(No Model.) 2 Sheets—Sheet 1.

W. WELLS.

NUT LOCK.

No. 434,574. Patented Aug. 19, 1890.

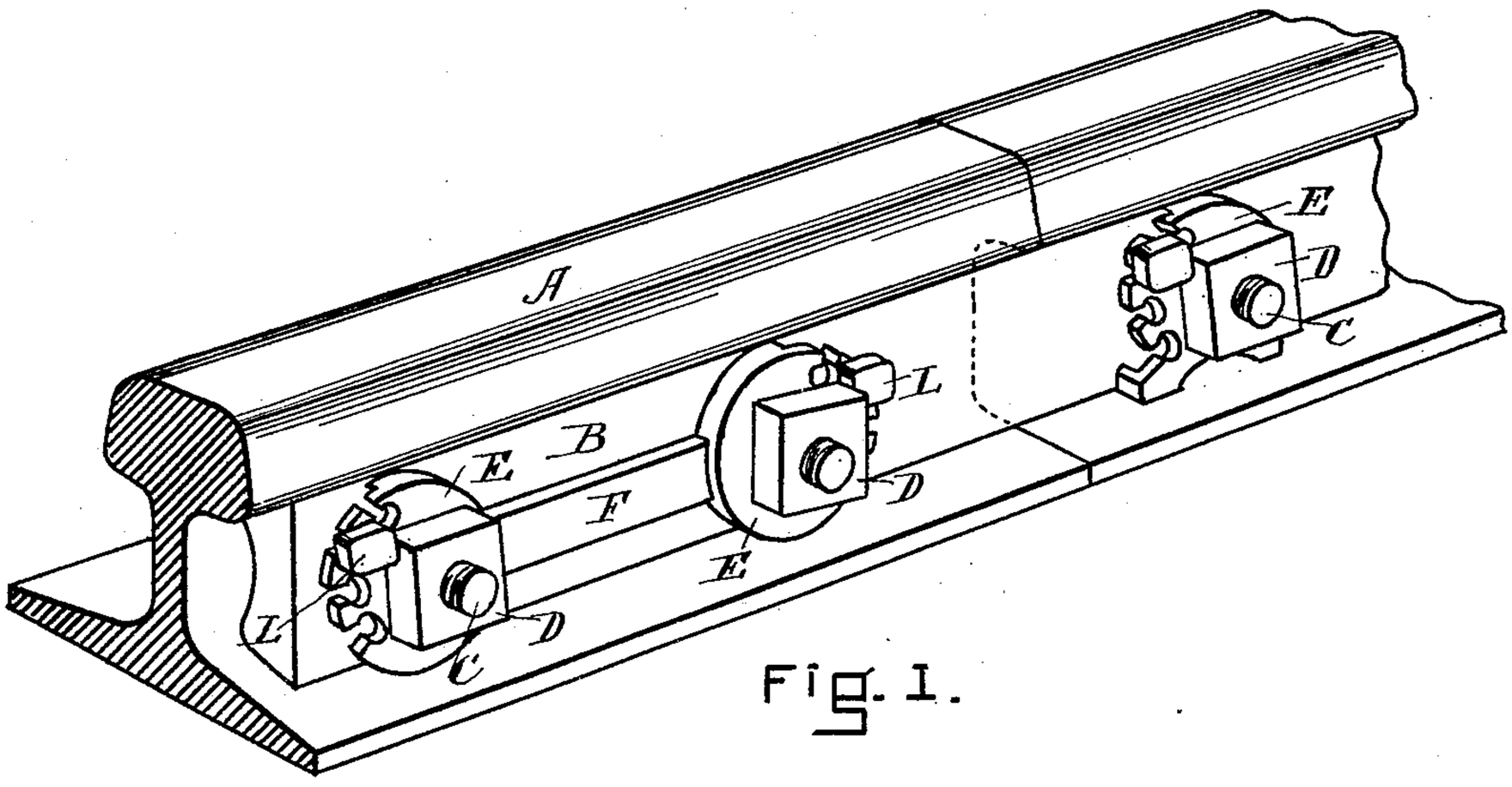

Fig. 1.

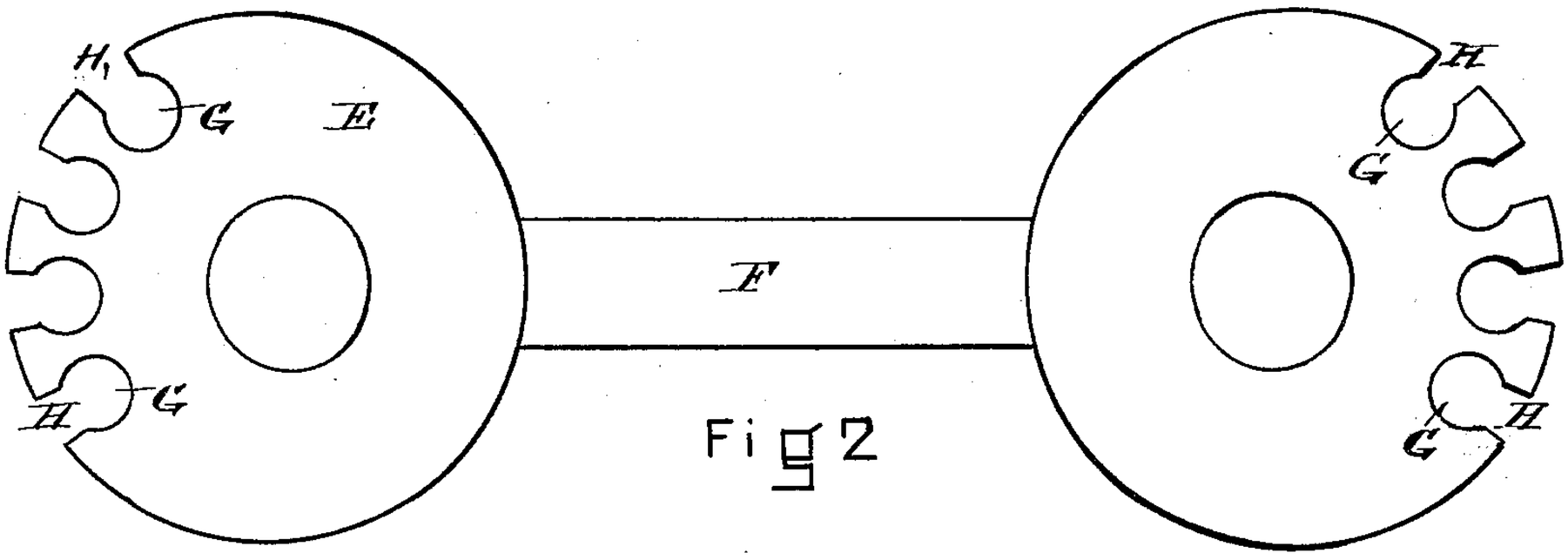

Fig 2

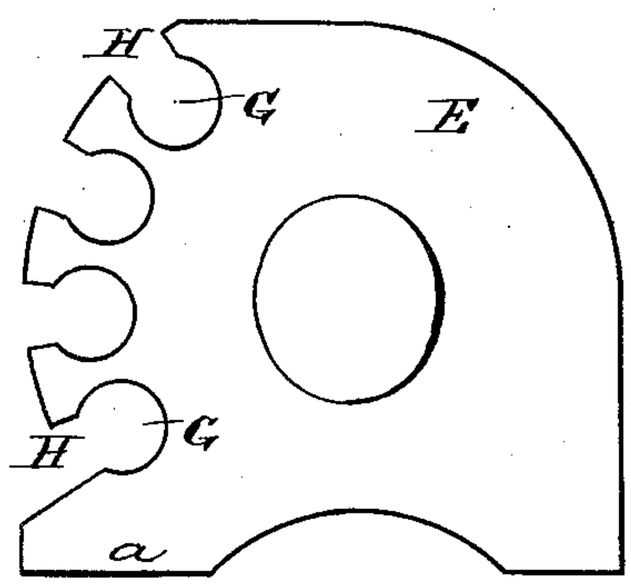

Fig. 3

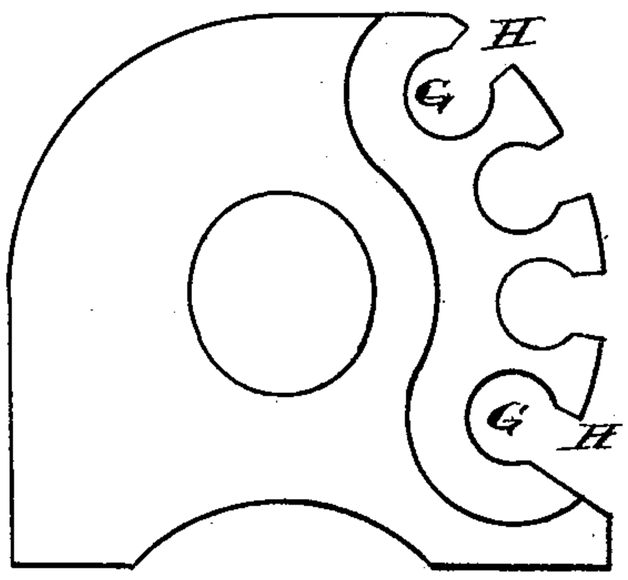

Fig. 4

WITNESSES

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INVENTOR

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by his attorney

Alex. L. Hayes

(No Model.) 2 Sheets—Sheet 2.

W. WELLS.

NUT LOCK.

No. 434,574. Patented Aug. 19, 1890.

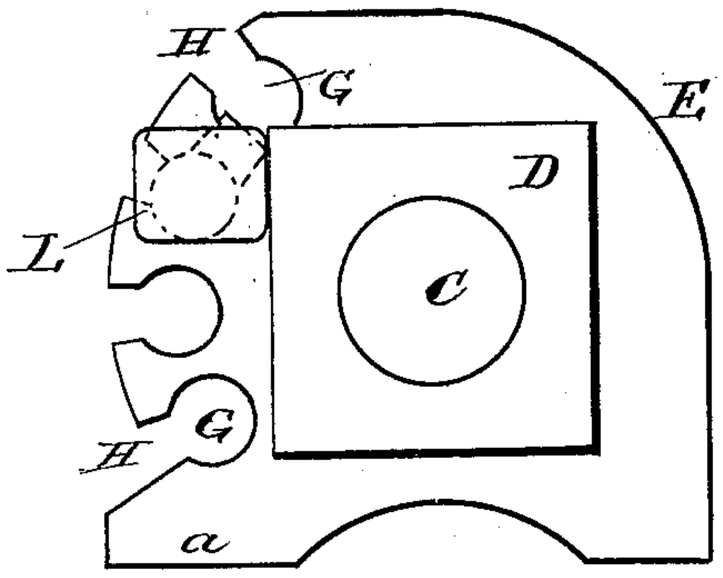

Fig. 5.

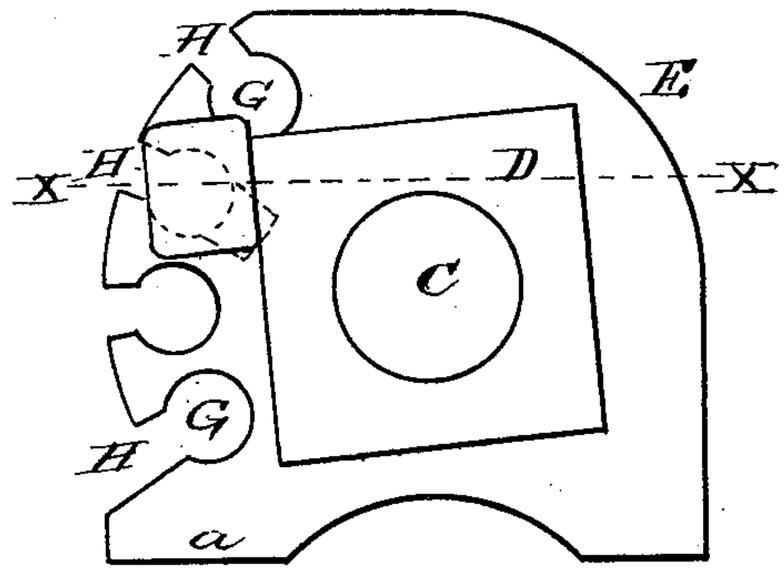

Fig. 6.

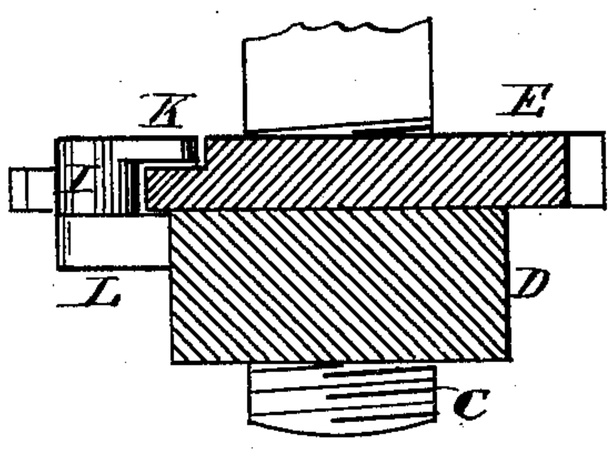

Fig. 7.

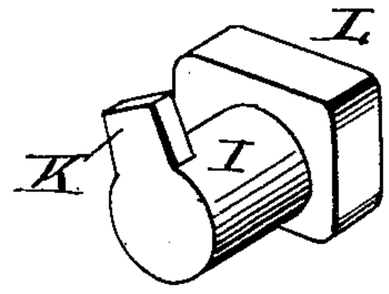

Fig. 8

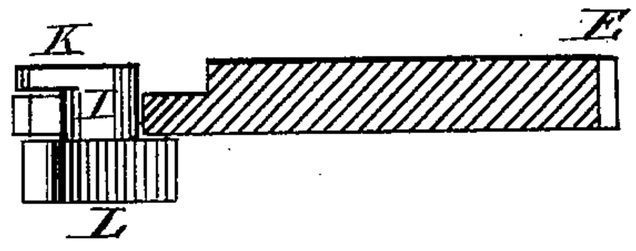

Fig. 9.

WITNESSES

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INVENTOR

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by his attorney

Alby. L. Hayes

UNITED STATES PATENT OFFICE.

WEBSTER WELLS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE MECHANICAL MANUFACTURING COMPANY, OF NASHUA, NEW HAMPSHIRE.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 434,574, dated August 19, 1890.

Application filed January 3, 1890. Serial No. 335,798. (No model.)

To all whom it may concern:

Be it known that I, WEBSTER WELLS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Nut-Locks, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention consists in the combination, substantially as and for the purpose hereinafter more fully set forth, with the nut and bolt, of a non-rotating plate placed behind the nut on the bolt and extending beyond the sides of the nut, a series of key-hole shaped perforations or openings in the surface of the plate not covered by the nut, a recess in the back of the plate under these perforations or openings, and a pin or key insertible into these perforations or openings and having on one end a projection or lug and on the other a head with one or more straight sides, one of which, when the pin is turned so that it cannot be removed and the nut is turned slightly off, bears against one of the sides of the nut, and thus firmly locks it.

In the accompanying drawings I have represented my nut-lock as used for locking the nuts on the fish-plate of railroads; but it may be applied to the nuts of the bolts used in other structures.

In the drawings, Figure 1 is a view in perspective of a railroad-rail having the nuts of the fish-plate bolts locked by my device. Fig. 2 is a view in elevation of plates made non-rotating by connecting two adjacent plates by means of a horizontal bar. Fig. 3 is a view in elevation of the front of a plate made non-rotating by the provision of a straight side which bears upon the base of the rail or fish-plate. Fig. 4 is a view in elevation of the back of this plate. Fig. 5 is a view in elevation showing the nut locked in one position. Fig. 6 is a view in elevation showing the nut locked in another position. Fig. 7 is a sectional view through the line *x x*, Fig. 6. Fig. 8 is a detailed view of the pin or key in perspective, and Fig. 9 is a sectional view showing the position of the pin or key when it is first inserted.

In the several figures the same letters refer to the same parts.

Referring to the drawings, A is the railroad-rail.

B is the fish-plate.

C is the bolt.

D is the nut, and E is the non-rotating plate. This plate is placed on the bolt between the nut and the fish-plate and has a larger area than the face of the nut. It must be so constructed that it cannot turn upon the nut, and this result is accomplished when the plate is circular, as shown in Figs. 1 and 2, by connecting two adjacent plates by a horizontal bar F; or, if the plate is not circular, by the provision of a straight side *a*, as shown in Figs. 1, 3, 4, 5, and 6, which side rests upon base of the rail or fish-plate. The perforation in the plate through which the bolt passes may be elliptical in order to permit the side of the plate to rest upon the rail or fish-plate, whatever may be the distance between the bolt and this base. In the face of the plate in the space not covered by the nut are a series of key-hole-shaped perforations or openings G for the reception of the pin or key I, the end of which is provided with a lug K, so that when the pin or key is inserted into the perforation and turned it cannot be removed. This pin or key has on its other end a head L, having one or more straight sides or facets, one of which when the pin or key is inserted and turned bears against one of the sides of the nuts.

In the drawings I have shown the key-hole-shaped perforations as formed by radial openings G in the plate at equal distances apart and contracted near the periphery of the plate at H. This is a convenient method of making the perforations or openings; but they need not necessarily be so made. On the back of the plate behind the openings there is a recess which enables the lug K to be turned between the back of the plate and the fish-plate.

The head L of the pin or key is shown as rectangular in shape and as placed eccentrically to the pin, so that each of the sides of the head will be at a different distance from the axis of the pin. I adopt this construction for the reason that it enables the nut to be locked in a greater number of positions than if all the sides of the head were at the

same distance from the axis of the pin or key. The side of the head which bears against the side of the nut when the nut is locked must be in such relation to the projecting lug that when the nut is locked the pin or key has been turned so that it cannot be removed, and if this result is accomplished it is immaterial how many straight sides the head may possess.

The operation of the device is as follows: After the nut has been turned to the desired extent upon the bolt the pin is inserted into that one of the perforations or openings which is in such relation to the position of the nut, as before stated, that when the pin is turned the nut will have to be turned off to the least extent to bring one side of the nut against one of the sides of the head. The pin is then turned and the nut turned slightly off until one of its sides bears against one of the sides of the head, when the nut will be locked, for the reason that the pin or key cannot be removed from its socket until the nut has been turned back and the pin turned so as to bring the lug K under the narrow part H of the opening. In Fig. 5 the nut is shown as locked by bearing against one of the shorter sides of the head. In Fig. 6 the nut is shown as locked in another position by bearing against the longer side of the head. It will thus be seen that by having the sides of the head at different distances from the axis of the pin or key and by having a series of perforations or openings in the plate provision is made for locking the nut in the various positions that it may take when turned to any desired extent on the bolt.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, substantially as and for the purpose set forth, of the nut, the non-rotating plate placed behind the nut on the bolt and extending beyond the nut, a series of key-hole-shaped perforations or openings in this plate in the part not covered by the nut, a recess on the back of the plate behind the perforations, and a pin or key insertible into these perforations and having on one end a lug or projection and on the other end a head with straight sides, each of which is at a different distance from the axis of the pin or key.

2. The combination, substantially as and for the purpose set forth, of the nut, the non-rotating plate placed behind the nut on the bolt and extending beyond the nut, a series of radial openings in the plate contracted near the periphery of the plate, a recess on the back of the plate under these perforations, and a pin or key insertible into these radial openings and having on one end a lug or projection and on the other end a head having one or more straight sides.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 31st day of December, A. D. 1889.

WEBSTER WELLS.

Witnesses:
THOMAS F. WELLS,
ALEX. L. HAYES.