

No. 812,663.

PATENTED FEB. 13, 1906.

A. N. MASSIE.
KEY LOCK.

APPLICATION FILED MAR. 8, 1905.

Fig. 1.

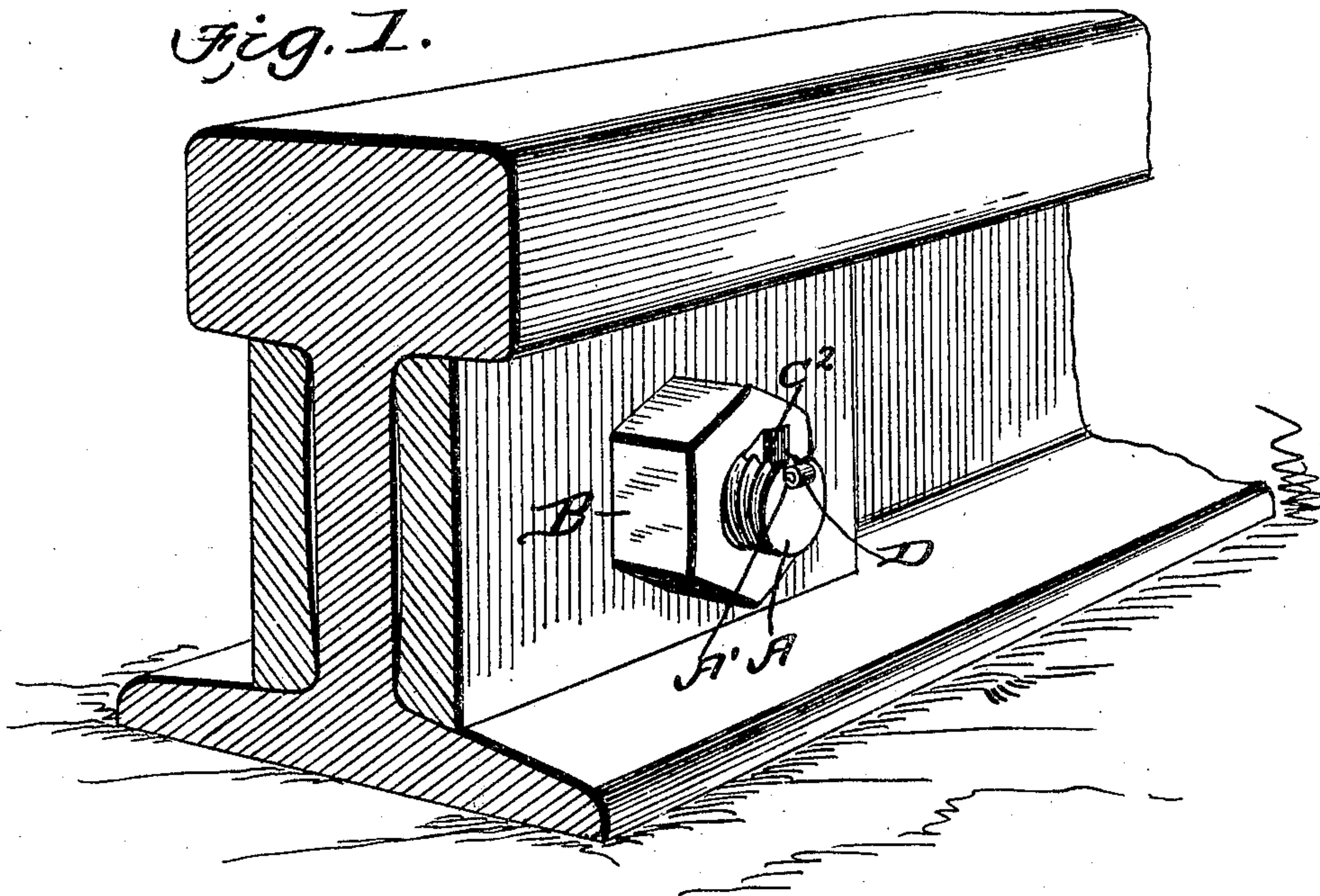


Fig. 2.

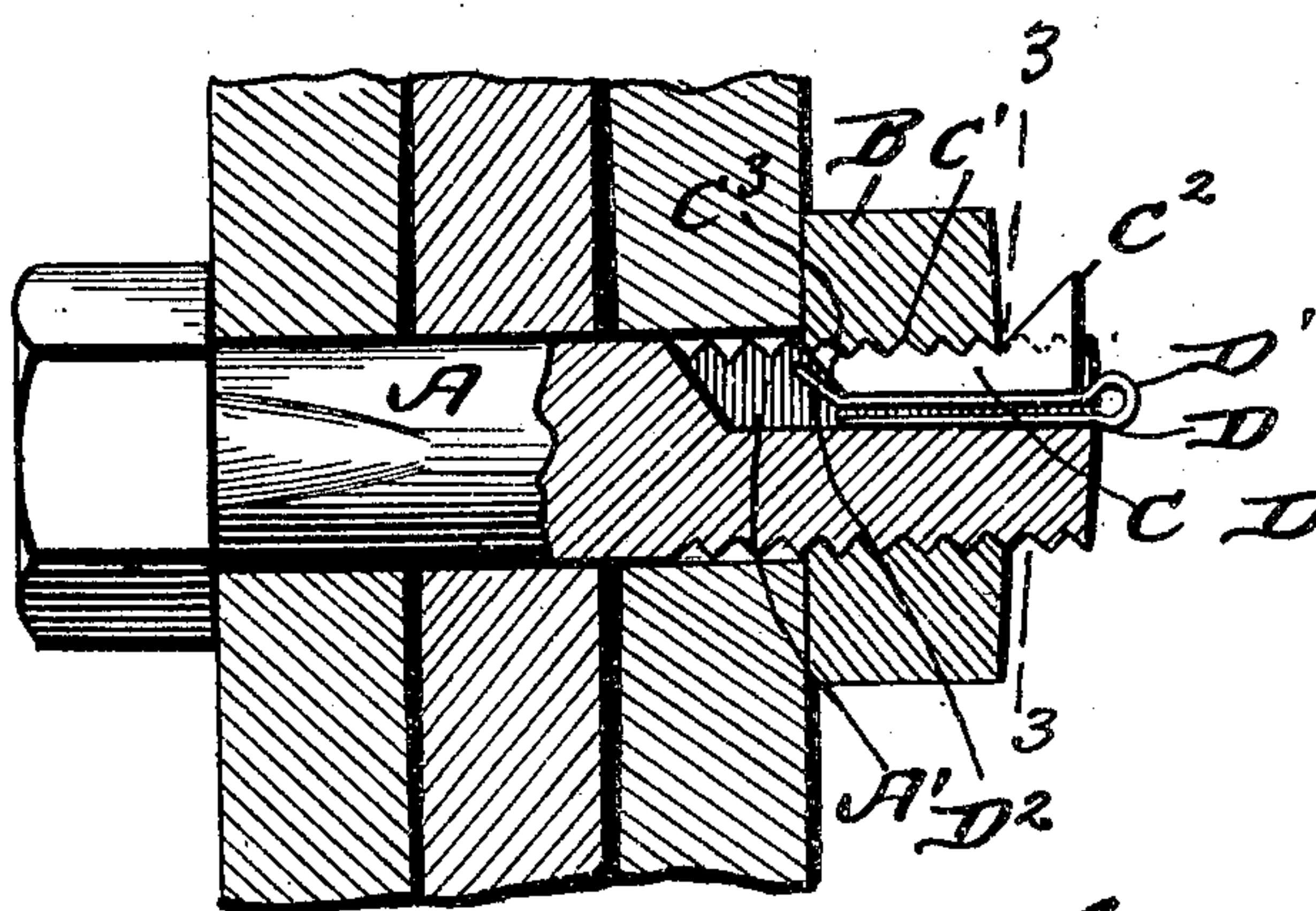


Fig. 3.

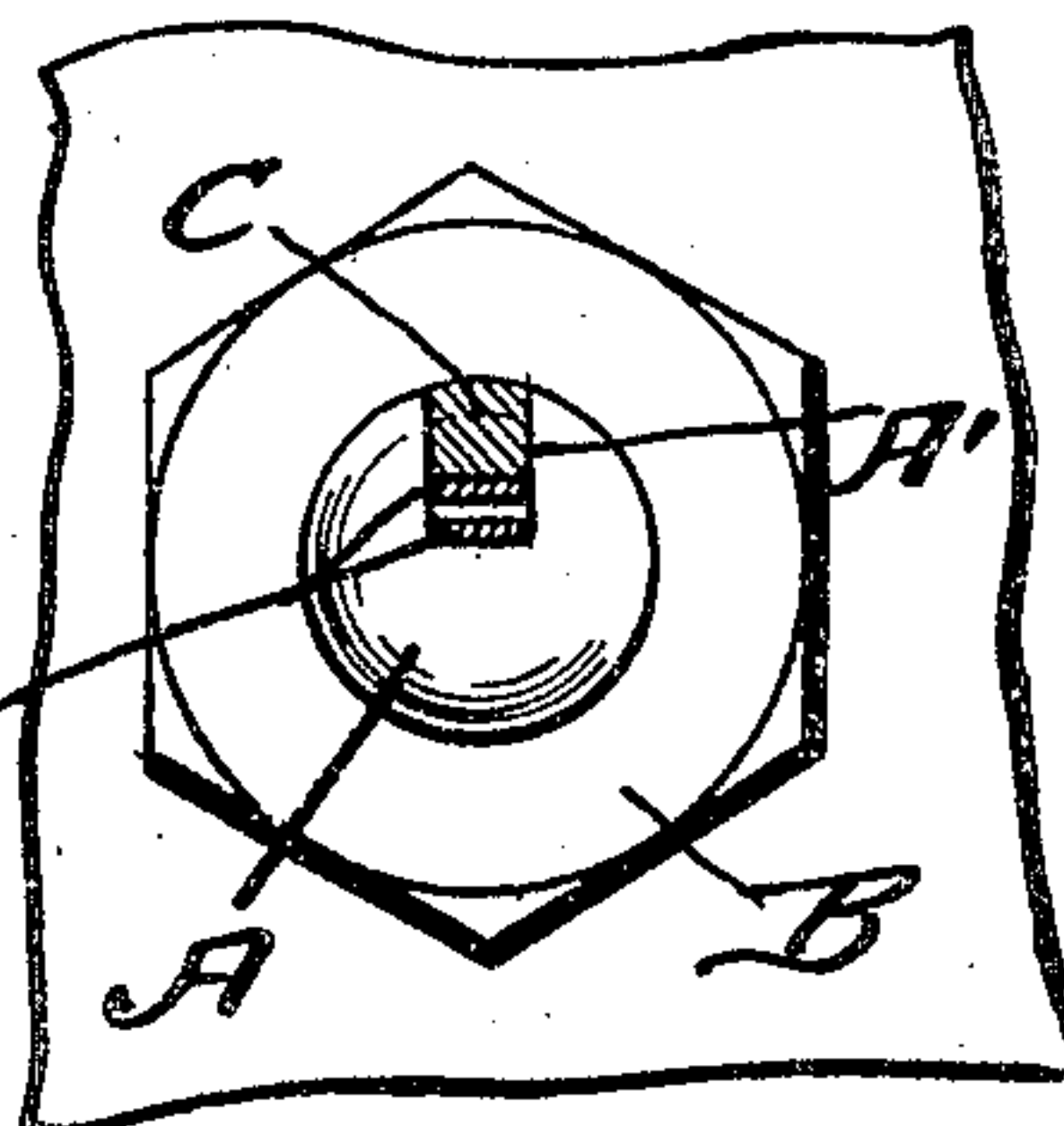


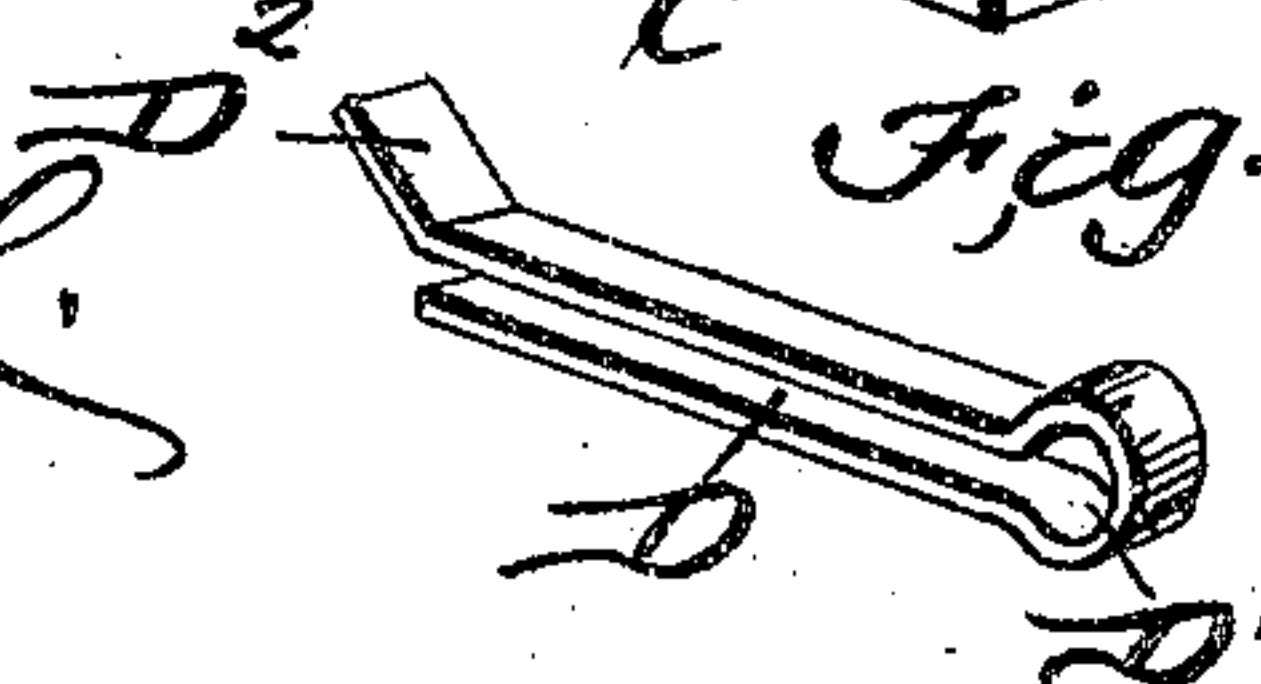
Fig. 4.



WITNESSES:

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Fig. 5.



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KEY-LOCK.

No. 812,663.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed March 8, 1905. Serial No. 249,126.

To all whom it may concern.

Be it known that I, ALFRED N. MASSIE, a citizen of the United States, residing at Belleville, in the county of St. Clair and State of Illinois, have invented a new and useful Improvement in Key-Locks, of which the following is a specification.

This invention relates to an improved nut-lock, and particularly to a key-lock for securely retaining the locking members in an operative position; and the object of the invention is to provide an arrangement capable of easy application and removal without injury to the nut, bolt, or any of the parts constituting the lock; and another object is to provide an arrangement capable of application to bolts and nuts upon various kinds of machinery and ironwork, where it is often necessary to unlock the nut for the purpose of tightening or entirely removing the same.

With these briefly-stated objects in view the invention comprises certain details of construction and peculiar combination and arrangement of parts, as will be fully described in the following specification and pointed out in the claims, reference being had to the drawings, in which—

Figure 1 is a perspective view illustrating my invention applied for locking the fish-plates of a rail-joint. Fig. 2 is an enlarged sectional elevation of the same. Fig. 3 is a section drawn on the line 3 3 of Fig. 2, the bolt being shown in elevation. Fig. 4 is a detail view of the locking member, and Fig. 5 is a detail perspective view of the key for holding the locking member in its operative position.

In the practical application of my invention I employ a bolt A and a slot A' in its threaded end and which preferably extends throughout the entire length of the threads, so that the nut may be locked thereon at any position upon the bolt, and operating upon the bolt is a nut B of the usual shape and construction. Within the slot A', I arrange a locking member C, which is of a width to snugly fit the slot and whose upper surface is corrugated or toothed, as at C', which are shaped to fit the threads of the nut. One end of the locking member is of a greater height than the body portion to provide a head C², the forward face of which engages the nut B when arranged in a locking position. In the construction shown in the drawings the face of the head which engages the nut is beveled outwardly; but I desire it un-

derstood that the face may extend vertically from the teeth to provide a broader contacting surface; but the construction shown is preferable for the reason that it is easier fitted in position. The opposite end of the locking member and upon the opposite side from which the head extends is beveled, as at C³, for a purpose as will be explained later.

In practice the body of the locking member is made of a less height than the depth of the groove in the bolt A, so that it may be easily inserted within the slot after the nut has been tightened upon the bolts, and in order to hold the toothed surface of the locking member in engagement with the threads of the nut I employ a split key D, which is constructed of a single piece of spring metal that is bent nearly centrally of itself to form an eye D', from which extend in substantially parallel position the ends, and one end of the key projects slightly beyond the other end and terminates at an angle to the body portion, as shown at D², and this end is designed to engage the bevel end of the locking member to prevent its accidental displacement after the parts have been assembled, as shown in Fig. 2 of the drawings.

In applying my lock to a bolt and nut the nut is screwed upon the bolt to the proper position, after which the locking member is inserted in the groove and positioned so that the face of the nut will engage the bevel face of the locking member. After this has been done the split key is inserted under the locking member and driven into the slot until the angle portion D² will extend past the inner edge of the locking member, when the operation is complete and the nut securely locked in position, and as the bolt is non-revoluble any tendency of the nut to turn thereon will be prevented by reason of its coming in contact with the locking member, which prevents its forward movement upon the bolt, and consequently holds it tightly in position. It will be understood that by providing the end of the key with an eye the latter will be prevented from being driven in past the outer end of the locking member, and by reference to Fig. 2 of the drawings it will be seen that the length of the key between the eye and bevel end is substantially the same as the length of the locking member. Now should it be desired to remove the locking member for the purpose of either removing the nut or tightening the same upon the bolt the key is withdrawn, which will permit the locking member

to drop down into the slot and be entirely withdrawn, and after the nut has been replaced it will be readily understood the locking member and key may be readily replaced.

5 It will thus be seen that I provide an exceedingly cheap, simple, and highly efficient device capable of meeting all the requirements mentioned, and particular attention is invited to the fact that the bolt or nut is not
10 injured in the slightest by the application of my invention, and, further, that by providing the end of the key with an angle portion which engages a bevel end of the locking member the latter may be readily withdrawn
15 by forcibly pulling upon the key, but the angle portion is of sufficient rigidity to prevent accidental displacement, but not sufficiently strong to prevent its removal when the key is pulled outwardly.

20 While I have shown my invention as applied to a bolt and nut for locking the meeting ends of the sections of a railroad-rail, I do not wish to be limited to this use, as it may be used with equal effectiveness upon machines and any other place that is manifestly obvious.

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

30 1. In a nut-lock the combination with a bolt having a slot in the threaded end thereof, and a nut operating upon the bolt, of a locking member arranged within the slot and engaging the nut, and a split key having an
35 angle portion that engages the inner end of the locking member.

2. In a nut-lock, the combination with a bolt having a slot in its threaded end, and a

nut operating thereon, of a locking member arranged within the slot and having one face 40 corrugated to fit the threads of the nut, said locking member having a head at one end which engages the face of the nut, and a split key which holds the locking member into engagement with the nut, said key having one 45 end that engages the inner end of the locking member, for the purpose specified.

3. In a nut-lock, the combination with a bolt having a slot in its threaded end, and a nut operating upon said end, of a locking 50 member adapted to be arranged within the slot and having a corrugated surface to fit the threads of the nut, one end of the said locking member having a head, and its opposite end beveled, and a split key having one end 55 extending past its opposite end, and at an angle to the body portion for engagement with the bevel end of the locking member, for the purpose specified.

4. In a nut-lock, the combination with a 60 bolt having a slot in the threaded end thereof, and a nut operating upon the bolt, of a locking member arranged within the slot and engaging the bolt, and a split key having an angle portion at one end that engages the in- 65 ner end of the locking member, and an eye at its opposite end that engages the outer end of the said locking member.

In testimony whereof I have signed my name to this specification in the presence of 70 two subscribing witnesses.

ALFRED N. MASSIE.

Witnesses:

JOHN G. MASSIE,
ERNEST HILGARD.