No. 833,530. PATENTED OCT. 16, 1906.

A. H. KNOPF.

NUT LOCK.

APPLICATION FILED JUNE 12, 1906.

Fig. 1.

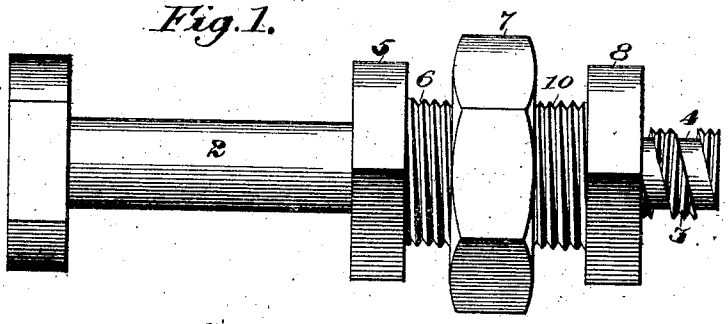


Fig. 2.

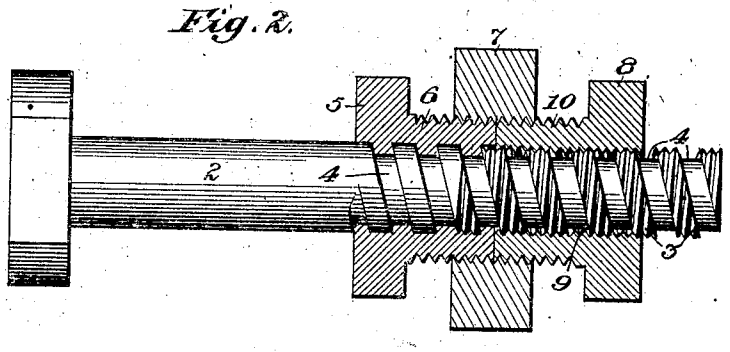


Fig. 3.

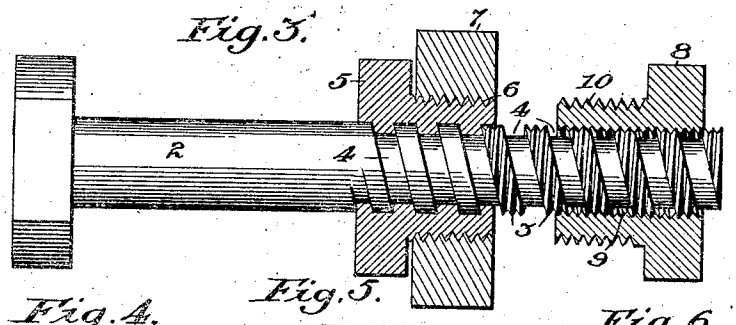


Fig. 5.

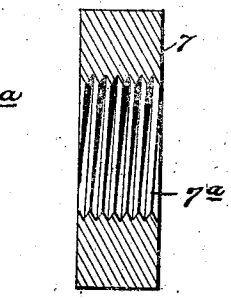


Fig. 4.

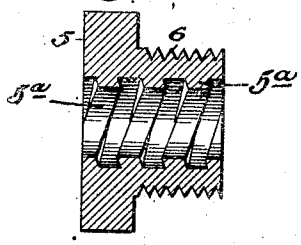
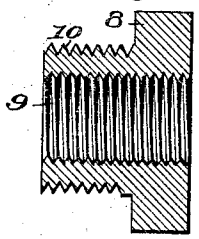


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

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NUT-LOCK.

No. 833,530. Specification of Letters Patent. Patented Oct. 16, 1906.

Application filed June 12, 1906. Serial No. 321,368.

To all whom it may concern:

Be it known that I, ALBERT H. KNOPF, of Oak Hall, in the county of Center and State of Pennsylvania, have invented a new and useful Improvement in Nut-Locks; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to that class of nut-locks where two nuts have been employed on a bolt, the nuts having reversely-inclined threads and the bolt being provided with reversely-inclined engaging surfaces to engage with said nuts.

My invention consists in an integral bolt having two screw-threaded portions reversely inclined to each other, an inner nut adapted to engage one of said screw-threaded portions, an outer nut adapted to engage the other of said screw-threaded portions, each of said nuts having exterior screw-threads of the same inclination but reversely inclined to the interior screw-threads of the outer nut, and a lock-nut having interior screw-threads adapted to engage said exterior screw-threads of said bolt-nuts.

I will now describe my invention so that others skilled in the art may manufacture and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improvement. Fig. 2 is a vertical central section of the same, the bolt being shown in full lines. Fig. 3 is a view similar to Fig. 2, showing the manner of assembling the parts. Figs. 4, 5, and 6 are vertical central sections of the different nuts.

Like symbols of reference indicate like parts in each.

In the drawings, 2 indicates the bolt provided with a left-hand screw-threaded portion 3 and a right-hand screw-thread or spiral groove 4. An inner nut 5 is provided on its inner surface with a right-hand spiral ridge or screw-thread 5^a, adapted to engage with said spiral groove 4 and on its outer surface with right-hand screw-threads 6.

7 is a lock-nut having right-hand screw-threads 7^a, adapted to engage with the screw-threaded surface 6 of the nut 5.

8 is the outer nut having an inner left-hand screw-threaded surface 9, adapted to engage with the left-hand screw-threads 3 of the bolt 2 and having an outer right-hand screw-threaded surface 10, adapted to be engaged by the screw-threads 7^a of the nut 7.

The elements of my improved nut-lock are assembled as follows: The inner nut 5 is first screwed to place on the bolt 2, the interior right-hand spiral ridge 5^a of the nut engaging with the right-hand spiral groove 4 of the bolt. The lock-nut 7 is then screwed onto the screw-threaded surface 6 of the nut 5 until its outer face has passed the outer face of said nut 5. The outer nut 8 is then screwed onto the bolt 2, its interior left-hand screw-threads 9 engaging with the left-hand screw-threads 3 of the bolt until the inner surface of said nut 8 abuts against the outer surface of the nut 5. The nut 7 is then screwed outwardly sufficiently to engage the screw-threaded surface 10 of the nut 8, but not so far as to cause it to be disengaged from the screw-threaded surface 6 of the nut 5. When thus assembled, the parts are held securely without liability of accidentally becoming loose or displaced, as it will be impossible for the left-hand nut to turn or be turned from the bolt while it is engaged by the right-hand lock-nut 7, and by reason of the employment of the spiral groove 4 and its engaging nut 5 a construction is provided which renders it impossible to strip the nuts from the bolt. The screw-threads 6 and 10 of the nuts 5 and 8, respectively, preferably are right-hand screw-threads; but it is obvious that they may both be left-handed should the interior screw-threads of the bolt 8 be right-handed and the screw-threads of the nut 5 be left-handed, it being necessary only that the interior and exterior screw-threads of the outer nut 8 be reversely inclined to each other.

I claim—

1. In a nut-lock, the combination of a bolt having two spirally-arranged engaging surfaces reversely inclined to each other, nuts having inner engaging surfaces adapted to engage said reversely-inclined surfaces of the bolt, said nuts having also exterior screw-threaded portions reversely inclined to the interior screw-threads of the outer one of said nuts, and a lock-nut adapted to engage the exterior screw-threaded portions of said bolt-nuts; substantially as described.

2. In a lock-nut, the combination of a bolt having a screw-threaded portion, a spiral groove formed in said screw-threaded portion at a reverse inclination to that of the

screw-threads, a nut having a spiral ridge or screw adapted to engage said spiral groove of the bolt, a nut adapted to engage screw-threaded portion of the bolt, said nuts having also exterior screw-threaded portions reversely inclined to the interior screw-threads of the outer one of said nuts, and a lock-nut adapted to engage the exterior screw-threaded portions of said bolt-nuts; substantially as described.

3. In a nut-lock, the combination of a bolt having a left-hand screw-threaded portion, a right-hand spiral groove formed in said screw-threaded portion of the bolt, a nut having a right-hand spiral screw or ridge adapted to engage said spiral groove of the bolt, a nut having an inner left-hand screw-threaded portion adapted to engage said left-hand screw-threaded portion of the bolt, said nuts having also exterior screw-threaded portions reversely inclined to the interior screw-threads of the outer one of said nuts, and a lock-nut adapted to engage the exterior screw-threaded portions of said bolt-nuts; substantially as described.

In witness whereof I have hereunto set my hand.

ALBERT H. KNOPF.

Witnesses:
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WM. F. KNOPF.