

No. 742,057.

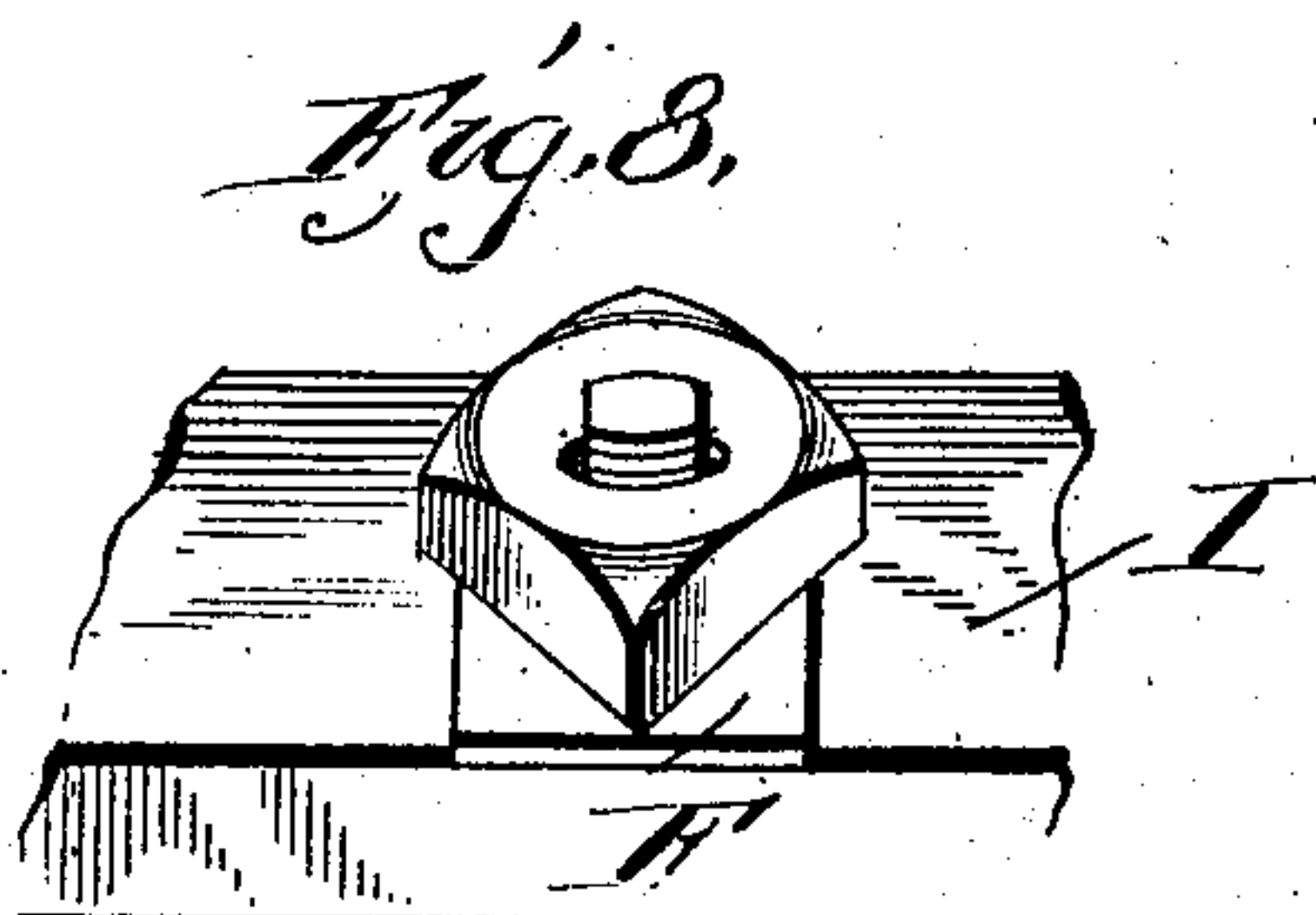
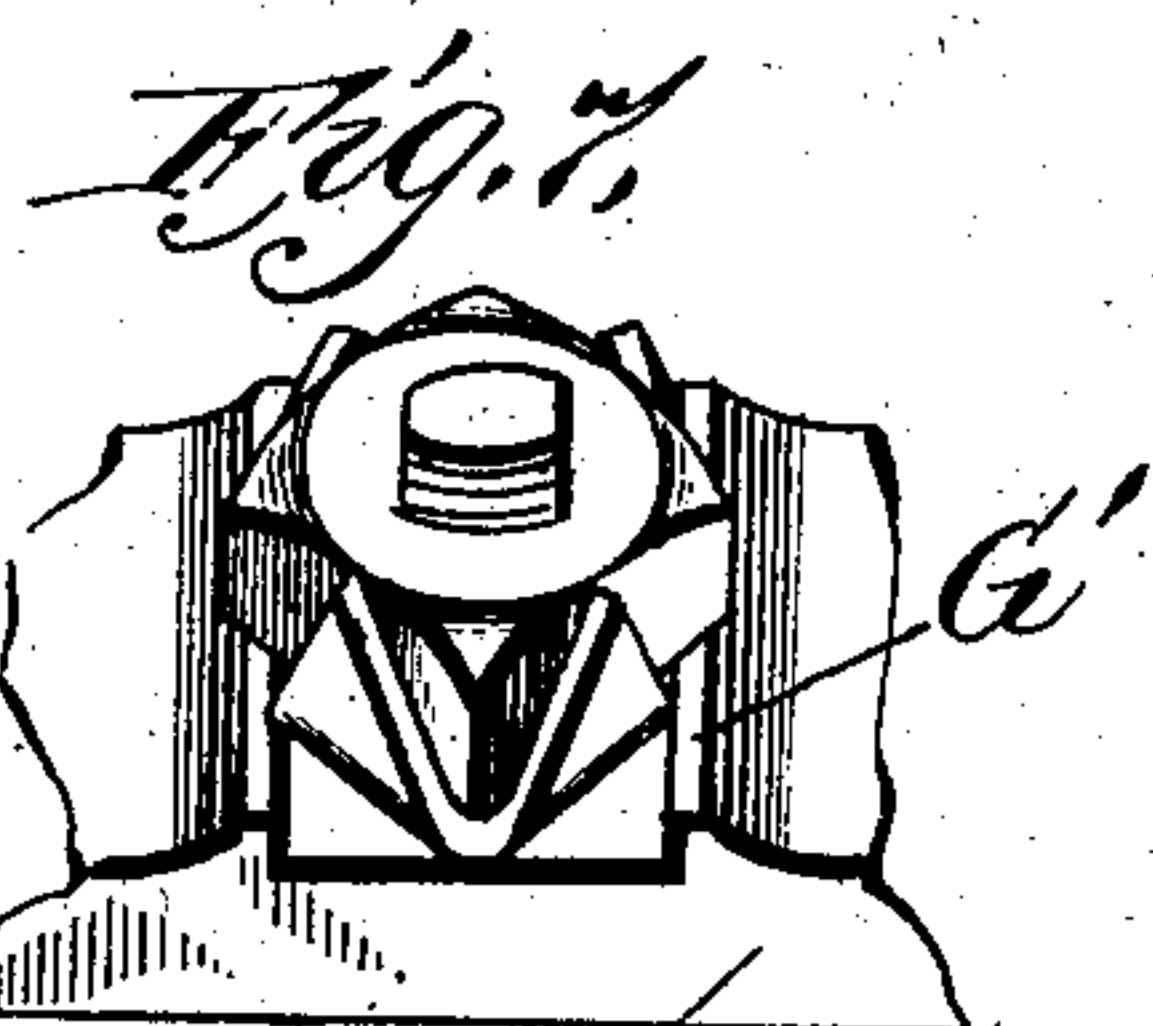
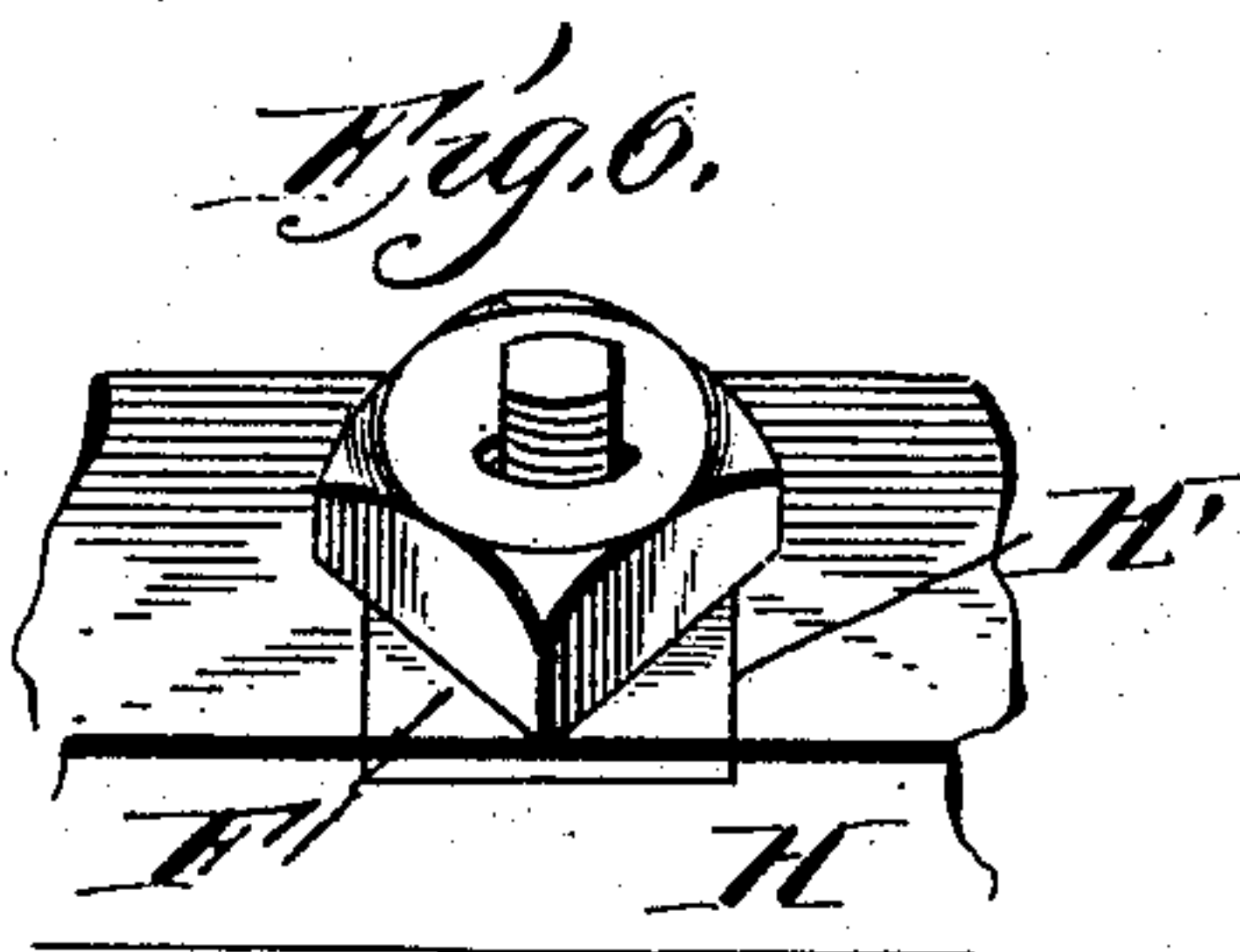
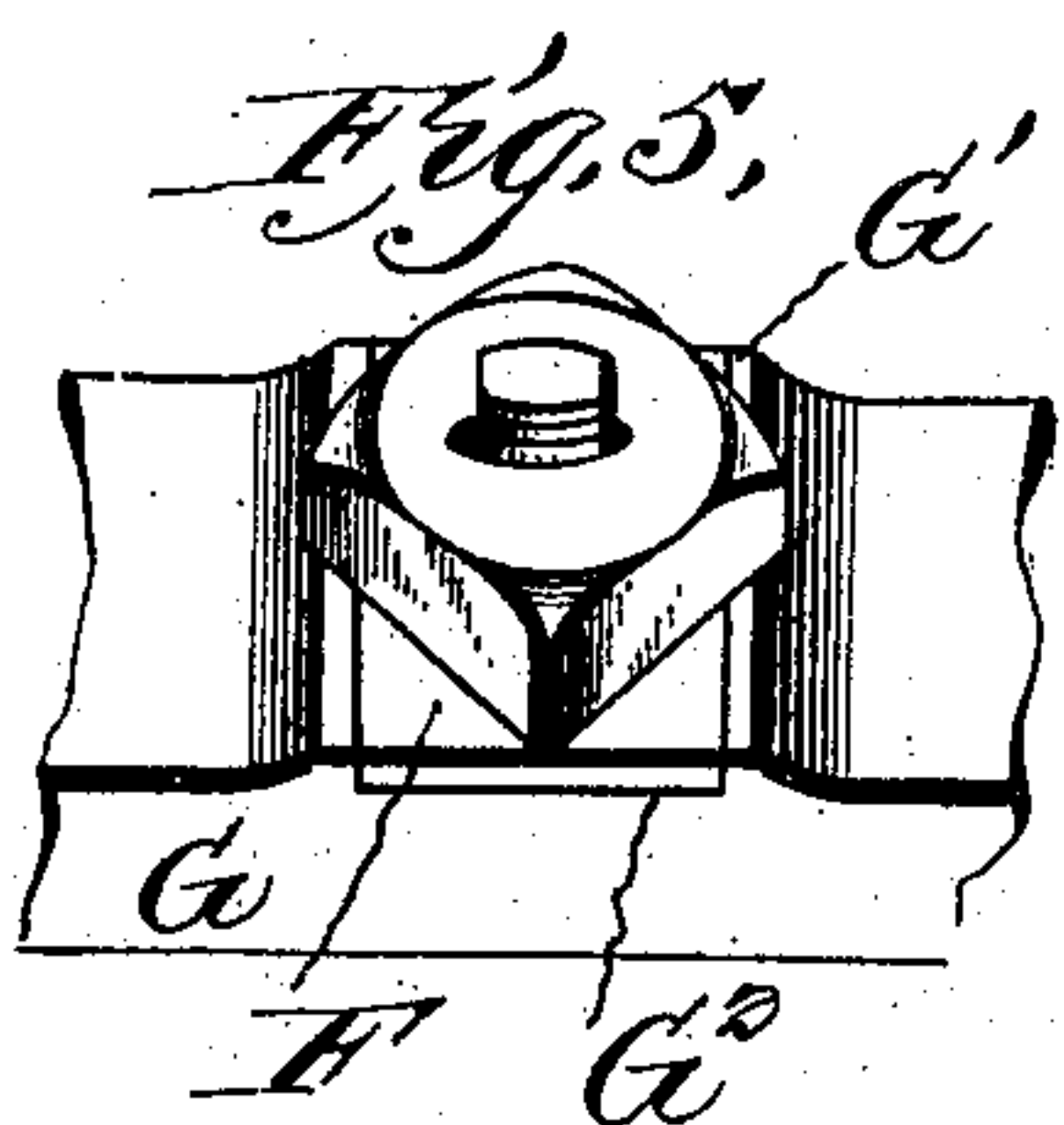
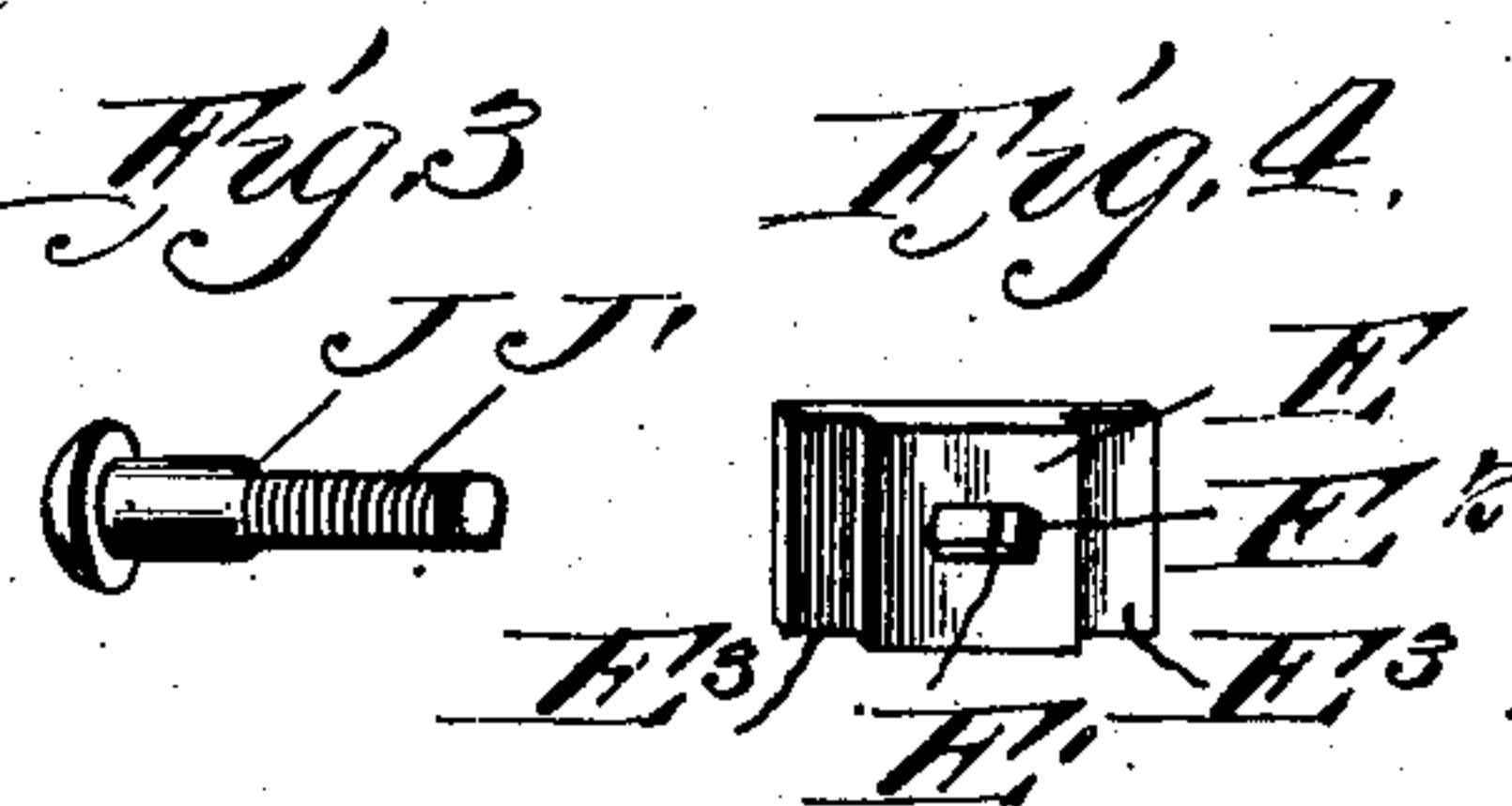
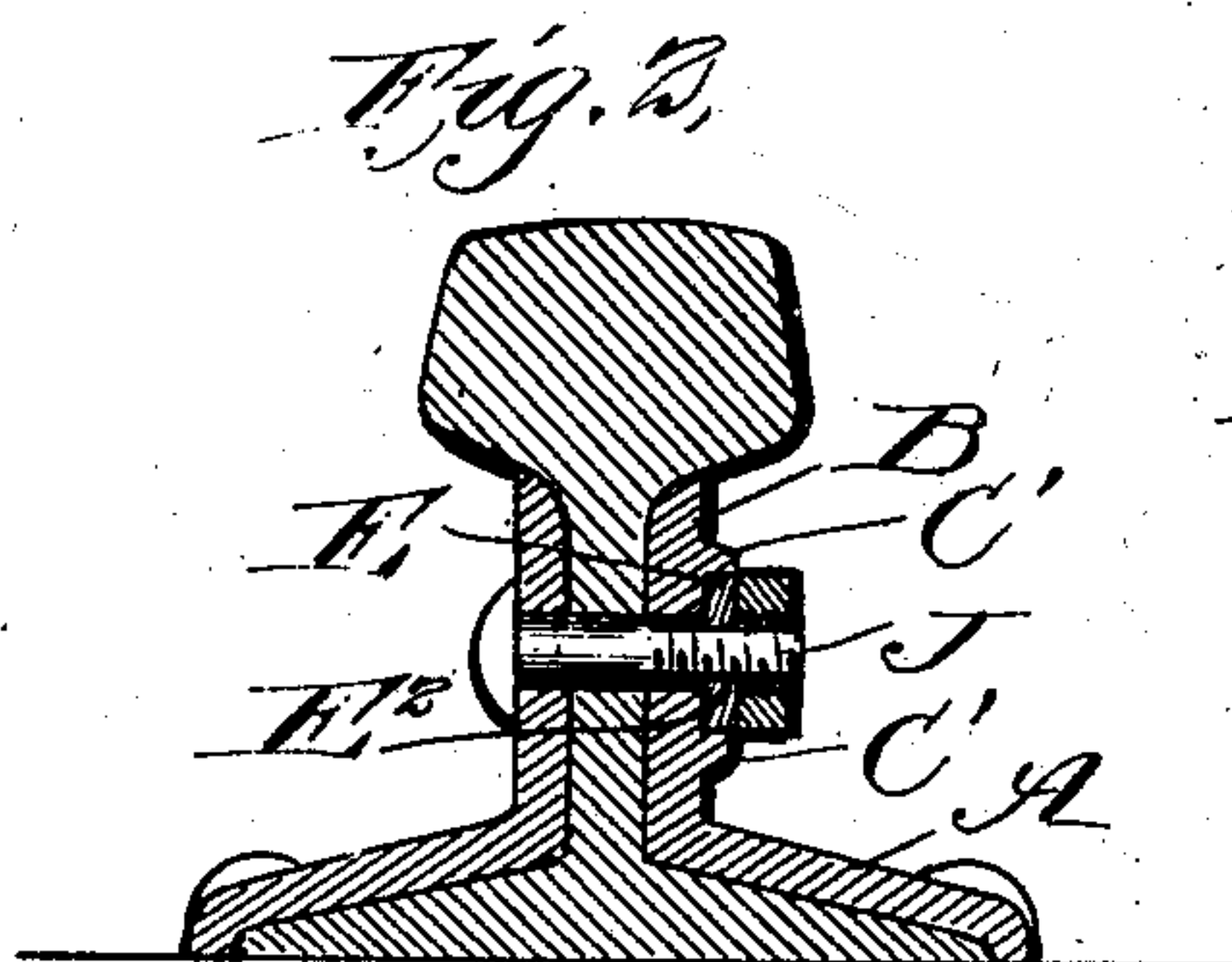
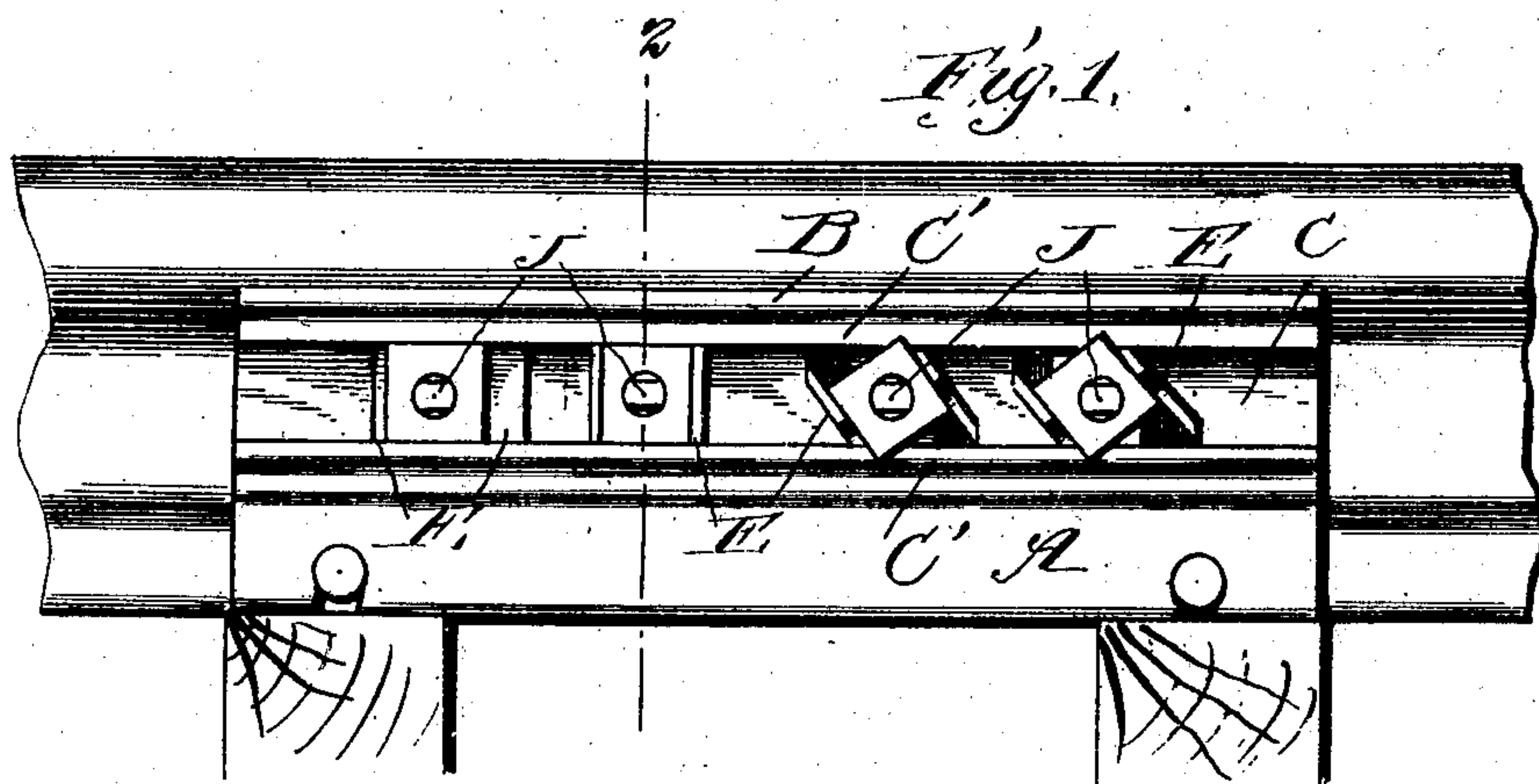
PATENTED OCT. 20, 1903.

H. E. OWEN & A. J. SHAW.

NUT AND BOLT LOCK.

APPLICATION FILED JULY 18, 1903.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HANDEL E. OWEN AND ARTHUR J. SHAW, OF SPOKANE, WASHINGTON.

NUT AND BOLT LOCK.

SPECIFICATION forming part of Letters Patent No. 742,057, dated October 20, 1903.

Application filed July 18, 1903. Serial No. 166,095. (No model.)

To all whom it may concern:

Be it known that we, HANDEL E. OWEN and ARTHUR J. SHAW, citizens of the United States, and residents of Spokane, in the county of Spokane and State of Washington, have made certain new and useful Improvements in Nut and Bolt Locks, of which the following is a specification.

This invention is an improvement in nut and bolt locks, being in the nature of devices by which to fasten the bolt and the nut; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a rail-joint provided with our improvements. Fig. 2 is a cross-section on about line 2 2 of Fig. 1. Fig. 3 is a detail view of the bolt. Fig. 4 is a detail view of the locking-plate. Fig. 5 is a detail perspective view of a portion of the fish-plate or other abutment with the locking-plate, bolt, and nut applied. Fig. 6 shows a somewhat different form of abutment in connection with the bolt, nut, and locking-plate. Fig. 7 is a detail perspective view of the construction shown in Fig. 5 with the locking-plate adjusted to lock the nut and bolt; and Fig. 8 is a detail perspective view illustrating the bolt, nut, and locking-plate in connection with a flat abutment.

In Figs. 1 and 2 the abutment is in the form of a fish-plate for use on rail-joints, the fish-plate A having the upright wing B grooved longitudinally at C to form a seat for the locking-plate E. The locking-plate E is shown in detail in Fig. 4 and is provided with a central thickened portion E', through which is formed the flattened opening E², and with the end wings E³, projecting from the opposite ends of the thickened portion E' and adapted to be bent up alongside the nut, as will be understood from Fig. 1 of the drawings. We prefer to provide this thickened portion E', as it forms a firm seat for the nut, at the same time furnishing the reduced end portions E³, which can be readily bent up alongside the nut; but it will be understood that the locking-plate may be as shown at F in Figs. 5, 6, 7, and 8 and be of equal thickness throughout.

In Fig. 5 the abutment G is in the form of a plate having the ribs G' raised above its

surface and forming the recess or groove G² to receive the locking-plate. It will be noticed that in Figs. 1 and 2 the groove or seat C is also formed by ribs C', similar to the ribs G' in Figs. 5 and 7.

In Fig. 6 we dispense with the rib construction and form the recess H' directly in the face of the abutment H, both said constructions (shown in Figs. 5 and 6) operating to prevent any turning of the locking-plate.

In Fig. 8 the locking-plate F is not seated in the abutment I, but is free to turn thereon, the plate F being held from turning on the bolt by the means presently described and the corners or ends of said plate F being in practice turned up alongside the nut to lock the same, as will be described.

The bolt J has its threaded portion flattened at J' to fit the opening E' of the locking-plate whether said plate be constructed as shown in Fig. 4 or as shown in Figs. 5 to 8, so that when the bolt projects through the opening E² it will be held from turning in the said opening. Then when the end wings or corners of the locking-plate are turned up alongside the nut the latter will be locked from turning on the bolt, so that by one device we fasten both the bolt and nut from independent turning, and when the locking-plate is seated in a groove or recess in the face of the abutment and is thereby held from turning upon the said abutment the one device locks the bolt from turning and locks the nut from turning and operates to hold the parts firmly and rigidly in position.

The construction is simple, easily operated, and will be found to effectually prevent any accidental turning of the nut or of the bolt independent of the nut in the use of the invention.

In producing the channel or recess in the face of the abutment for the locking-plate we may prefer to employ the rigid construction shown at C' and G', as thereby we form the seat for locking the plate from turning without any weakening of the abutment.

Manifestly the locking-wing may be turned up flat against the side of the nut, as shown in connection with the two nuts to the left in Fig. 1, or at the corners against the diagonal faces of the nut, as shown at the right in Fig. 1.

At the present time nearly all structural work is being made of steel, and the cheapest construction necessitates use of round holes for bolts. By our invention we are able to
5 use a round bolt to fit such openings, forming the bolt with the flattened threaded portion to fit the flattened opening in the locking-plate, thus furnishing a nut-and-bolt-locking device which can be applied with the greatest
10 economy to structural work, whether it be in bridge or other structures. While round-head bolts are in general use, it is understood nothing herein is to prevent ordinary bolts having flattened or square heads being used.
15 Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the abutment provided with the longitudinal ribs forming a
20 depressed channel or recess for the locking-plate, to keep the same from turning, the bolt having its threaded portion flattened, the locking-plate having an opening conforming to the flattened portion of the bolt and
25 fitting thereon whereby the bolt is held from

turning in the plate, said locking-plate having the central thickened portion to receive the pressure of the nut and the wings of reduced thickness projecting from the opposite
30 ends of said central portion and adapted to be turned up alongside the nut, and the nut turning on the bolt up against the locking-plate and held from turning on the bolt by the end wings of said plate substantially as
35 set forth.

2. The combination of the abutment having a groove or channel for the locking-plate, the locking-plate fitting in said groove or channel and having a central thickened portion provided with a flattened opening for
40 the bolt and with end wings of reduced thickness to be bent up alongside the nut, the bolt having its threaded portion flattened to fit the flattened opening of the locking-plate and the nut substantially as set forth.

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Witnesses:

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