

No. 827,198.

PATENTED JULY 31, 1906.

B. WATTS.  
NUT LOCK.

APPLICATION FILED DEC. 18, 1905.

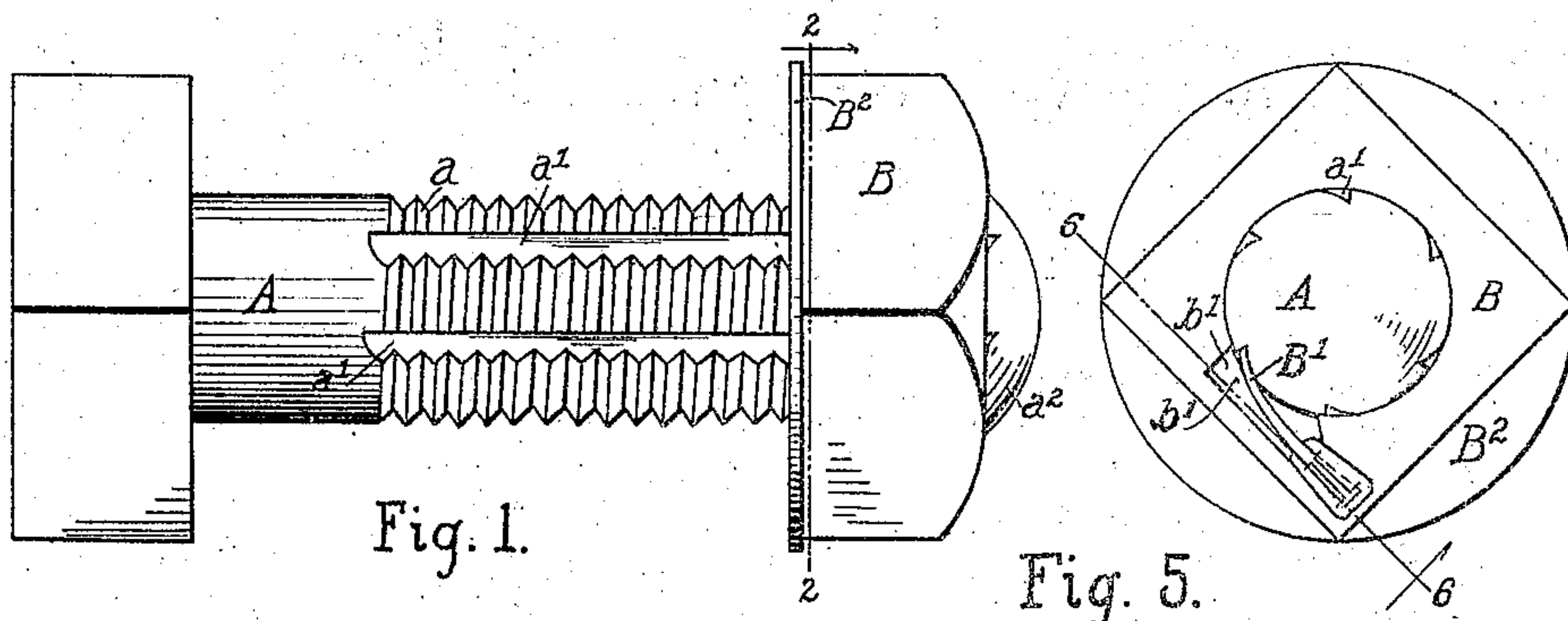
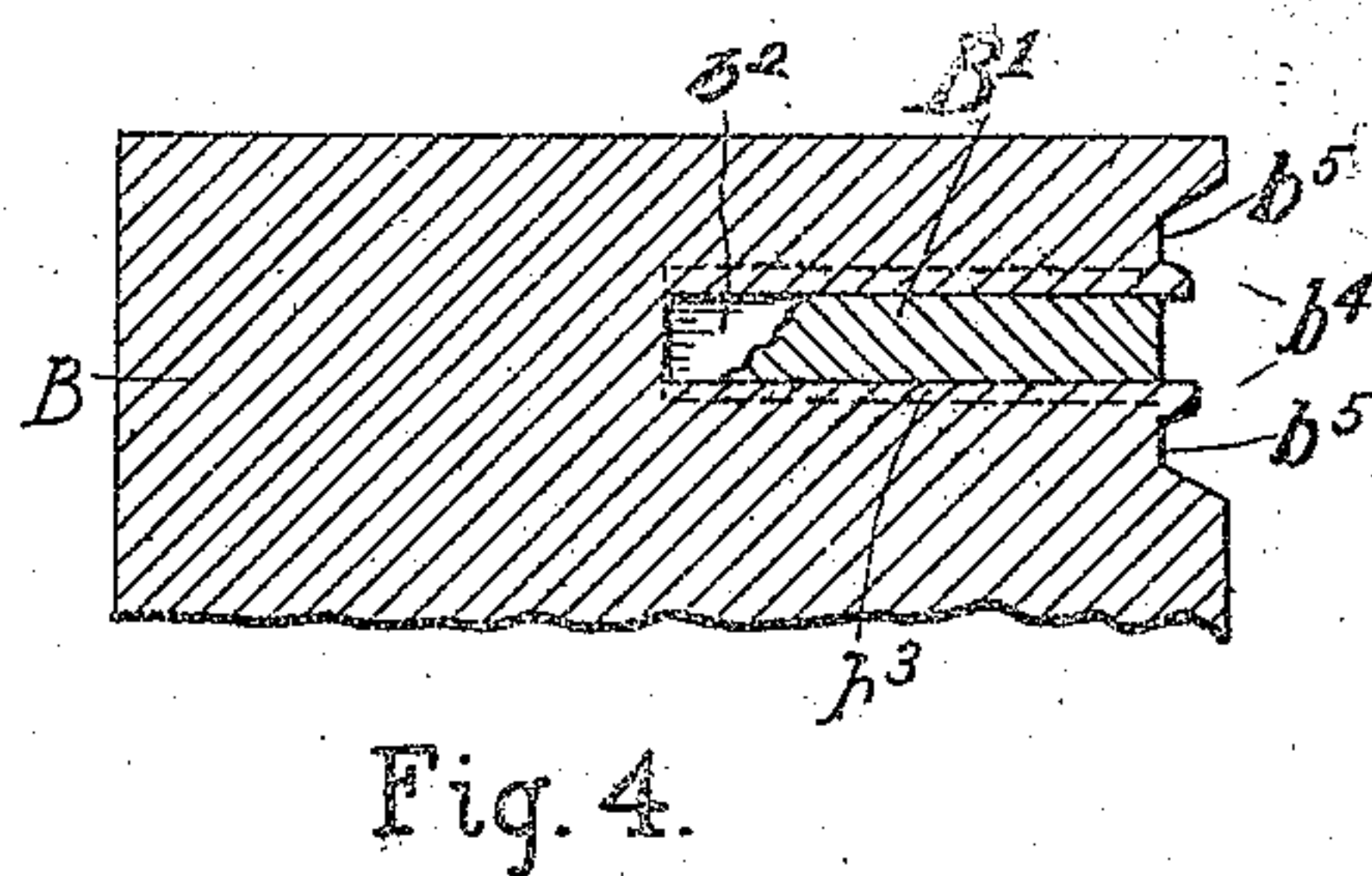
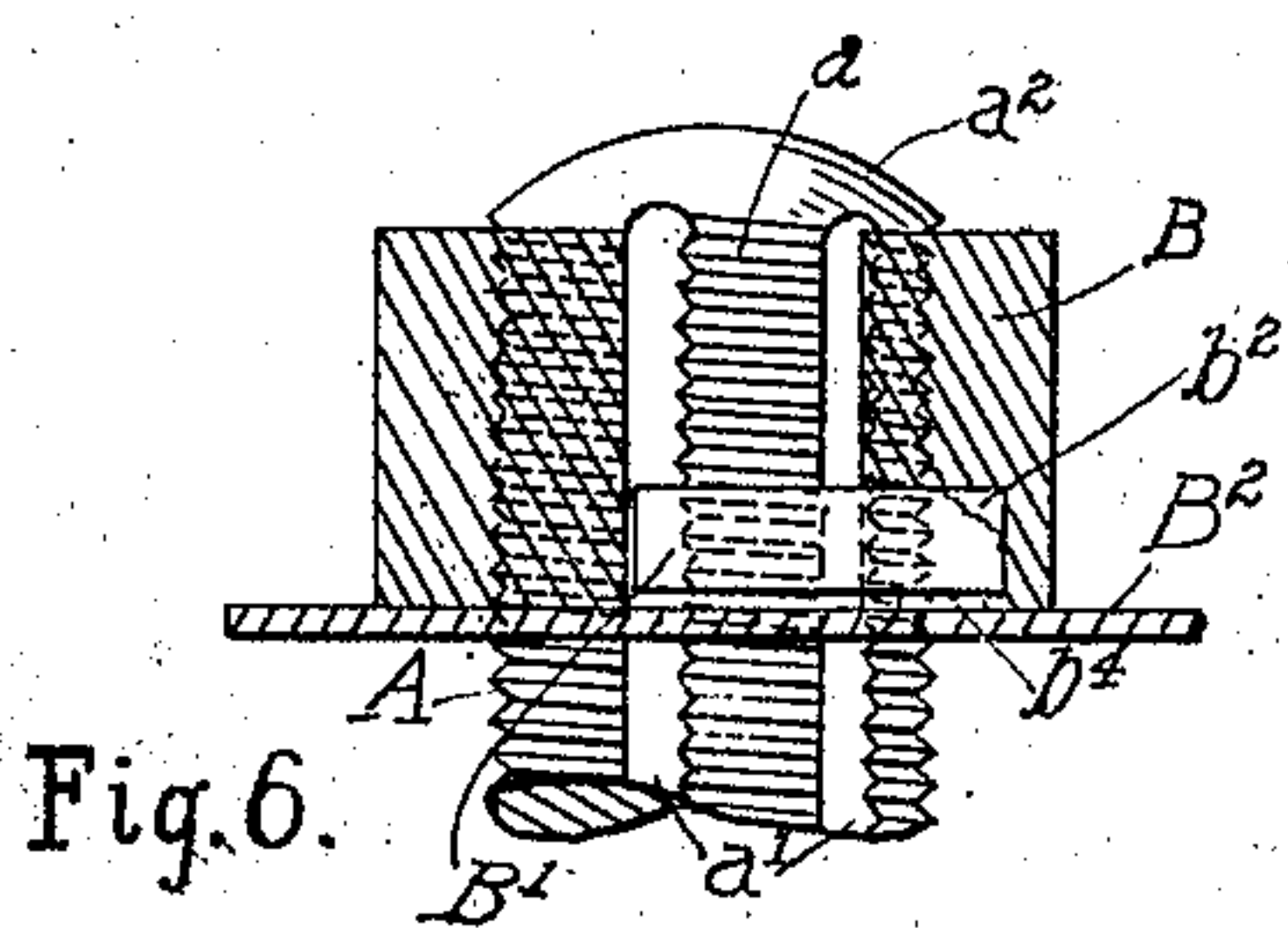
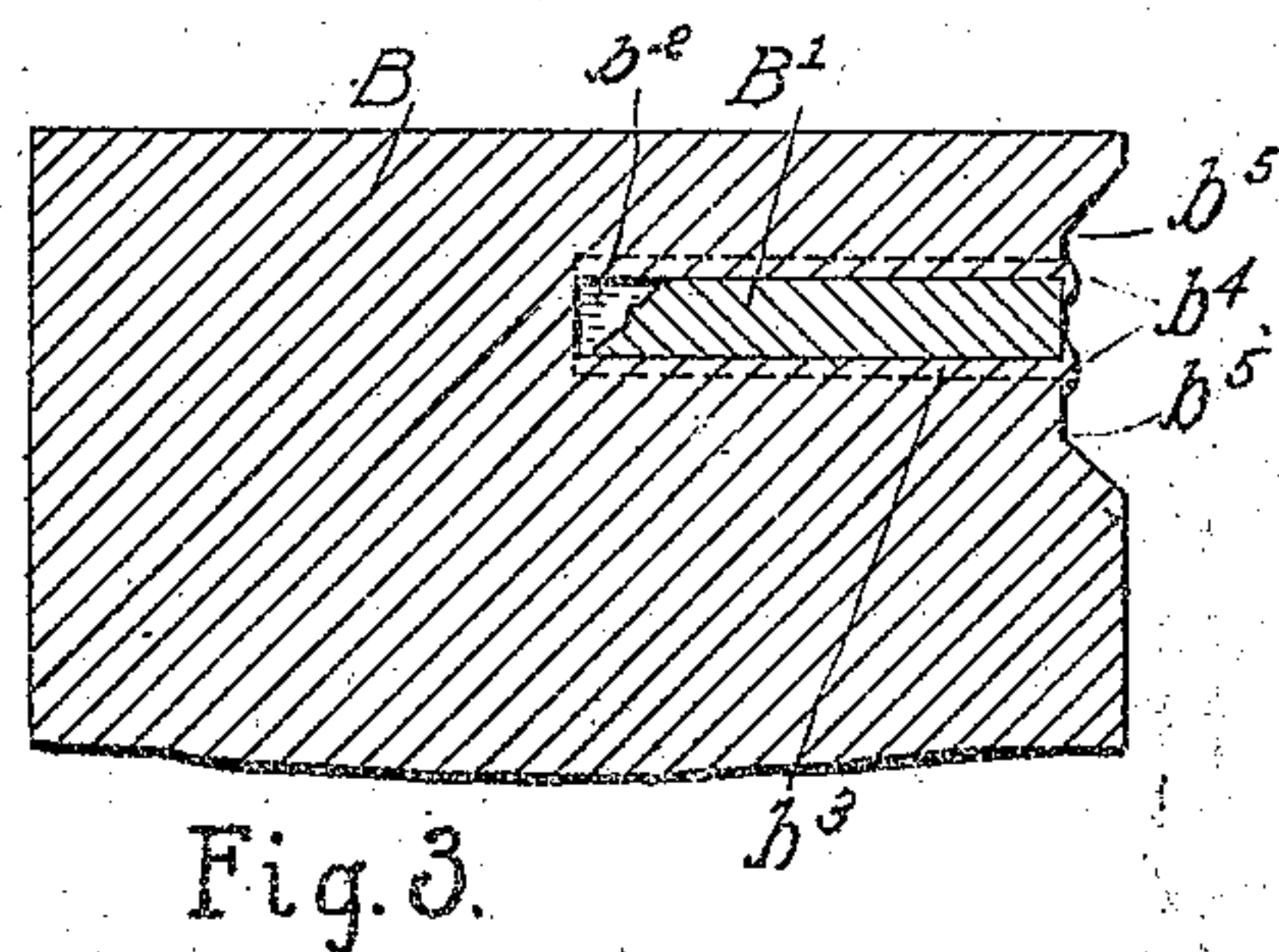
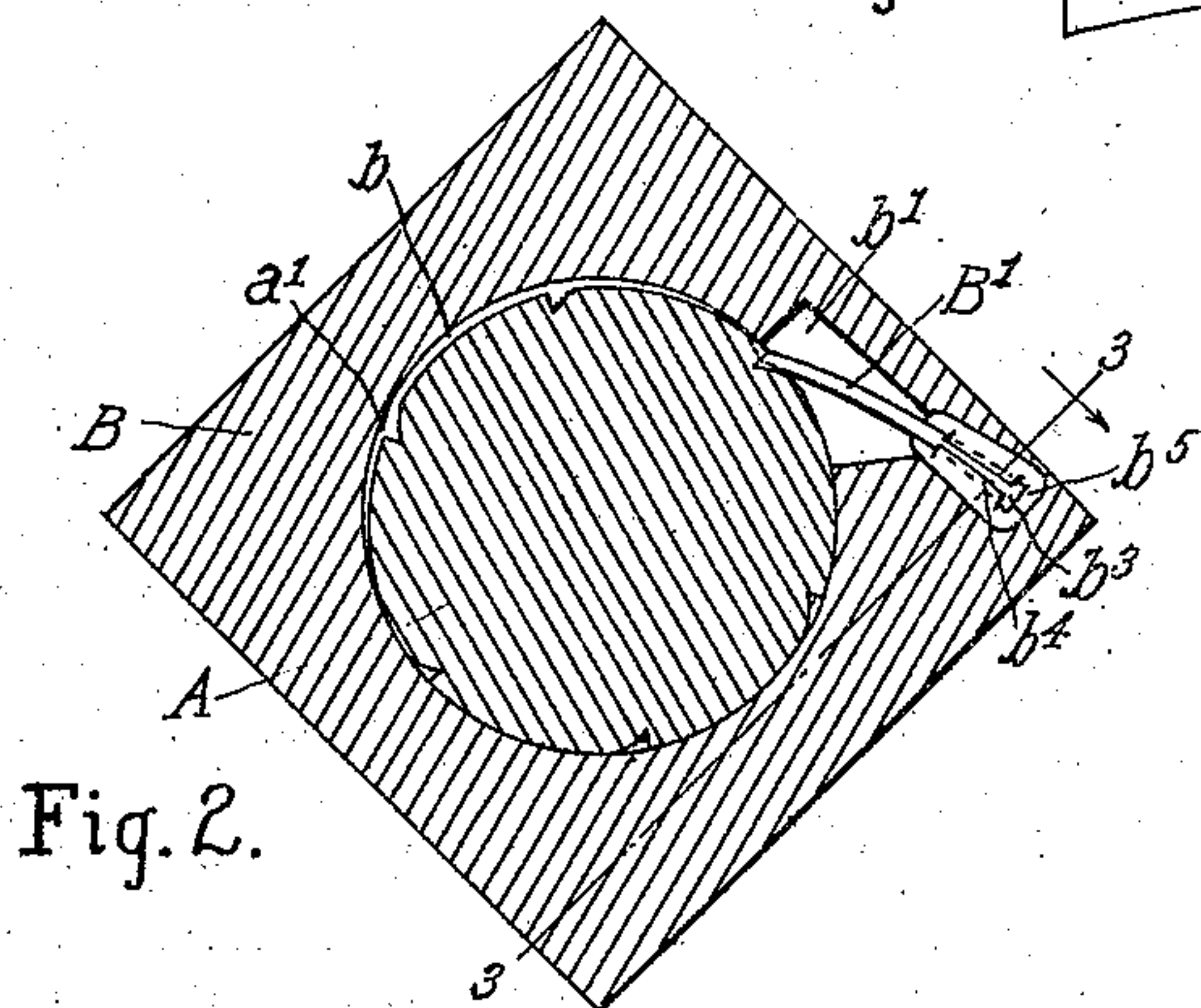
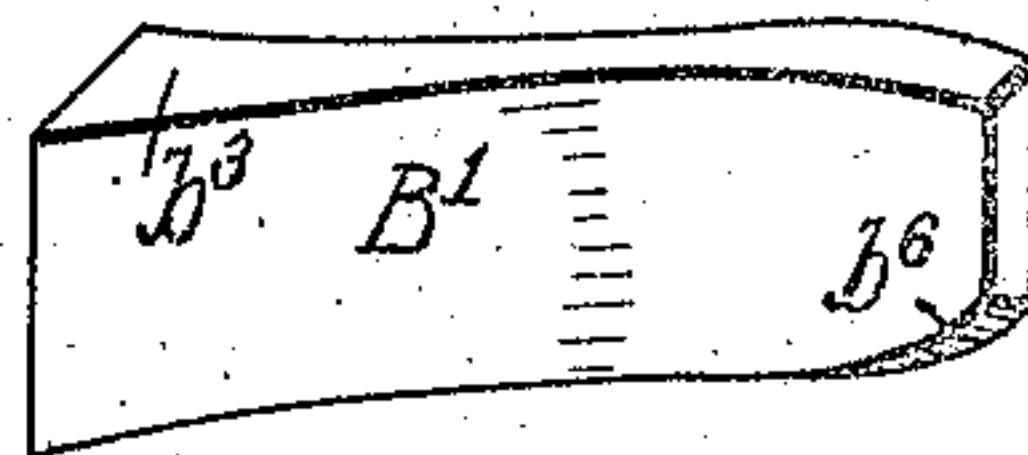


Fig. 7.



Witnesses:  
*E. H. Lichtenberg*  
*Clara McKee*

Inventor:  
BRYANT WATTS.  
By Atty. *N. DuBois*



# UNITED STATES PATENT OFFICE.

BRYANT WATTS, OF SPRINGFIELD, ILLINOIS.

## NUT-LOCK.

No. 827,198.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed December 18, 1905. Serial No. 292,184.

*To all whom it may concern:*

Be it known that I, BRYANT WATTS, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Nut-Locks, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use my said invention.

My invention relates to nut-locks of that class in which a locking device on the nut engages with a stop or stops on the bolt to prevent unscrewing of the nut.

The general purpose of this invention is to provide a simple and effective nut-lock so constructed and arranged that the parts may be quickly and cheaply assembled without the use of bolts, screws, rivets, or pins and without the use of tools other than a hammer, reducing to the minimum the cost of production and obviating the inconvenience and loss resulting from the displacement and breakage of parts of the nut-lock, and so constructed and arranged that the retaining spring or pawl may be raised when it is desired to remove the nut.

The more specific purposes of my invention are to provide a nut of improved form adapted to house a resilient pawl or finger acting on the bolt with which the nut is used; to provide in the body of the nut a pawl-housing adapted to prevent longitudinal movement of the pawl, also adapted to firmly hold the basal part of the pawl against transverse movement; to provide a pawl of improved form fitting in the housing of the nut; to provide a pawl-securing device integral with the body of the nut and adapted to secure the pawl in the nut without the use of extraneous securing devices, such as pins, rivets, screws, &c., and to provide a nut having a transverse opening extending through the nut and adapted to receive an instrument for raising the spring or pawl.

My said invention consists in the novel features of construction and combinations of parts shown in the annexed drawings, to which reference is hereby made, and hereinafter particularly described, and finally recited in the claims.

Referring to the drawings, in which similar reference-letters designate like parts in the several views, Figure 1 is a top plan of a bolt

and nut embodying my improvements. Fig. 2 is an enlarged transverse section on the line 2 2 of Fig. 1. Fig. 3 is an enlarged partial section on the line 3 3 of Fig. 2. Fig. 4 is an enlarged partial section through the nut and pawl and shows the position of the ears on the nut before being turned inward to bear against the face of the pawl. Fig. 5 is an end elevation of the device. Fig. 6 is a partial vertical section on the line 6 6 of Fig. 5, and Fig. 7 is an enlarged isometric projection of the spring.

The bolt A has screw-threads *a* matching the threads of the nut and grooves constructed and arranged to form a series of abrupt stops *a'* lengthwise of the bolt, against which the free end of the pawl strikes to prevent unscrewing of the nut.

The nut B has screw-threads *b* matching the threads of the bolt. Formed in the metal of the nut and extending transversely through the nut is a depression *b'*, formed to accommodate the pawl B' and permit vibration of the free end thereof, and a dovetail depression *b<sup>2</sup>*, extending part way through the nut in which the basal part *b<sup>3</sup>* of the pawl fits tightly. On each side of and parallel to the depression *b<sup>2</sup>* is a relatively shallow depression *b<sup>5</sup>*, separated from the depression *b<sup>2</sup>* by thin walls *b<sup>4</sup>* of the metal of the nut. The walls *b<sup>4</sup>* are far enough apart to permit the spring B' to pass between the walls when the spring is being inserted in the depression *b<sup>2</sup>*. After the base of the spring B' has been placed in the depression the walls *b<sup>4</sup>* are bent by pressing or hammering them to cause the walls to project over and bear against the outer surface of the spring, as shown in Figs. 2 and 3. When the parts are in this position, the expanded parts of the walls bear on the spring and hold it firmly in the depression. The spring is depressed somewhat below the adjacent face of the nut, so that it will not interfere with or prevent the bearing of the face of the nut against the washer B<sup>2</sup>, used with the nut, or against the structure with which the nut is used.

The spring B' tapers, substantially, as shown and has a dovetail part *b<sup>3</sup>* fitting tightly in the depression *b<sup>2</sup>*, which prevents longitudinal movement of the spring. The spring yields to permit its free end to travel around on the surface of the bolt, and the end of the spring enters the grooves *a'* and pre-



vents unscrewing of the nut. One corner of the free end of the spring B' is cut away to form a beveled part  $b^6$ , which rides on the curved surface  $a^2$  of the end of the bolt during the placing of the nut on the bolt. The end of the spring is beveled sufficiently to permit at least one thread of the nut to take with a thread of the screw, so that the longitudinal movement of the nut on the bolt, caused by turning the nut, will slide the part  $b^6$  on the part  $a^2$ , and thereby raise the spring, so that during the continued onward turning of the nut the end of the spring will travel around the bolt on the threads  $a$  of the bolt, and if the direction of turning the nut be reversed the end of the spring will enter the nearest groove  $a'$  and prevent further backward turning of the nut. When the nut is screwed tightly against the washer, the washer covers the depression in which the spring is situated. When the end of the spring is in any one of the grooves, the central line of the spring is approximately tangent to the circumference of the bolt and force applied in the direction necessary to unscrew the nut will cause the end of the spring to press against the abrupt wall of the groove in which the end of the spring lies. The pressure on the spring being in the nature of end thrust, as distinguished from transverse stress, a comparatively light spring may be used without impairing the effectiveness of the nut-lock. When it is desired to remove the nut, the point of a screw-driver or other suitable flat instrument will be inserted in the opening  $b'$  between the spring B' and the bolt A, and by turning the instrument the spring will be raised to lift its free end out of the notches, so as to permit unscrewing of the nut.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a screw-threaded bolt having longitudinal grooves and an inclined end, a screw-threaded nut fitting on said bolt and having a depression adapted to hold a pawl against longitudinal movement, and adapted to permit vibration of the free end of the pawl, and having expansible walls contiguous to said depression, and a pawl adapted to enter the grooves in the bolt and fitting in said depression in the nut and secured therein by the expanded walls of the nut, said pawl also having an inclined part riding on the inclined part of said bolt to raise the pawl.

2. A nut having a main depression extending transversely through the nut and accommodating a vibrating pawl usable with the nut and adapted to cooperate with the bolt upon which the nut is threaded, said depression being also adapted to accommodate an instrument adapted to raise the pawl, said nut also having a dovetailed depression adapted to accommodate the fixed end of the pawl, a lateral depression contiguous to the dovetailed depression and walls contiguous to the dovetailed depression and extending into the lateral depression and expansible to partially overlie the dovetailed depression; in combination with a pawl fitting in the dovetailed depression.

In witness whereof I have hereunto signed my name, at Springfield, Illinois, this 28th day of November, 1905.

BRYANT WATTS.

Witnesses:

MARGARET McDONALD,  
MAX RYAN.