

No. 627,206.

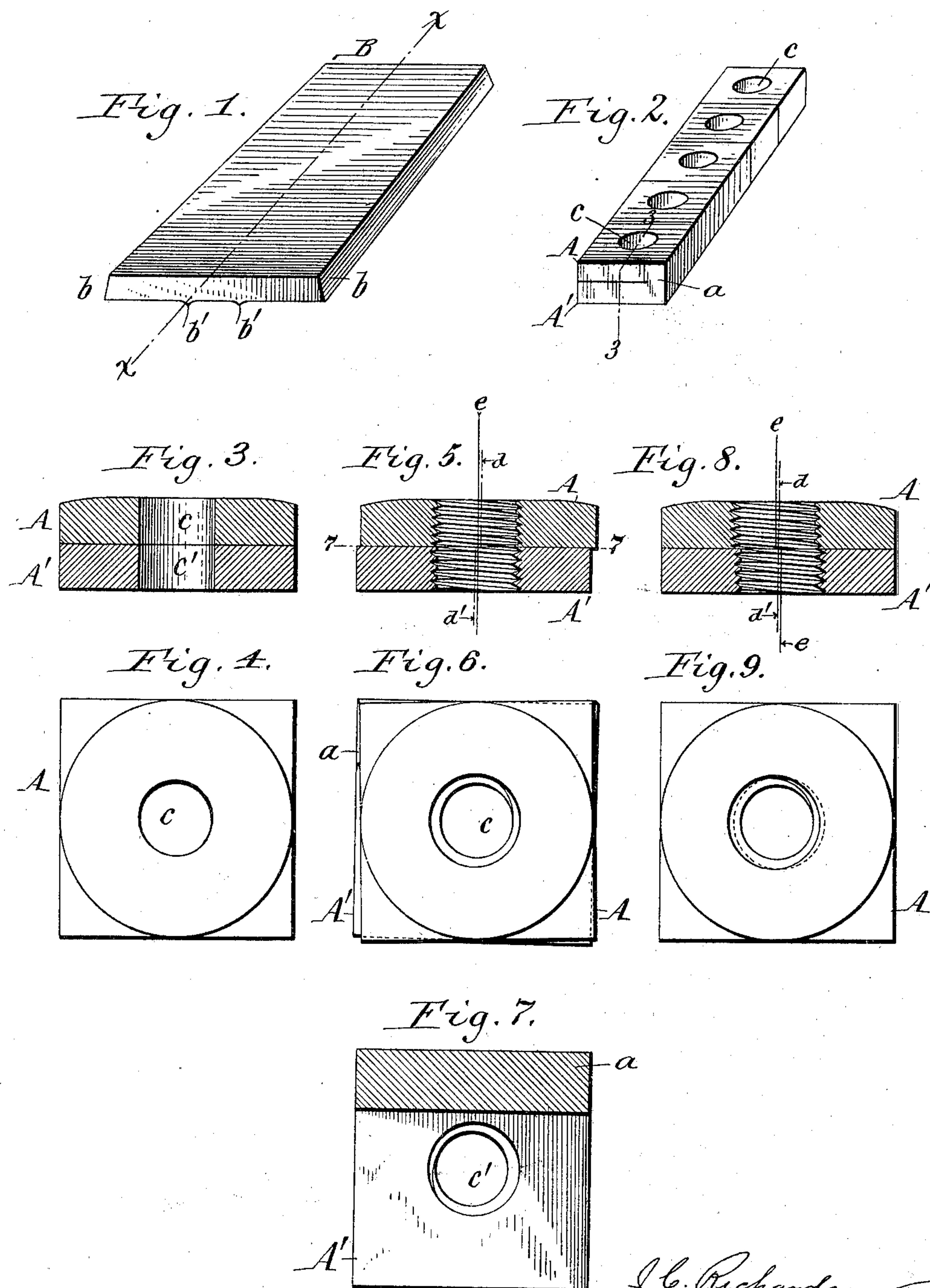
Patented June 20, 1899.

J. C. RICHARDSON.

NUT LOCK.

(Application filed June 30, 1898.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 627,206, dated June 20, 1899.

Application filed June 30, 1898. Serial No. 684,818. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS C. RICHARDSON, a citizen of the United States, residing at North East, in the county of Erie and State of Pennsylvania, have invented a new and useful Improvement in Nut-Locks, of which the following is a specification.

This invention relates to a nut-lock or lock-nut comprising two connected sections, each of which has an internal screw-thread which is axially out of line with the thread of the other section, so that upon screwing this nut upon a screw-bolt the sections thereof will be strained laterally and caused to clamp against opposite sides of the bolt for holding the nut against displacement on the bolt. A nut-lock of this character is shown in Letters Patent No. 450,377, granted to me April 14, 1891; and it consists of two connected sections which are offset laterally, so as to bring the screw-threads in the sections axially out of line. This offsetting of the sections in the nut renders the appearance of the nut less sightly than the screw-nuts now commonly used and it also prevents a wrench from being applied squarely thereto for turning the same.

The object of my invention is the production of a lock-nut of this character in which the screw-threads in the two nut-sections are axially out of line, but in which the sections are not offset and are flush on all sides, so as to have the same appearance as the screw-nuts now in use.

In the accompanying drawings, Figure 1 is a perspective view of a bar from which a number of my improved lock-nuts are made. Fig. 2 is a similar view showing the bar folded and divided into nut-blanks and each nut-blank provided with a central opening or perforation. Fig. 3 is a vertical section, on an enlarged scale, of one of the perforated nut-blanks, the section being taken in line 3 3, Fig. 2. Fig. 4 is a top plan view of the same. Fig. 5 is a vertical section similar to Fig. 3, showing the two perforated sections of the lock-nut offset and an internal screw-thread cut continuously through both sections, so that the threads in both sections are axially in line. Fig. 6 is a top plan view of the same. Fig. 7 is a horizontal section in line 7 7, Fig. 5. Fig. 8 is a vertical section, similar to Fig.

3, of the finished lock-nut, showing the sections of the nut flush or in line, while the screw-threads in the sections are axially out of line. Fig. 9 is a top plan view of the same.

Like letters of reference refer to like parts in the several figures.

The nut-blank from which my improved lock-nut is made is shown in Figs. 2, 3, and 4, and consists of two centrally-perforated sections A A', which fit against each other, so that their outer sides are flush and their perforations are axially in line and which are connected on one side of the perforations by a web *a*. A number of these blank are preferably formed out of a flat bar B, which is shown in Fig. 1 and which is provided with beveled longitudinal edges *b* and two longitudinal ribs *b' b'*, arranged equidistant on opposite sides of the longitudinal center line *xx* of the blank. The bar is folded along the center line, so that the two longitudinal sections or halves lie one on top of the other and are connected on one side by a web. The beveled edges and the ribs of the bar supply the necessary metal for producing full corners when the bar is folded. After the bar is folded the same is drilled transversely at intervals, so as to form openings *c c'* in the upper and lower sections of the bar, and then the latter is cut transversely at intervals between the openings to divide the bar into nut-blanks having the hereinbefore-described form. This method of producing nut-blanks is the same as that described in Letters Patent No. 461,932, granted to me October 27, 1891. The upper and lower sections of each nut-blank are next twisted laterally one upon the other, so that the sides of the sections are offset from each other and the opening in one section is axially out of line with the opening in the other section, as shown in Figs. 5 and 6, the axes or centers of the openings in the upper and lower sections being indicated by broken lines *d d'*, respectively, in Fig. 5. An internal screw-thread is next formed in the blank by running a screw-threading tool or tap successively through the sections of the blank, so that the thread in one section forms a continuation of the thread in the other section, as shown in Fig. 5. During the operation of threading the blank-sections the axis of the



tap stands between the axes of the upper and lower nut-sections, as shown by the full line e, Fig. 5. This causes the tap in passing through the opening of the first section to cut the thread eccentrically therein, thereby producing a thread which is deeper on one side than on the other side, and as the tap passes through the opening of the second section it also cuts the thread eccentrically in the latter and produces a thread which is deep on one side and shallow on the other side, as shown in Fig. 5. By arranging the axis of the tap between the axes of the section-openings the deep and shallow sides of the thread in the first section are arranged reversely to the deep and shallow sides of the thread in the other section. In other words, the deep portion of the thread in one section and the shallow portion of the thread in the other section are on the same side of the nut-blank. The two sections of the nut are next untwisted or shifted back transversely, so that the outer sides of the sections are flush again and the axes of the openings in the sections are in line, whereby the axes of the screw-threads in the sections are shifted out of line or on opposite sides of the axes of the openings in the sections, as shown in Fig. 8, thereby completing the lock-nut.

In applying the lock-nut to a screw-bolt the first section of the nut screws comparatively easy upon the bolt; but the second section screws very hard upon the bolt, because the bolt as it enters the second section must deflect the same slightly in order to engage with the thread thereof, thereby producing a strain or tension upon the web connecting the sections which causes them to firmly grip or clamp opposite sides of the bolt and hold the nut against displacement on the bolt. The deflection of the nut-sections with reference to each other upon applying the nut to a bolt

is so slight as to be imperceptible, which permits the nut to be finished and used in high-grade-machine construction where sightliness is a consideration, and it also permits of applying a wrench squarely to the nut, thereby preventing burring of the corners of the nut. The offset of the nut-sections preparatory to tapping the same is very small in practice, but is shown exaggerated in Figs. 5 and 6 for the purpose of clearly illustrating the same.

If desired, the screw-thread may be cut eccentrically in only one of the sections, while the thread is cut concentrically in the other section, whereby the same result is produced.

I claim as my invention—

1. A nut consisting of two overlying connected sections having their outer faces flush with each other, and having internal screw-threads which have their axes arranged parallel and laterally out of line, substantially as set forth.

2. A nut consisting of two overlying connected internally-threaded sections having a screw-thread which is eccentric with reference to the perforation in the section in which it is formed, substantially as set forth.

3. A nut consisting of two overlying connected sections which have their sides arranged flush with each other, each section having a perforation which is axially in line with the perforation in the other section and each section having a screw-thread which is eccentric to the perforation therein and also eccentric with reference to the screw-thread of the other section, substantially as set forth.

Witness my hand this 10th day of June, 1898.

JULIUS C. RICHARDSON.

Witnesses:

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