supporting-brackets to the top of the window frame or casing in the position shown in Fig. 1 of the drawings. The wire of the supporting-brackets is bent or curved at the outer ends of the horizontal portions to form approximately circular loops 39, which are located beyond the upper ends of the inclined bracing portions 36 and which are adapted to support a horizontal curtain-rod 40. Lace curtains are adapted to be draped over the curtain-rod 40 and will be supported clear of the curtain, so that they will not interfere with the adjustment of the curtain-fixture.

Any suitable means may be employed for clamping the lower portion of the operating-cord 33 for securing the curtain or shade in its adjustment. The curtain or shade is raised or lowered bodily by means of the operating cord or connection 33, and the means for adjusting the curtain or shade vertically does not interfere with the raising or lowering of the curtain or shade through the rotation of the spring-actuated roller. The fixture is adapted to be readily applied to any ordinary curtain or shade, and the cam forms adjustable means for locking the spring-journal.

Having thus fully described my invention,

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

1. In a device of the class described, the combination with brackets adapted to support a window-shade, and an operating-cord having branches, of guiding means for the operating-cord consisting of supporting-brackets embodying a horizontal portion provided at its inner end with guide-eyes to receive the branches, and a bracing portion connected with the horizontal portion at the outer end thereof, said supporting-brackets being provided at the outer ends of the horizontal portions with loops or eyes for supporting a curtain-rod.

2. In a device of the class described, the combination with adjustable brackets adapted to support a window-shade, and an operating-cord having branches, of guiding means for the operating-cord consisting of supporting-brackets constructed of wire and embodying horizontal top portions coiled at their inner ends to form guide-eyes for the branches of the operating-cord, and inclined supporting portions connected with the outer ends of the horizontal portions, the wire of the supporting-brackets being coiled or looped at the contiguous ends of the horizontal and inclined portions to provide eyes for supporting a curtain-rod.

3. The combination of a bracket having an opening to receive the spring-journal of a curtain-roller, and a cam pivotally mounted on the brackets and arranged to clamp the said journal, whereby the same is rigidly secured to the bracket.

4. The combination of a bracket having a journal-receiving opening, a supporting-plate mounted on the bracket and arranged in spaced relation with the same and also provided with a journal-receiving opening, and a locking-cam pivotally mounted between the plate and the bracket in position for engaging a journal, whereby the same may be rigidly secured to the bracket.

5. The combination of a bracket adapted to support one end of a curtain-roller, a pivoted cam mounted on the bracket for engaging the journal of the curtain-roller, said cam having a slot or opening for enabling it to be engaged by a tool, and means carried by the bracket and cooperating with the cam for holding the journal.

6. In a device of the class described, the combination with a roller, of a support, an annular casing mounted on the support and fitted against one of the side faces thereof and having an interior annular groove, a ring or hub-section located within the casing and

having its inner side face arranged in substantially the same plane as the side face of the casing, whereby the end of the roller is caused to abut against the ring or hub-section, said ring or hub-section being also provided with an annular groove cooperating with the groove of the casing to form a ball-race, and antifriction-balls arranged in the said groove and retaining the ring or hub-section within the casing.

7. In a device of the class described, the combination with a roller having a projecting portion, of a support provided with an opening, an annular casing having a corresponding opening and fitted against one of the side faces of the support, said casing and support forming an annular groove, a ring or hub-section of less diameter than the openings of the support and casing and located within the same and provided with a groove, said ring or hub-section having its inner side face arranged in substantially the same plane as the side face of the casing, whereby the projecting portion of the roller is caused to abut against the hub-section, and antifriction-balls arranged in the said grooves and retaining the said ring or hub-section within the casing.

8. The combination of a bracket having an opening and provided with notches, a casing provided with tongues arranged in the notches and engaging the bracket, said casing being also provided with an opening, a ring or hub-section of a size to pass through the said openings and provided with a groove, and antifriction-balls arranged within the casing and extending into the groove of the ring or hub-section, whereby the latter is retained in position.

9. In a device of the class described, the combination with brackets adapted to support a window-shade, and an operating-cord, of guiding means for the operating-cord consisting of a supporting-bracket embodying a horizontal portion provided at its inner end with guide-eyes and inclined bracing portions connected with the horizontal portion at the other end thereof, an eye formed at the juncture of the horizontal and inclined portions for supporting a curtain-rod, and attaching-eyes at the inner ends of the said portions.

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

JOHN RENNER.

Witnesses:

S. D. BLANKE,
P. H. ERICKSEN.