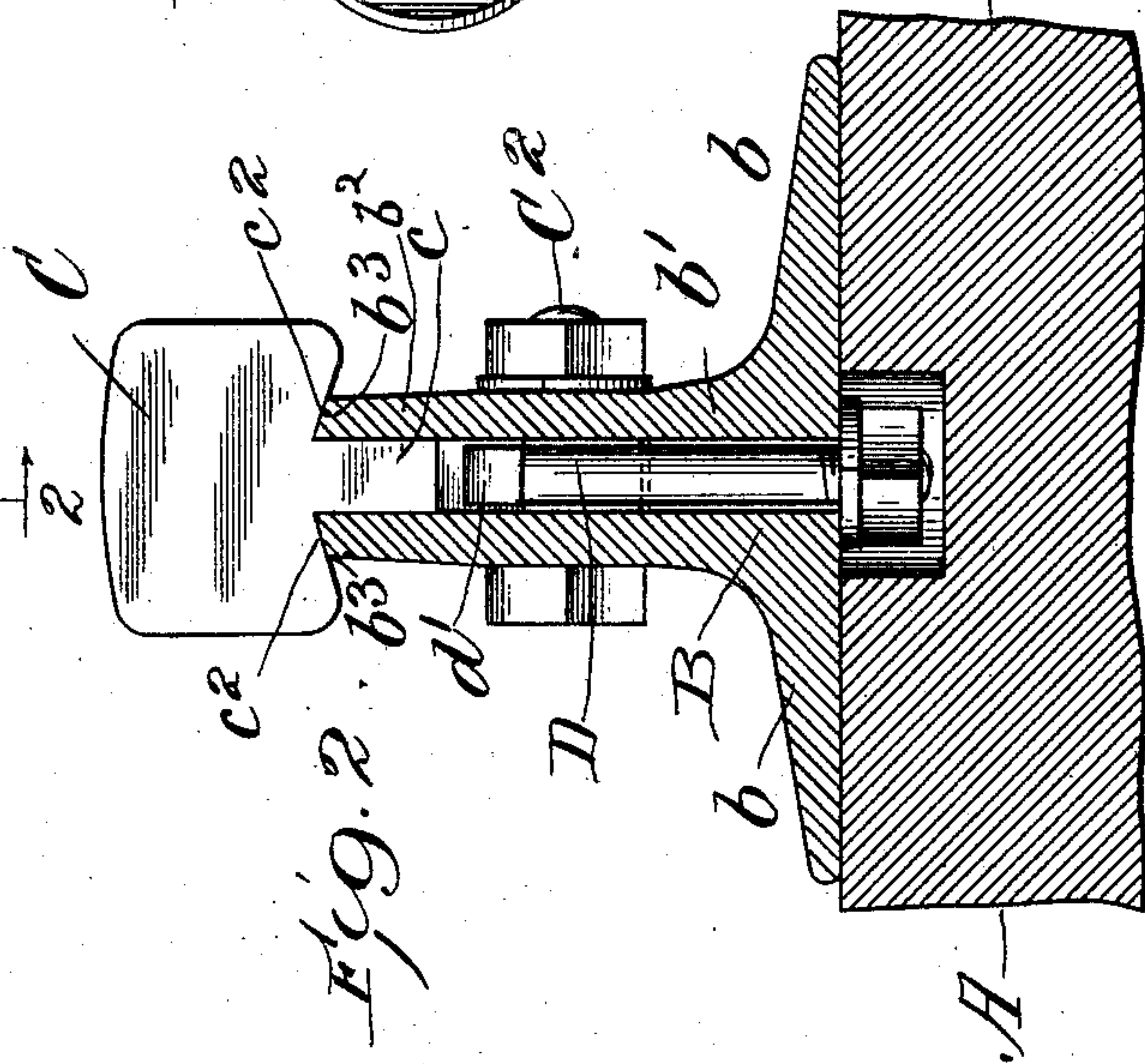
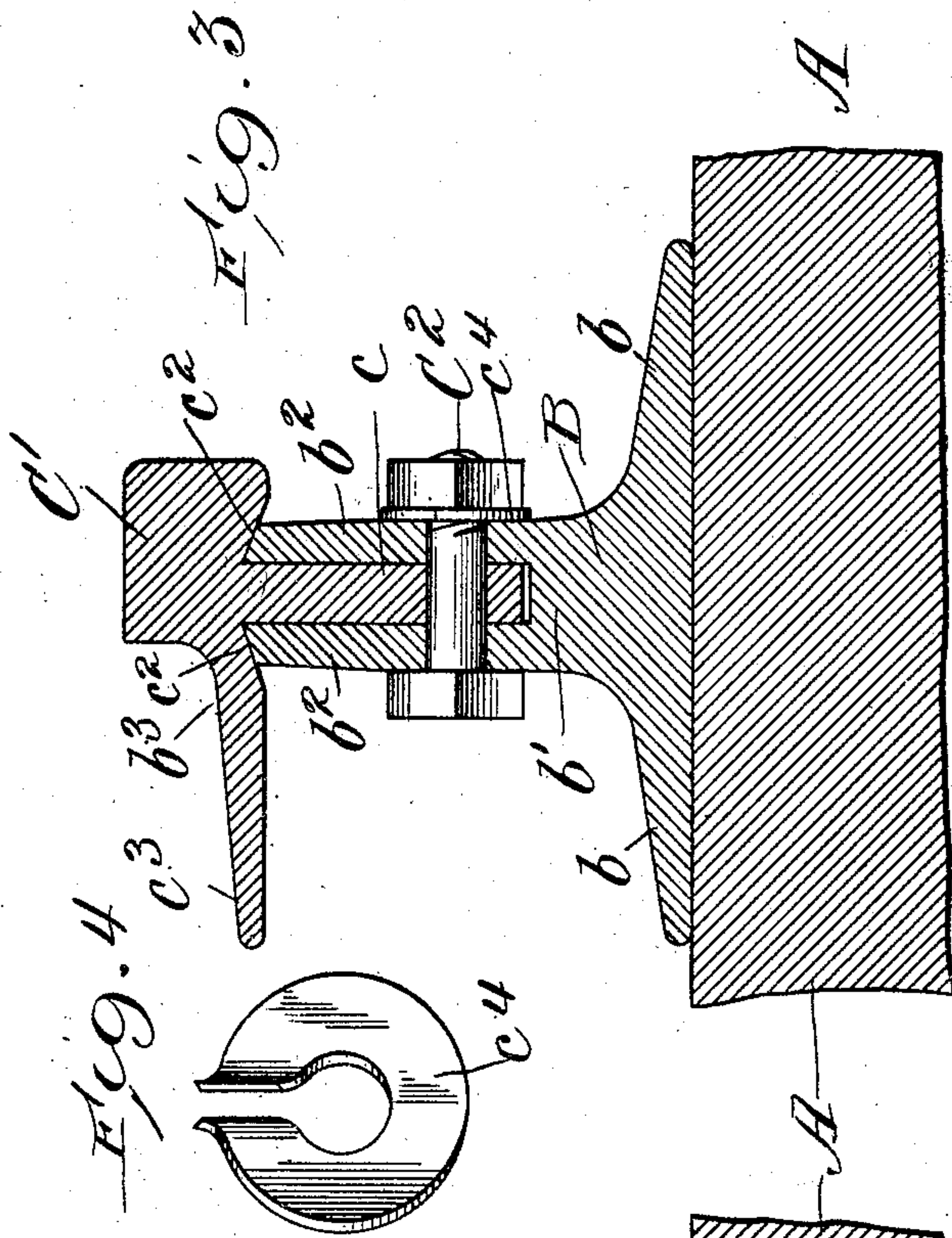
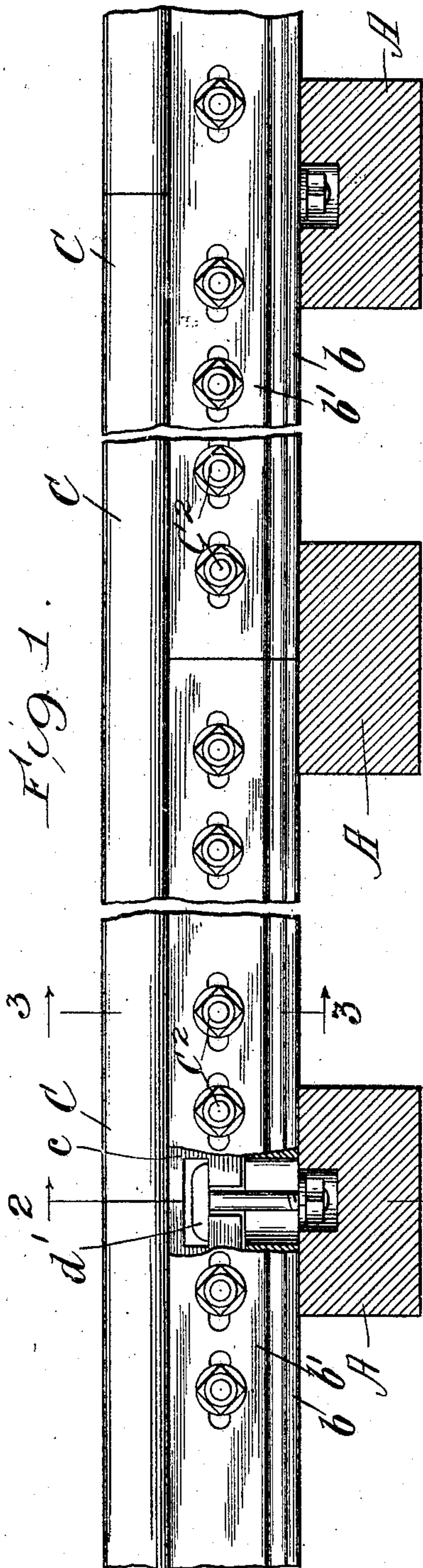


No. 788,505.

PATENTED APR. 25, 1905.

E. HAYWARD.
RAILWAY RAIL.

APPLICATION FILED JUNE 25, 1904.



Witnesses:
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UNITED STATES PATENT OFFICE.

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RAILWAY-RAIL.

SPECIFICATION forming part of Letters Patent No. 788,505, dated April 25, 1905.

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To all whom it may concern:

Be it known that I, EUGENE HAYWARD, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Railway-Rails; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in railway-rails.

Heretofore railway-rails have been rolled continuously into the various forms required, dependent upon the character of the road for which the same are used, and the abutting ends of the same are fastened together by fish-plates or other means adapted to afford a joint. In such constructions the track soon becomes rough, owing to the weight of the traffic depressing the rail ends at the joints, and to obviate this rail-joints of many kinds and of a more or less rigid nature have been devised, some of which afford a shoe engaging beneath the flanges of the rail and adapted to be engaged upon two adjacent ties. The use of such rail-joints, however, has not obviated the difficulty, and constant care and the expenditure of large sums of money is necessitated to keep the tracks in repair and to prevent depressions at the joints.

The object of this invention is to provide a rail of a continuous nature adapted to permit of contraction and expansion with changes of temperature, but rendering, however, the rails of which the track is formed continuous from one end of the track to the other, if desired, except at switches and crossings.

It is also an object of the invention to provide a novel rail-base adapted for use with rail-heads of different forms and affording a very strong and rigid construction.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a fragmentary side elevation of a device embodying my invention, showing the same broken trans-

versely. Fig. 2 is an enlarged section taken on line 2 2 of Fig. 1. Fig. 3 is a section taken on line 3 3 of Fig. 1, but showing a different form of rail-head. Fig. 4 is a face view of a nut-lock washer adapted to be used in connection with my invention.

As shown in said drawings, A indicates the ties or other supports upon which the rails are supported.

B indicates the rail-base, each of which, as shown, is provided with the usual or any preferred laterally-directed flanges b , adapted to rest upon the ties. A longitudinal upwardly-directed central web b' is provided on each rail-base, provided at its top with a deep longitudinal groove or channel therein extending to near the bottom of the web b' and affording on each side of the same parallel upwardly-directed fish-plates b^2 , integral with said web b' and which taper inwardly on their outer side and at the top are provided with outwardly and downwardly beveled edges or faces, as shown at b^3 . The rail-base and the fish-plates b^2 are made of a length to correspond with the length of the rail-head $C C'$ to be used therewith, and said rail-base is supported upon the ties, as has been usual, with track-rails and may be spiked or otherwise secured thereto, as preferred.

The rail-heads may be of any preferred shape, and on the under side of each is provided a longitudinal and downwardly-extending integral rib c , which extends for the entire length of the rail-base and is shaped complementally with the seat or channel between the fish-plates b^2 . The rail-head on its under side is provided with upwardly and inclined faces c^2 , which fit upon the inclined faces at the upper edge of the fish-plates b^2 , affording a broad support for the rail-head, so shaped that increase of downward pressure jams the fish-plates closer to the rib c . Bolt-apertures are provided through the fish-plates b^2 and through the rib c of the head, as shown, each of which is extended or slotted longitudinally of the rail to afford means permitting expansion and contraction and through which fish-bolts C^2 of the usual or any desired kind are engaged. The rail-

heads are secured on the rail-bases so that the joints between abutting ends of the one are positioned centrally of the other, and means are provided for positively engaging the ends of the ribs *c* of each rail-head to the base. For this purpose a bolt *D* extends through a vertical aperture longitudinally slotted in each rail-base into the channel between the fish-plates and between ends of the ribs *c* of each rail-head, as shown in Figs. 1 and 2. Said bolt is provided with an elongated head *9'*, which engages in notches in the adjacent ends of said ribs *c*, so that when the nut on said bolt is set up beneath the rail-base the ends of the rail-head are drawn downwardly into positive bearing upon the fish-plates. Obviously any desired type of head may be used in connection with my invention. The rail-head *C'*, as shown in Fig. 3, is provided with a laterally-directed flange *c'*, such as is common in street-car rails, adapted to be finished into a pavement or the like.

The operation is as follows: From the construction described it is obvious that the rail-base and head when united afford a construction of great rigidity. Said fish-plates *b'* constitute, in effect, a continuous support for the rail-head and a reinforcement for the rib *c* of the rail-head. The fish-bolts *C'* extending therethrough and usually provided with suitable lock-nuts, such as the Verona washer, (indicated by *c'* in Fig. 4,) act to hold said rib in positive engagement, while downward pressure of the head of the rail acts to still further jam the upper edges of the fish-plates inwardly.

Inasmuch as the rail-heads and rail-bases break joints, the rail is continuous to the entire length of the same or for whatever length may be desired, each having sufficient strength and rigidity to carry the weight of the passing traffic independent of the other.

While I have described but one form for embodiment of my invention, it is obvious that various details may be modified without departing from the principle thereof, and I do not desire to be limited otherwise than stated by the prior art and as stated in the claims.

I claim as my invention—

1. A continuous rail comprising a continuous-rail base, a rail-head, a channel in one of said parts, a complementary rib on the other and internal bolts adapted to engage said parts together.

2. The combination with a rail-base of a rail-head of corresponding length, interfitting parts on said rail base and head and bolts extending vertically therethrough adapted to engage the same together, said rail-heads and said rail-bases being arranged for the abutting ends of the one to lie centrally of the other.

3. A continuous rail comprising a rail-base and a rail-head of equal length interfitting parts thereon, fish-bolts extending there-

through and adapted to rigidly connect the same, said rail-bases and rail-heads being so arranged that the ends of one are positioned remote from the ends of the other and a bolt engaged vertically in notches at the ends of the rail-heads acting to draw the same into positive engagement with the rail-base.

4. A rail-base having parallel fish-plates thereon extending approximately the length thereof and provided with elongated apertures therethrough intermediate said plates.

5. A rail-base having parallel integral fish-plates thereon extending for the entire length thereof and provided centrally with an elongated aperture intermediate said plates.

6. The combination with a rail-base, of parallel fish-plates integral therewith and having slotted bolt-holes therein, each fish-plate having a downwardly and outwardly beveled top adapted to engage beneath the rail-head and a bolt extending upwardly through said base intermediate said plates.

7. The combination with a longitudinally-channeled rail-base of a rail-head, a longitudinal rib on the rail-head, bolts extending transversely through the rail-base and rib, and a bolt extending vertically through the rail-base and engaging between the abutting ends of the rail-heads.

8. A continuous railway-rail comprising a plurality of rail-bases and rail-heads, of uniform length, each interfitting the other and arranged with the abutting ends of each disposed centrally of the other and bolts engaging the same into a continuous rail with a bolt extending upwardly through the base and engaging in seats in the ends of said heads.

9. A rail-head having a longitudinal rib thereon adapted to interfit a rail-base, said head having a notch in each end of said rib and having a bearing-surface on each side the rib.

10. A rail-head having a longitudinal rib on the under side thereof adapted to engage in a channeled rail-base, said rib being provided with a recess in each end thereof and inwardly-bearing faces on each side the rib adapted for engagement with complementary faces on the rail-base.

11. In a continuous rail, a plurality of rail-bases and rail-heads, each interfitting the other and arranged with the abutting ends of one intermediate the ends of the other, and means positively engaged in each rail-base, engaging between the abutting ends of the rail-heads and locking both to the base.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

EUGENE HAYWARD.

Witnesses:

C. W. HILLS,
W. W. WITENBURY.