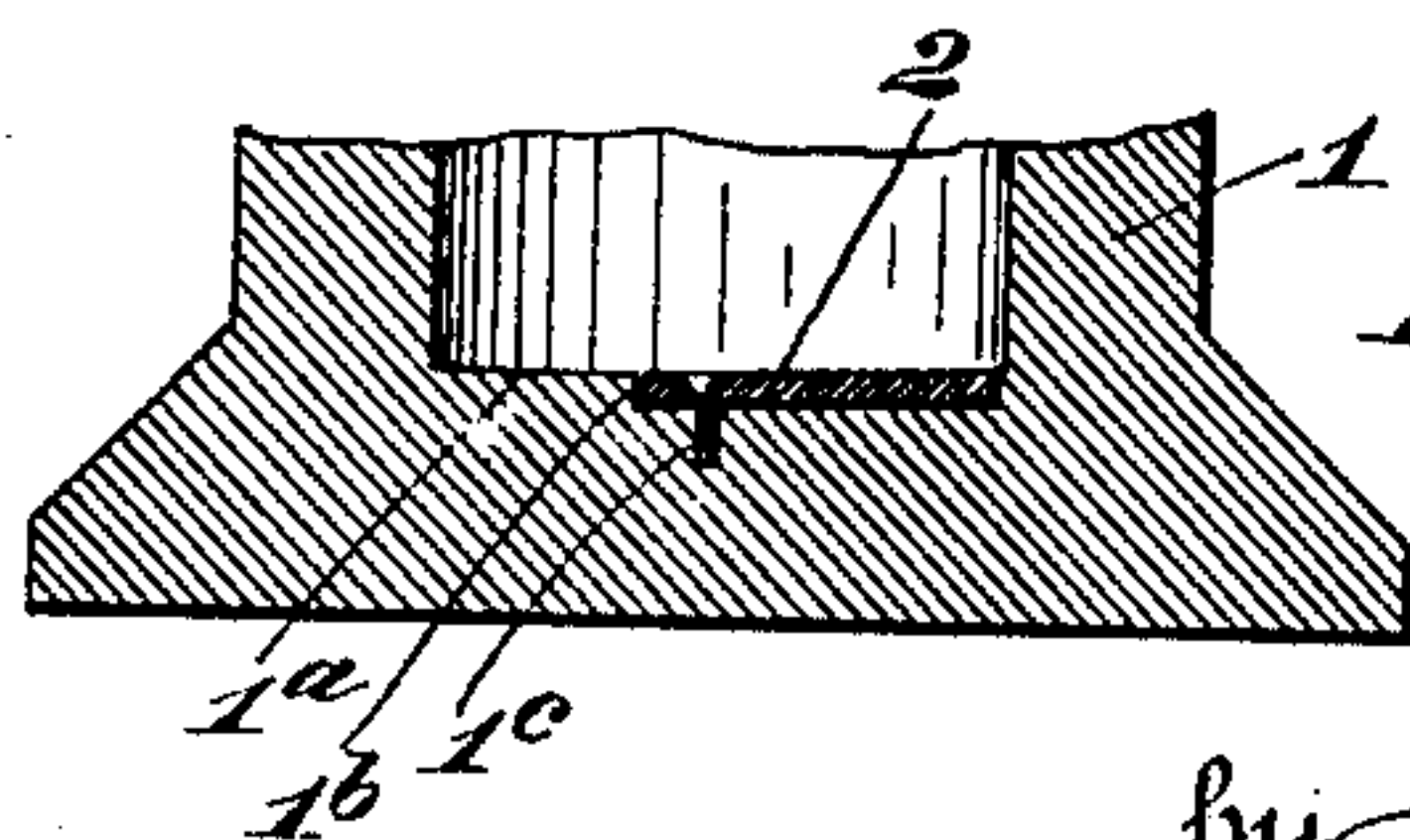
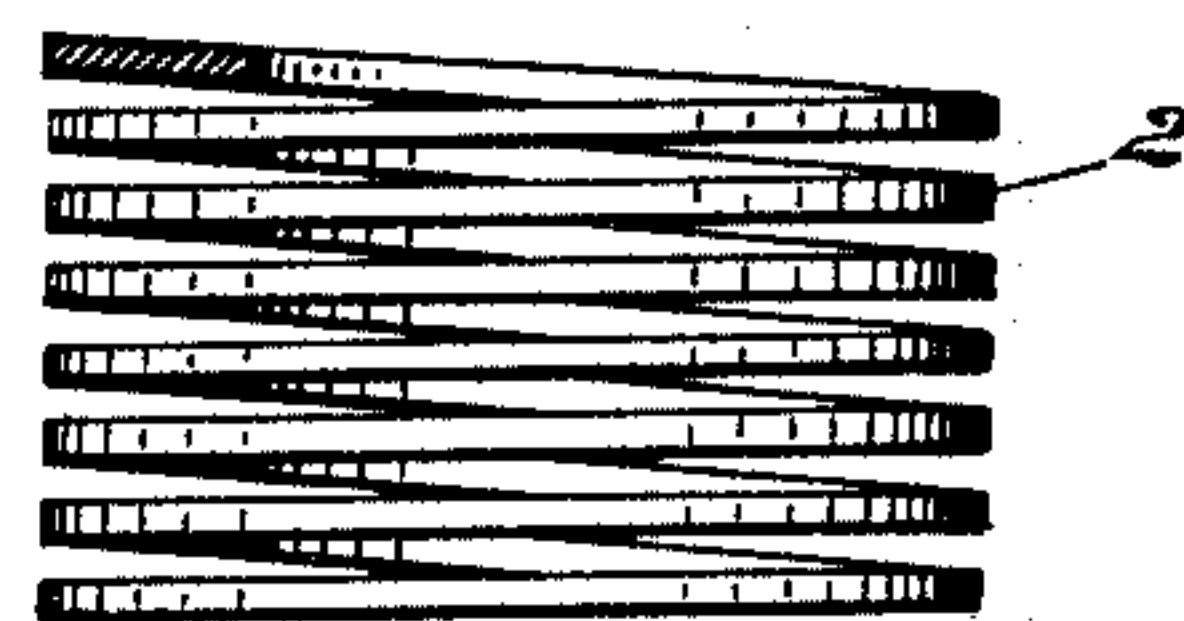
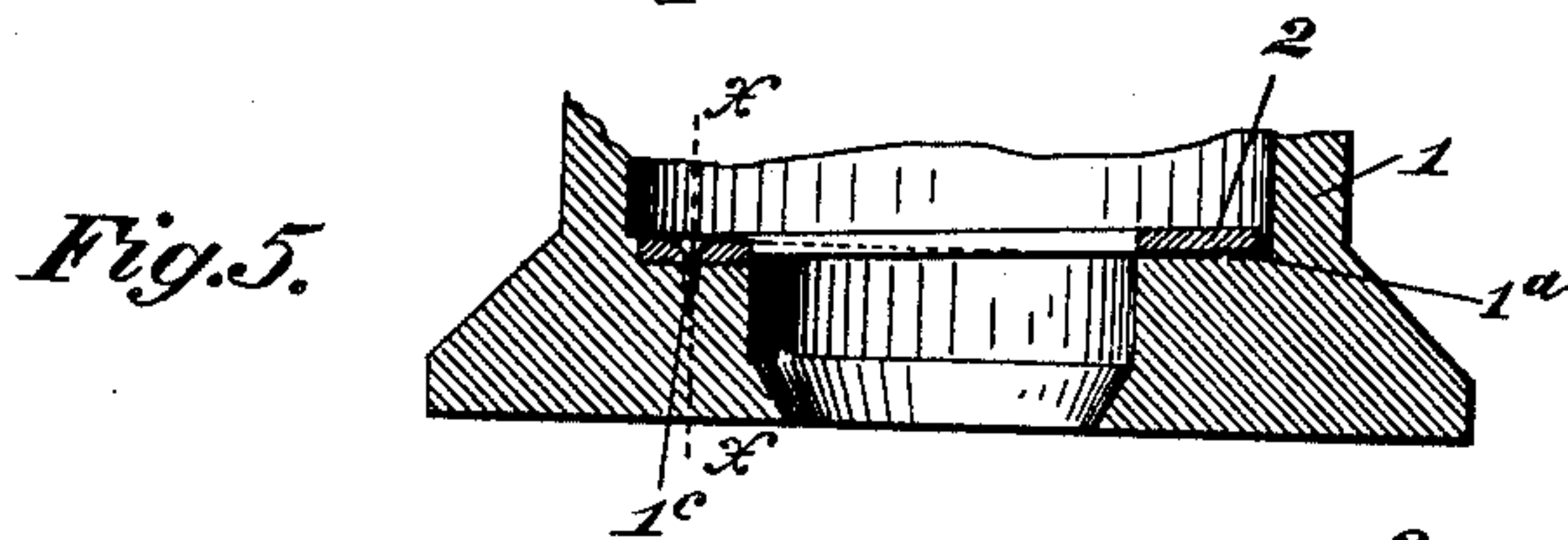
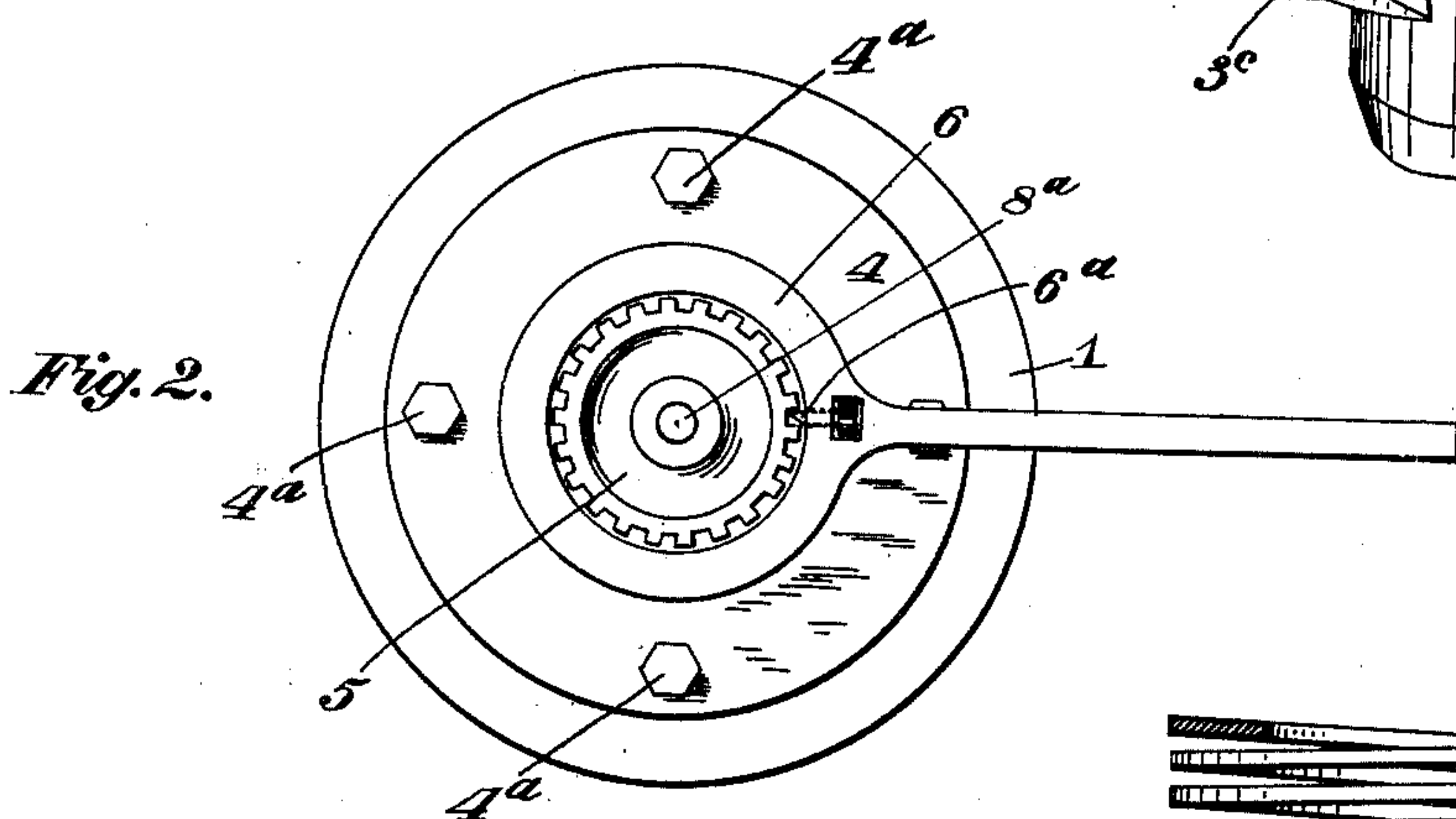
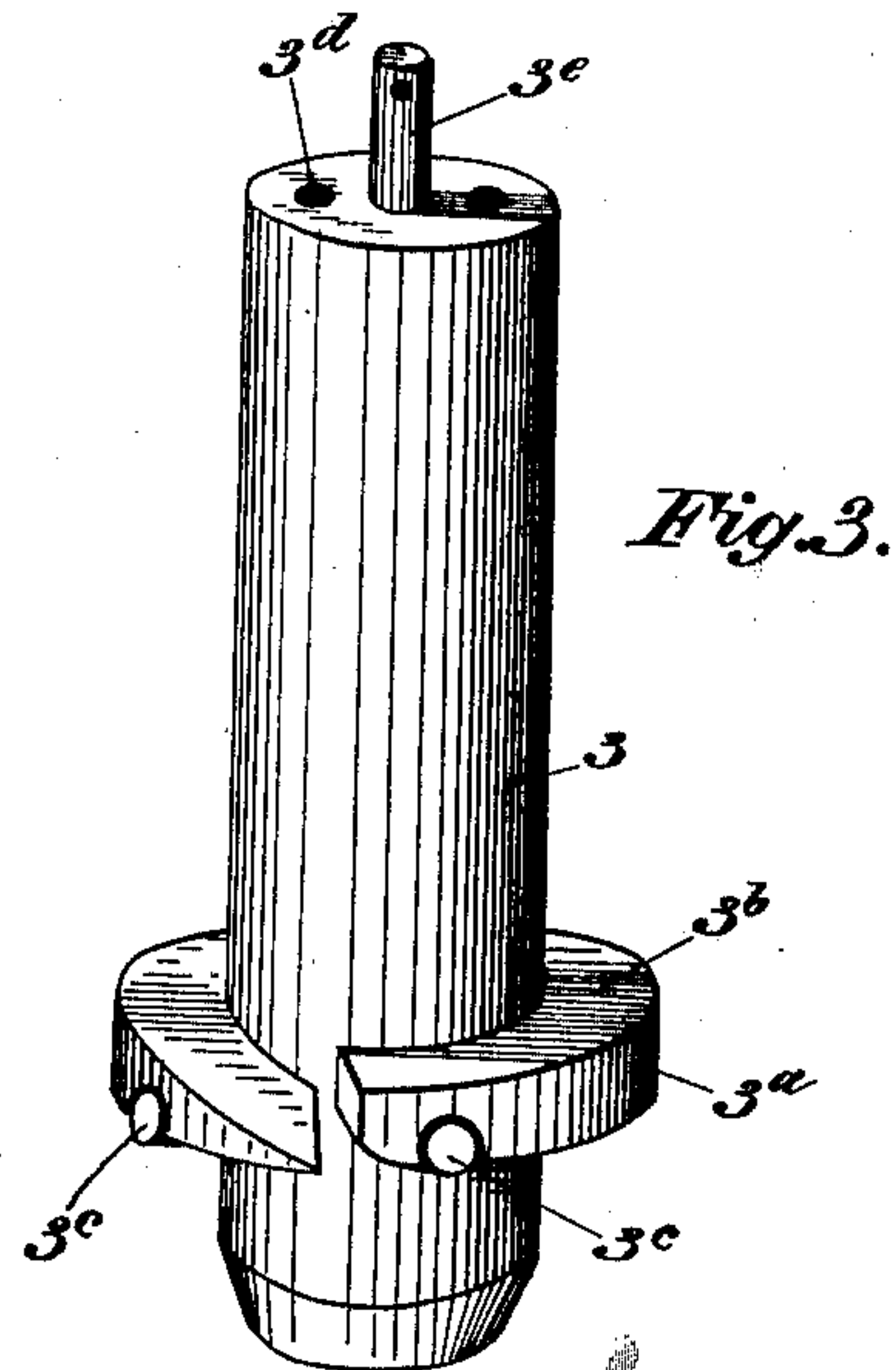
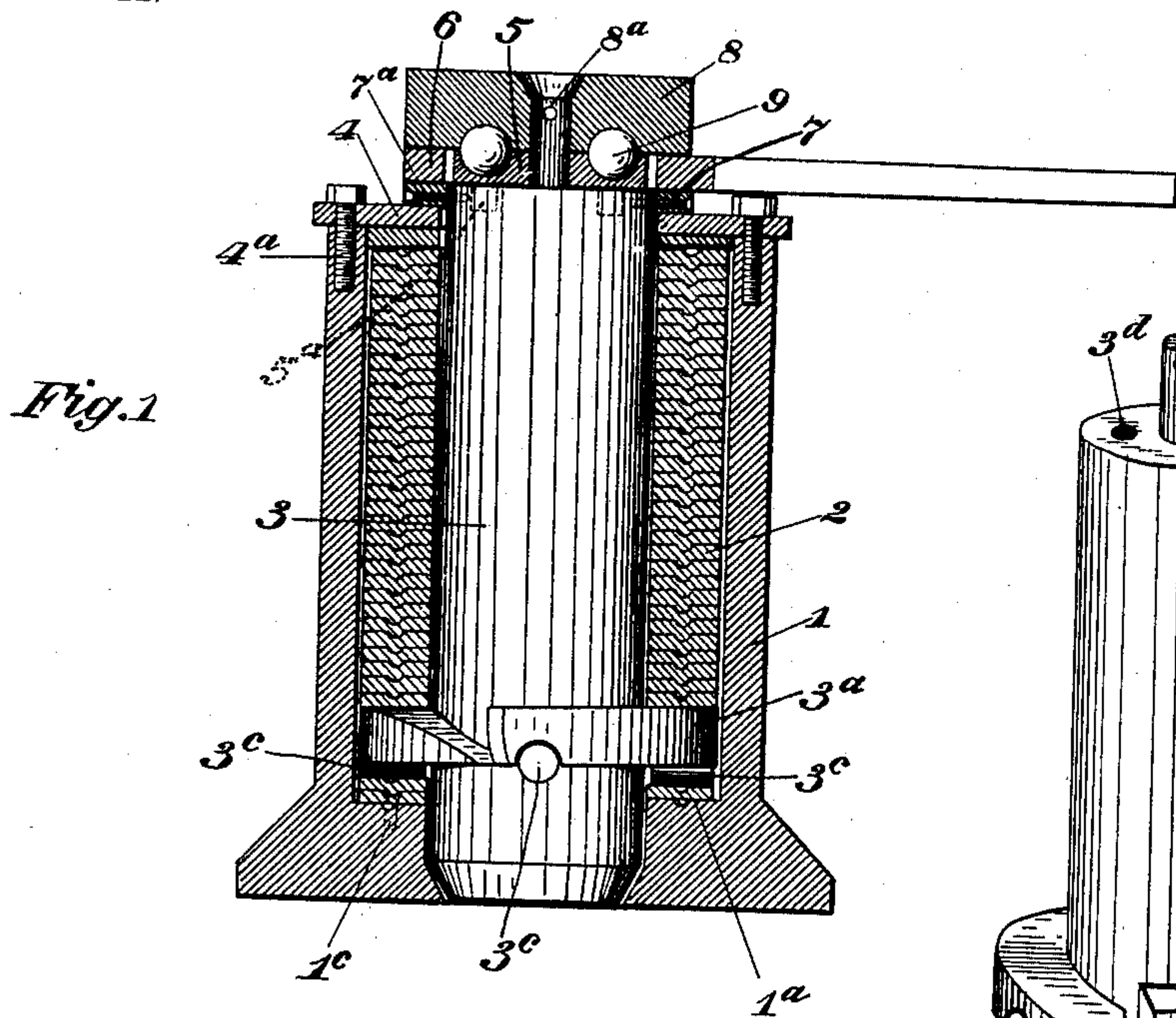


No. 756,489.

PATENTED APR. 5, 1904.

M. L. GASKILL.
SCREW LIFTING JACK.
APPLICATION FILED OCT. 14, 1903.

NO MODEL.



Witnesses

Benj. Finckel
D. A. Wright

Inventor

Marion L. Gaskill

By Finckel & Finckel
his Attorneys

UNITED STATES PATENT OFFICE.

MARION L. GASKILL, OF COLUMBUS, OHIO, ASSIGNOR OF ONE-HALF TO
JEREMIAH S. CLOUD, OF COLUMBUS, OHIO.

SCREW LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 756,489, dated April 5, 1904.

Application filed October 14, 1903. Serial No. 177,017. (No model.)

To all whom it may concern:

Be it known that I, MARION L. GASKILL, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Screw Lifting-Jacks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to lifting-jacks of the screw variety. Heretofore, so far as I am aware, the thread of the screw in the body portion of the jack has ordinarily in practice been an integral rigid part thereof. In such case the jack is expensive because of the tedious process of cutting the screw. Moreover, one pitch only of the thread was had to one cylinder or body. Also in the old ordinary form there is great friction to be overcome because of the intimate and extensive contact of the externally-threaded load-supporting spindle with the internally-threaded cylinder or jack-body. Sometimes also the thread of the cylinder or spindle, because of its comparative shallowness, was stripped under the stress of a heavy load.

The object of the present invention is to overcome the objections stated and to provide an improved jack-body with an improved removable and flexible thread, which shall be of flat tape-like form, so that a thread of different pitch can be substituted and the thread be made as wide or deep as desired to afford an extended strong supporting-surface for the spindle and for the coils themselves and to provide a load-supporting spindle or part adapted to run on said thread with less friction than was involved in the operation of the old construction.

The invention is embodied in the combination of a jack body or receptacle, a movable spirally-wound flexible, flat, or tape-like thread secured thereto, and a load-support provided with a projection to engage and travel between the coils of said thread.

The invention is also embodied in details of construction, all of which are hereinafter described, and pointed out in the claims.

In the accompanying drawings, illustrating one embodiment of the invention, Figure 1 is a central vertical sectional view of the jack, parts being shown in full. Fig. 2 is a plan view of the upper end. Fig. 3 is a perspective view of the load-supporting spindle. Fig. 4 shows a fraction of a coil of tape constituting a thread, it being stretched a little. Fig. 5 is a fragmentary view showing how the lower coil is attached to the cylinder, the attached end being in end view. Fig. 6 is a section on the line $x-x$, Fig. 5, further illustrating the same thing, the attached end being in side view.

In the several views, 1 designates the cylinder or jack-body. This is made with a shoulder 1^a near the lower end of its interior and to which the tape constituting the thread is attached. The thread (which is designated 2) consists of a tape or band of flat steel or other hard metal wound into the form of a cylindrical coil. The tape can be made with a longitudinal corrugation, the convex part of the corrugation of one coil fitting in the concave corrugation of the one next to it to prevent any tendency of the coils in the operation of the device to dislocate laterally and bind either on the cylinder or the load-supporting spindle. The upper surface of the shoulder 1^a is preferably spiral, starting from a small vertical shoulder 1^b , the end of the tape being fastened near the shoulder 1^b by means of a screw 1^c , so as to lie at its end substantially flush with the surface 1^a .

3 designates the load-supporting spindle. This is furnished at its lower end with a projecting portion 3^a , resembling somewhat a section or one turn of a thread—that is, it has an inclined upper surface 3^b terminating in ends one above the other, said ends being somewhat wedge-shaped to facilitate the division of the coils and the progress of the projection between them. The projection is shown to be made thick and strong to bear

the weight of the imposed load. To relieve the friction of the spindle on the coil, anti-friction-rollers 3^c are placed radially in pockets at the under side of the projection 3^a.

5 4 designates a ring removably secured by screws 4^a to the upper end of the cylinder 1 to hold the thread or coil within the cylinder. The upper end of the coil is preferably left free and unattached to anything. Attached
10 by pins 5^a entering holes 3^d in the upper end of the load-supporting spindle is a ratchet 5, adapted to be engaged by a pawl 6^a in a handle 6, turning about the ratchet. The pawl is preferably of the reversible kind and spring-
15 actuated, of any approved construction, so that by oscillating the handle the spindle can be turned in one direction or the other, according to the position of the pawl. The handle is supported in place so as to move upward
20 and downward with the spindle by means of a keeper-ring 7, secured to the spindle by pins 7^a passed through the ring into the spindle.

8 designates a cap which is placed above the ratchet and held there by a pin 8^a passing horizontally through the cap and through
25 a hole in a pin 3^e, fixed on the upper end of the spindle 3. Antifriction-balls 9 can be seated in grooves in the opposing faces of the cap and ratchet. The cap is of sufficient diameter to project over the ring of the pawl-carrying handle 6 to hold the latter down in
30 place and in horizontal position.

From the construction shown and described it is obvious that the thread can be removed
35 and another of thicker or thinner material substituted, or if the thread should be broken or damaged another of the same kind can be inserted without loss of the jack-body.

As the load-supporting spindle rises the
40 coils below close on each other, and hence the weight of the load lifted is constantly borne by the shoulder 1^a and the thick strong projection on the spindle.

Modifications in the forms of the parts

shown can be made without departing from 45 the gist of the invention.

In Fig. 4 I have illustrated the tape as uncorrugated. This form can be used.

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

1. In a screw-jack, the combination of a jack body or receptacle, a flexible thread of flat tape-like form attached thereto, and a spindle to support the load having a projection to engage said thread. 50

2. In a screw-jack, the combination of a jack body or receptacle, a removable thread of flat tape-like form attached thereto, and a spindle to support the load having a projection to engage said thread. 55

3. In a screw-jack, the combination of a jack body or receptacle, a thread attached thereto consisting of a coiled flexible tape having a longitudinal corrugation, and a load-supporting spindle having a projection to engage
60 said thread. 65

4. In a screw-jack, the combination of a jack body or receptacle, a flexible thread therein, a load-supporting spindle having a projection to engage said thread said projection being provided with antifriction-rollers. 70

5. In a screw-jack, the combination of a jack body or receptacle, a flexible thread therein, a load-supporting spindle 3, a projection 3^b on the lower portion of said spindle to engage said thread, a ratchet 5 secured on the upper portion of said spindle, a pawl-containing lever for operating said ratchet, a keeper-ring 7 for said lever, a load-supporting cap supported on the spindle on antifriction-bearings above the ratchet, said ratchet and spindle being rotatable independently of the cap. 75

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

MARION L. GASKILL.

Witnesses:

WALTER HAMILTON,
GEO. M. FINCKEL.

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