

No. 812,182.

PATENTED FEB. 13, 1906.

L. P. CHUTE.
AUTOMATIC STAY RELEASE.
APPLICATION FILED JULY 20, 1905.

2 SHEETS—SHEET 1.

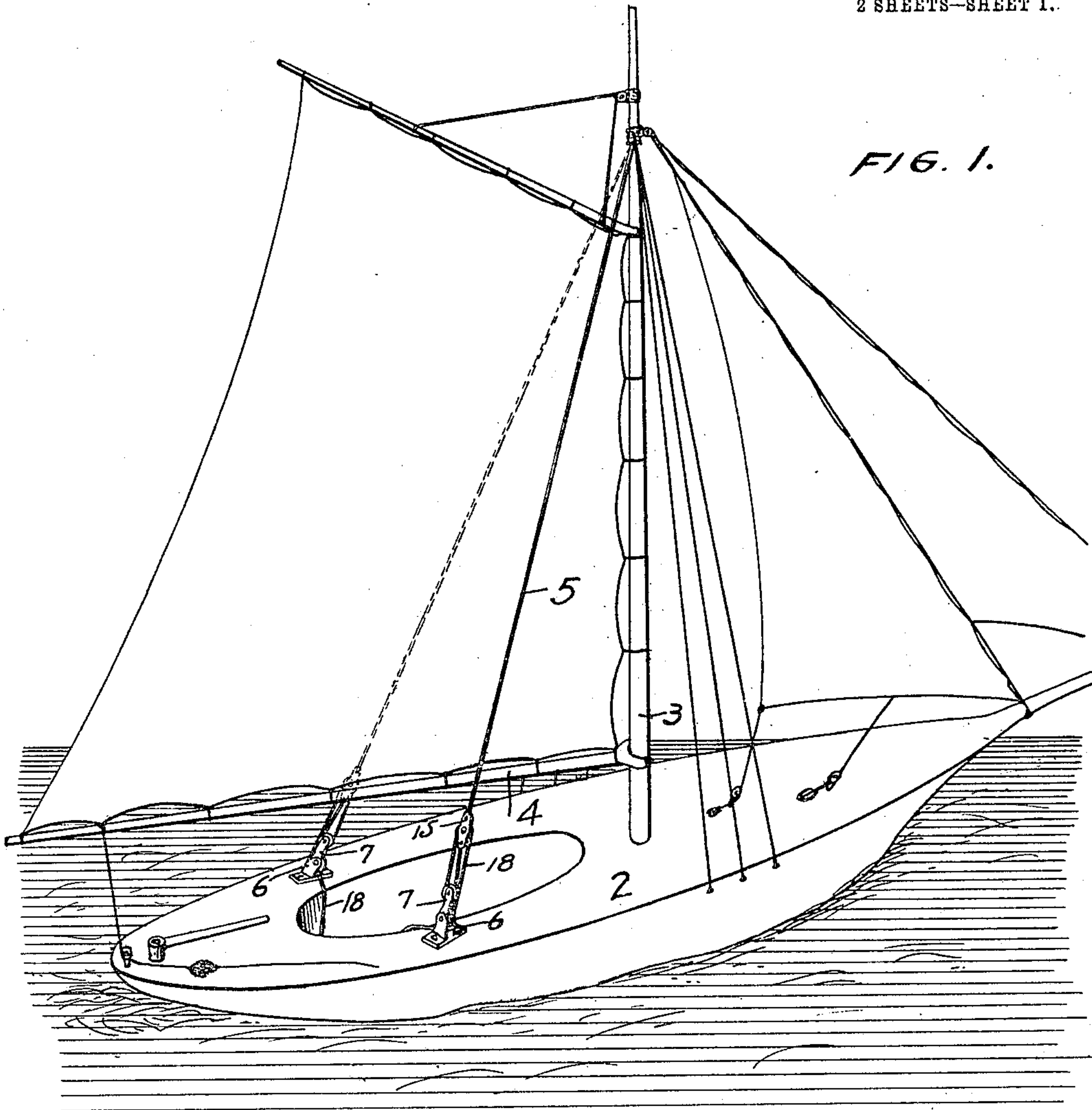
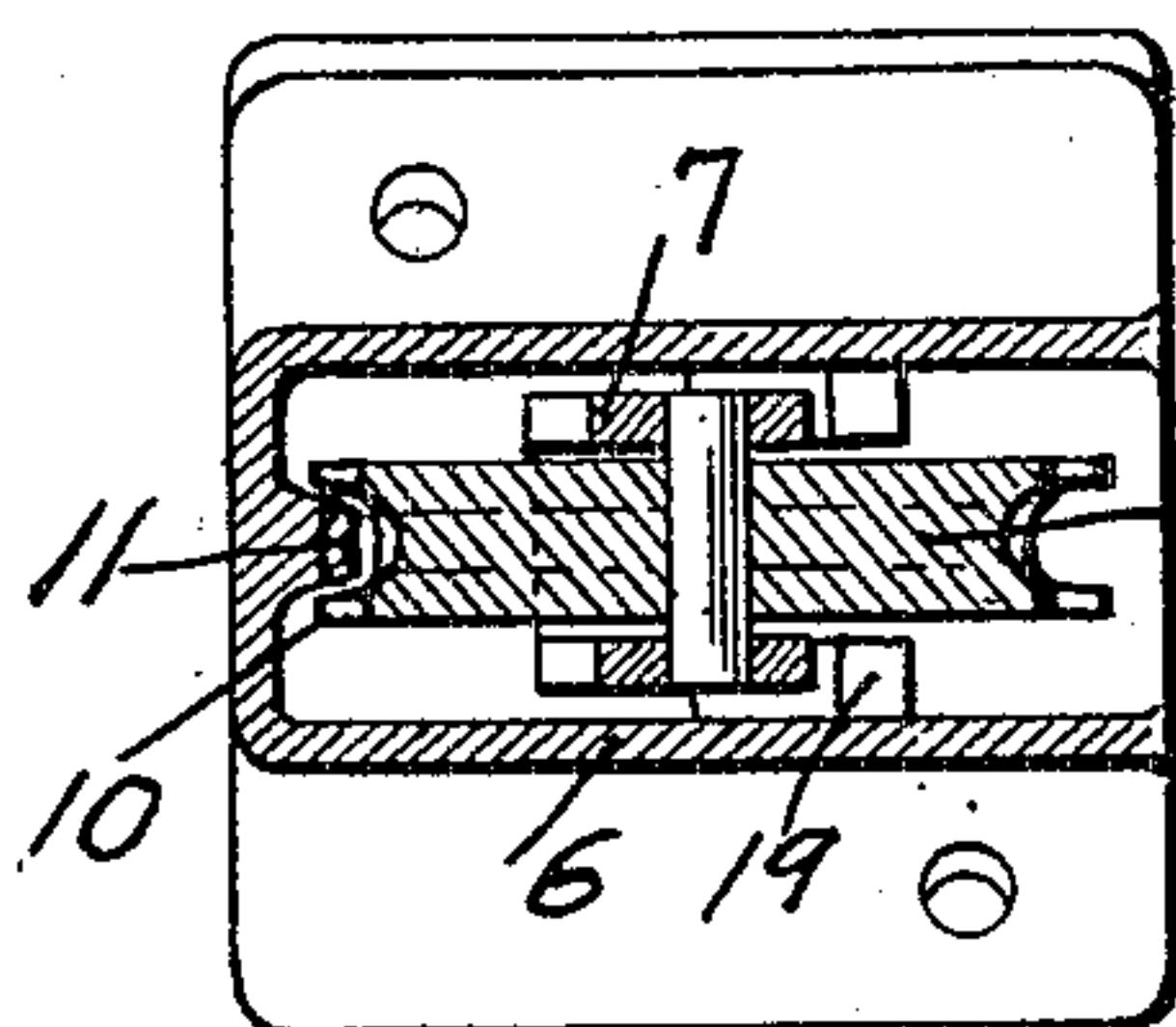


FIG. 1.

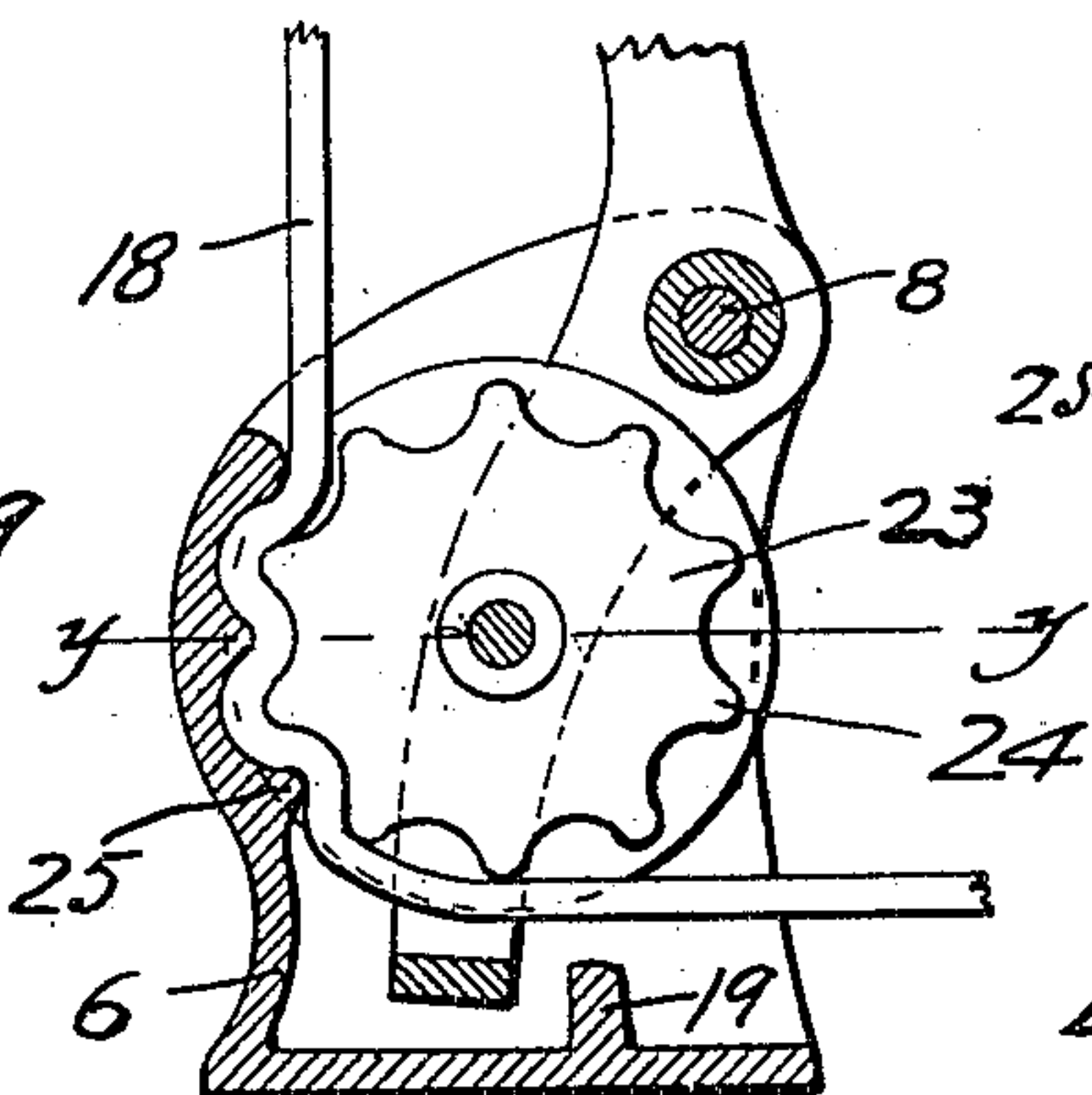
FIG. 8.

FIG. 9.

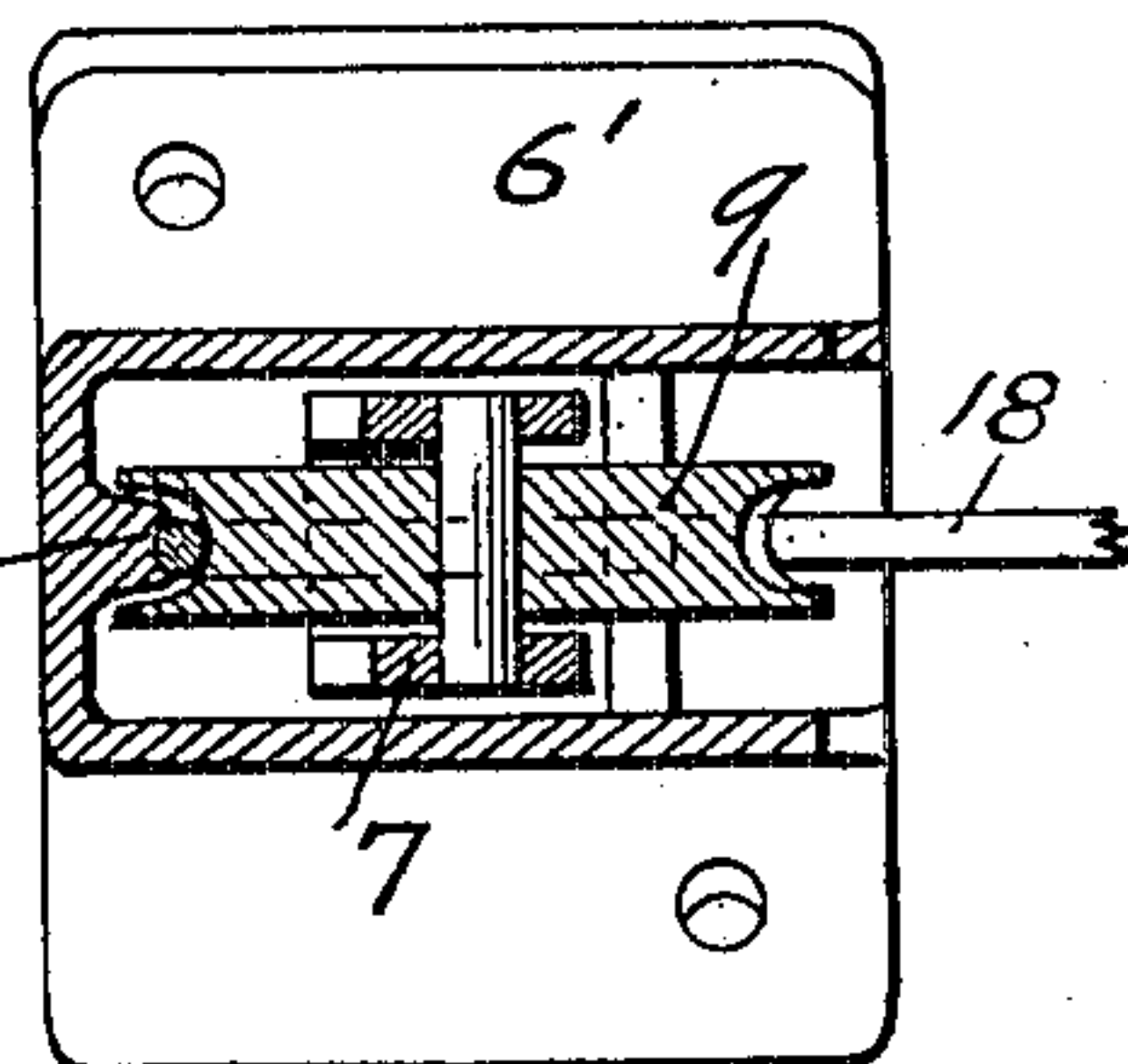
FIG. 7.



WITNESSES
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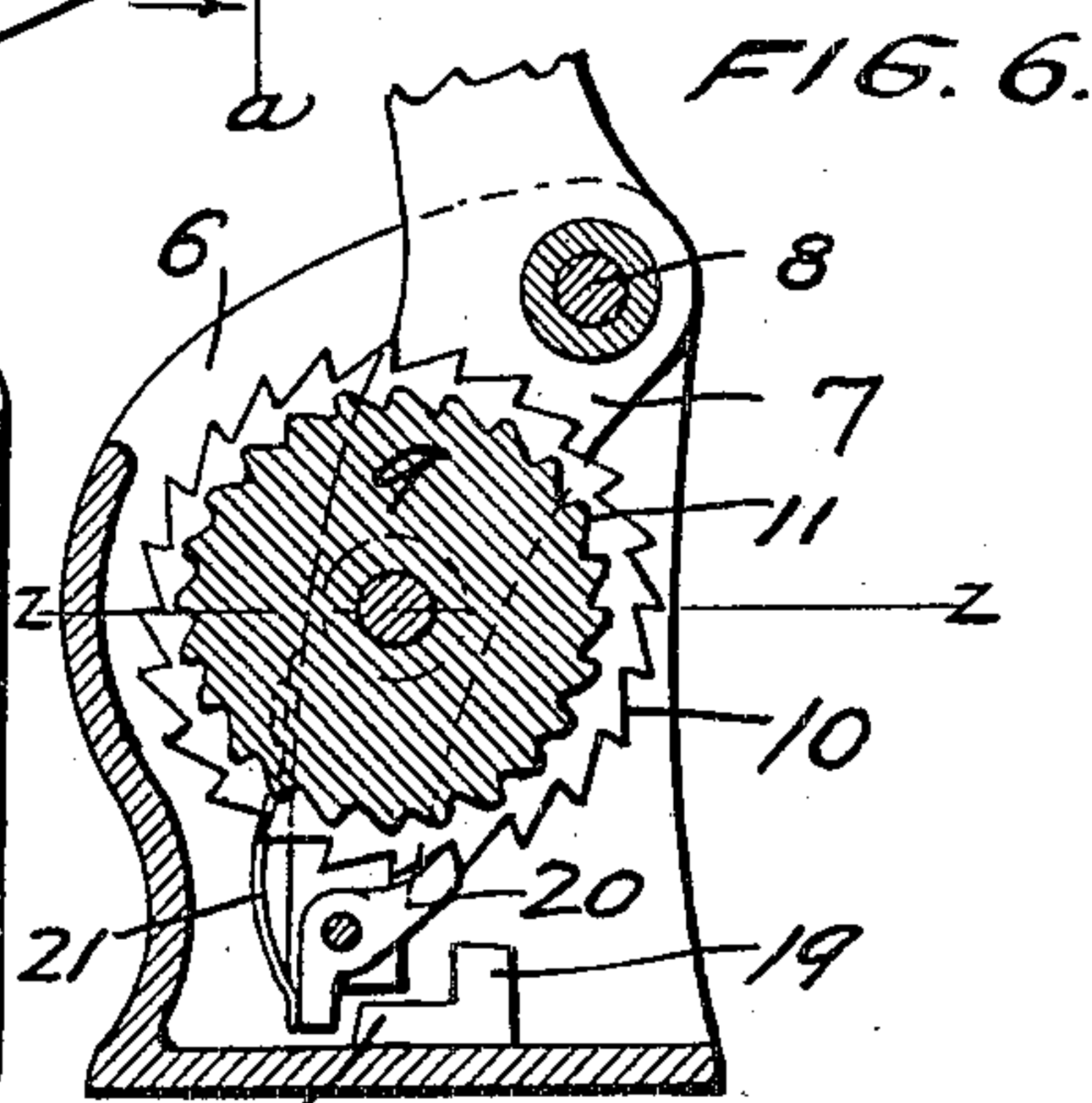
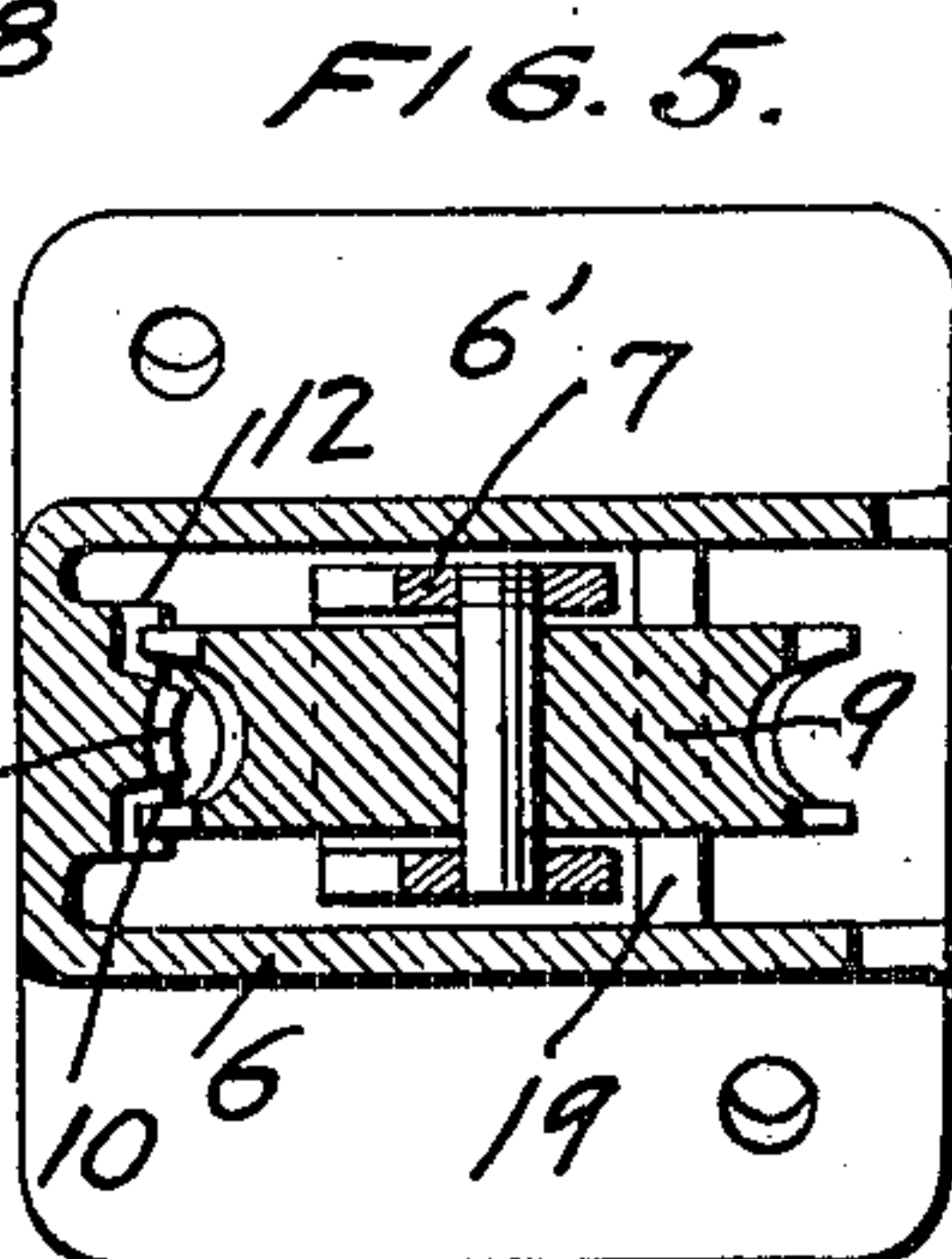
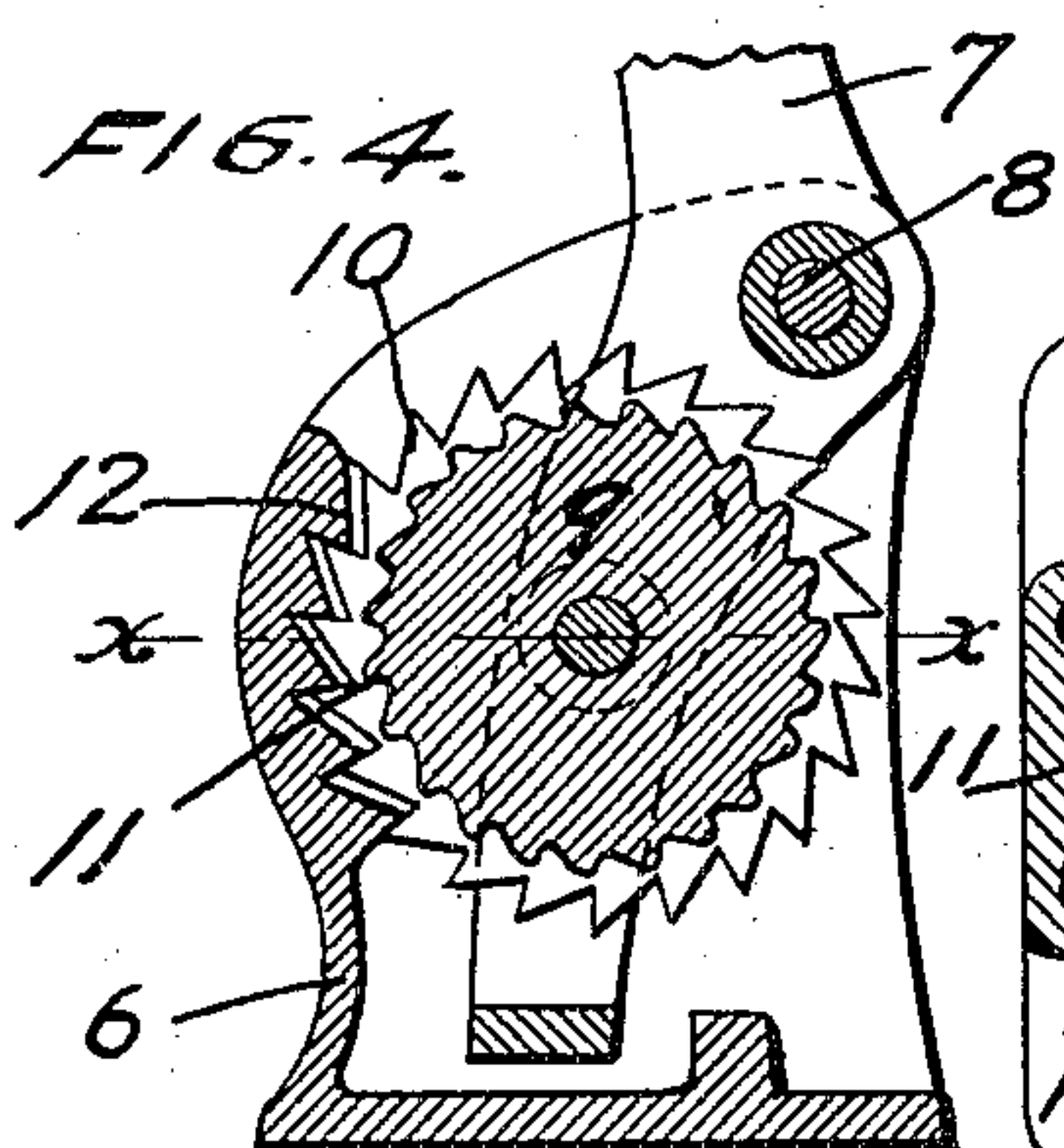
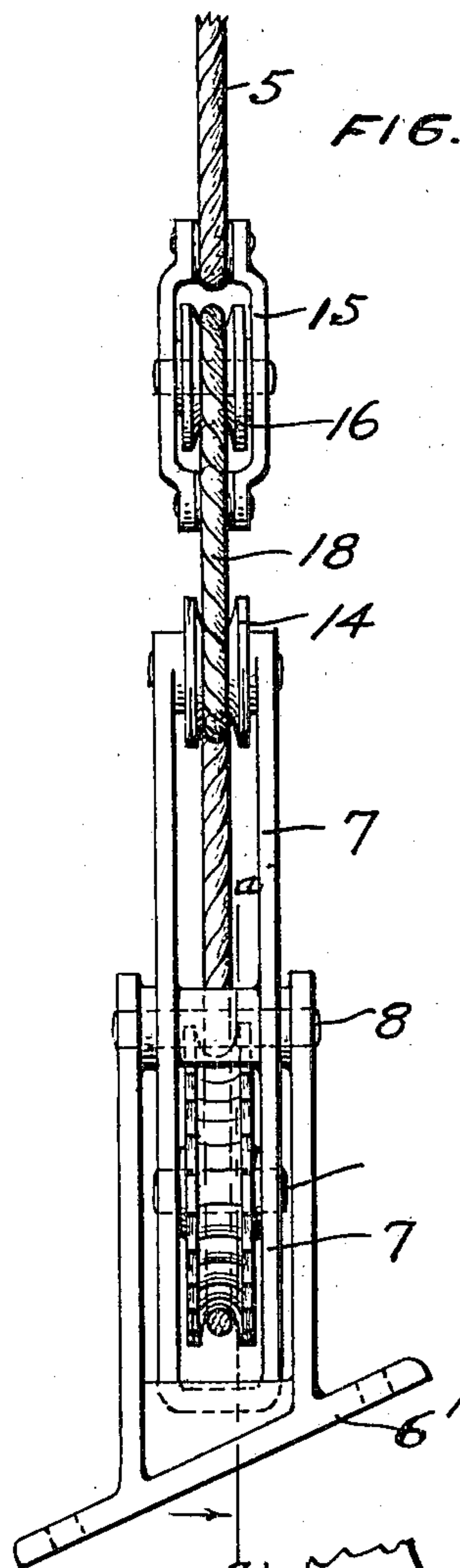
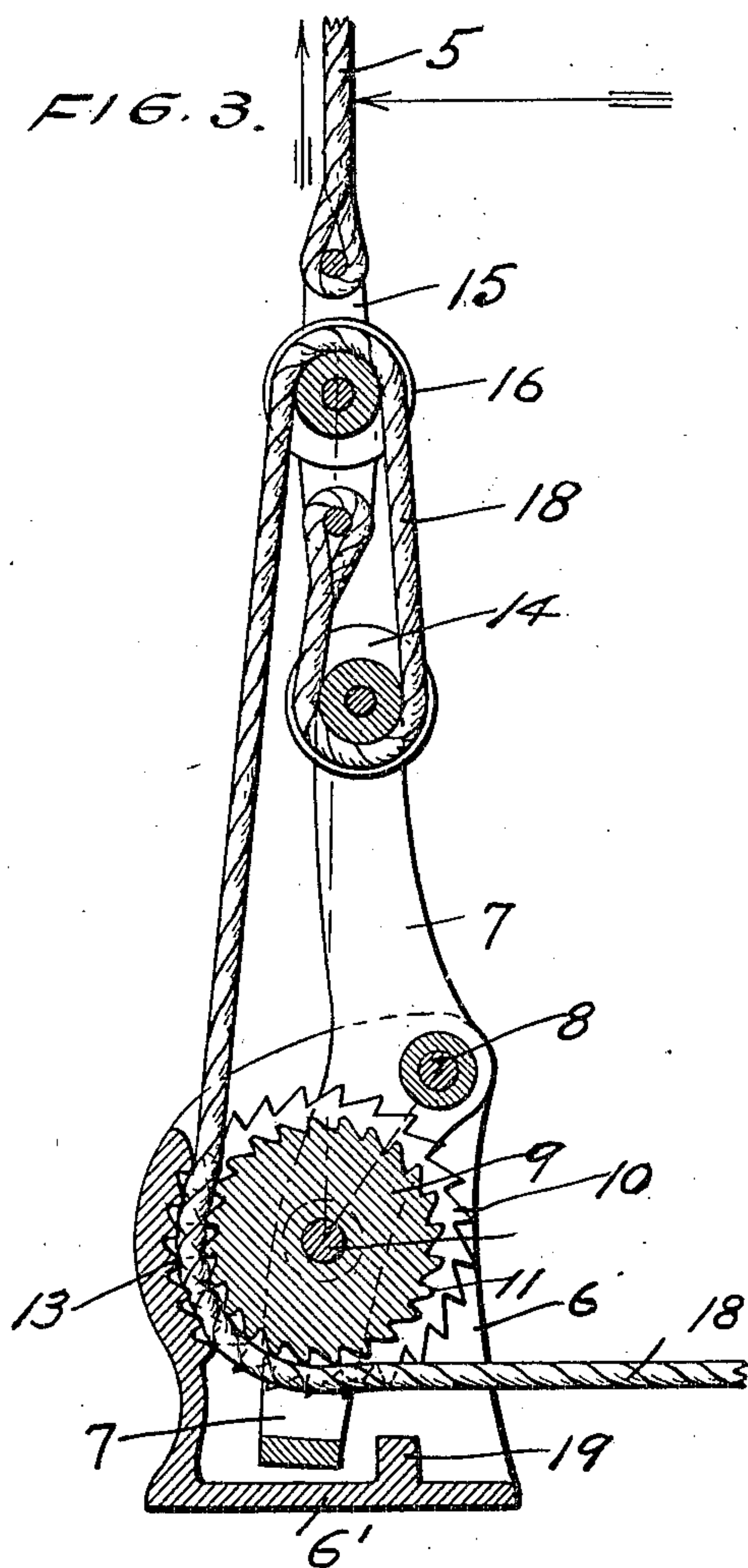
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2 SHEETS—SHEET 2.



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AUTOMATIC STAY-RELEASE.

No. 812,182.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed July 20, 1905. Serial No. 270,446.

To all whom it may concern:

Be it known that I, LOUIS P. CHUTE, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Automatic Stay-Releases, of which the following is a specification.

The object of my invention is to avoid the labor and delay in releasing a stay or guy rope, and particularly the backstay of a sail-boat, and the danger arising from such delay through the ordinary means for securing the stay to the deck of a boat.

The invention consists generally in automatically releasing a stay when pressure is applied laterally thereto.

Further, the invention consists in providing means for instantly and automatically releasing a sail-boat backstay when it is struck by the boom, as in jibing.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a sail-boat having backstays with my invention applied thereto. Fig. 2 is a detail edge view of a backstay-securing means. Fig. 3 is a vertical sectional view of the securing means. Fig. 4 is a detail sectional view of the rotary locking device with the rope removed. Fig. 5 is a sectional view on the line *xx* of Fig. 4. Fig. 6 is a detail sectional view showing a modified construction. Fig. 7 is a sectional view on the line *zz* of Fig. 6. Fig. 8 illustrates still another modification. Fig. 9 is a sectional view on the line *yy* of Fig. 8.

In the drawings, 2 represents a sail-boat; 3, the mast; 4, the boom; and 5 the backstays, which connect the upper portion of the mast with the deck of the boat. Two backstays are employed, one on each side of the boat, but only one is used at a time, and which one depends upon the position of the boom. It has been customary to secure the backstay by passing it through or around a cleat or ring in the deck; but such securing means has been found to be objectionable, owing to the difficulty of releasing the stay quickly and the danger of having it securely fastened when the boom swings around against it, as in jibing. To avoid the necessity of securing the backstay in the ordinary way, I provide a casing or housing 6, preferably of cast metal, having a suitable base 6' secured to the deck of the boat in any suitable way. Within the housing I provide an oscillating frame 7, journaled on a pin 8 at a point intermediate to its ends in the upper part of

said housing. A wheel 9 is mounted near the lower end of said frame and is provided on each or either side with ratchet-teeth 10 and intermediate teeth 11, which are lower and nearer the axis of the wheel than the said ratchet-teeth. Fixed teeth 12 and 13 are provided in the walls of the housing and arranged to cooperate with the teeth 10 and 11, the ratchet-teeth on the wheel being normally in engagement with the corresponding teeth on the housing when the device is in use. A sheave 14 is mounted in the upper end of said frame, and a pulley-block 15, having a pulley 16, is attached at one end to the backstay 5, which extends to the upper portion of the mast, and at its other end the block 15 is connected to a rope 18, which passes down under the sheave 14, thence up over the pulley 16 and down between the wheel 9 and the wall of the housing, the teeth 11 and 13 being arranged to cooperate with one another and grip the rope between them and hold it firmly against accidental slipping. The pivot 8, as shown in Fig. 3, is out of line with the direction of strain on the frame from the stay 5, and consequently the lower end of said frame will be swung by the strain of the stay toward the toothed wall of the housing, and the rope inserted between said wall and the wheel 9 will be held securely as long as there is any strain on the stay. The use of the sheave and pulley in connection with the rope 18 reduces very materially the strain on the rope where it passes between the toothed wheel and the wall of the housing, and this pull or strain can be further lessened by the addition of other sheaves and pulleys, if necessary. In tightening the stay the sailor will pull on the rope 18 until the desired degree of tension on the stay is obtained, and when this has been done the engagement of the toothed wheel with the rope 18 will secure it until the stay 5 is struck by the boom. At that time the force or momentum of the boom will bend the stay and swing the frame on its pivot and move the toothed wheel away from the wall of the housing, whereupon the wheel will be allowed to revolve and the rope 18 will be released, and the stay will instantly and automatically become loose or slack. A stop 19 is preferably provided in the bottom of the housing to engage the oscillating frame and limit movement of the same.

In Fig. 6 I have shown a slight modification of the device, which consists in providing a dog 20 in the lower portion of the frame

and held in engagement with the ratchet-teeth 10 by a spring 21 and arranged to be tripped by a fixed stop 22 in the bottom of the housing. In other respects this modification corresponds to the form of device first described.

In Figs. 8 and 9 I have shown another modification, which consists in providing a wheel 23 with the ratchet-teeth omitted and provided with a series of blunt rounded teeth 24, which cooperate with similar teeth 25 in the wall of the housing. The rope when inserted between the wheel and the housing will assume the serpentine form shown in Fig. 8 and be gripped or pinched between the teeth of the wheel and those on the housing and be held securely until such time as the frame supporting the wheel is oscillated by the engagement of the boom with the stay. The manner of putting the stay under tension with this modification is the same as described with reference to the form of device shown in Figs. 2 and 3. With this attachment the backstay can be easily and quickly tightened preparatory to sailing and will be held securely until such time as the boom swings around and strikes the stay, and then when it is usually necessary to laboriously disengage the stay from a cleat or ring this attachment will automatically and instantly release it.

While designed primarily for use on a sail-boat, the device may be utilized wherever it is desired to provide an automatic and instantaneous release for a stay or guy rope or wire.

I claim as my invention—

1. The combination, with a mast and stay, of means for automatically releasing said stay when pressure is applied laterally thereon, substantially as described.

2. In a sail-boat, the combination, with the

mast and boom, of a backstay, and means inserted into said stay and adapted to automatically release the same when the stay is struck by said boom, substantially as described.

3. The combination, with a sail-boat deck and mast and the boom, of a backstay, a housing, a frame pivoted therein, a toothed wheel mounted in said frame, a rope connected with said stay and normally held between said wheel and said housing and adapted to be released when said frame is oscillated, substantially as described.

4. The combination, with a sail-boat deck and mast, of a backstay, a housing, an oscillating frame mounted therein, a wheel carried by said frame and provided with a series of ratchet-teeth on each side and lower intermediate teeth, the wall of said housing being provided with teeth to engage with said ratchet-teeth and cooperating with the teeth between them, and a rope carried by said frame and connected with said stay and passing between the wall of said housing, and the intermediate teeth on said wheel and the pivot of said frame on said housing being out of line with the axis of said wheel and said stay, substantially as described.

5. The combination, with a mast and backstay, a housing, an oscillating frame mounted therein, a wheel carried by said frame, a rope connected with said stay and arranged to pass between said wheel and the wall of said housing and be gripped and held thereby, and the pivot of said frame being out of line with the axis of said stay, substantially as described.

In witness whereof I have hereunto set my hand this 15th day of July, 1905.

LOUIS P. CHUTE.

Witnesses:

RICHARD PAUL,
C. MACNAMARA.