No. 686,236. Patented Nov. 5, 1901.

G. W. McKIM.

BOLT CLAMP.

(Application filed Apr. 12, 1901.)

(No Model.)

Fig. 1.

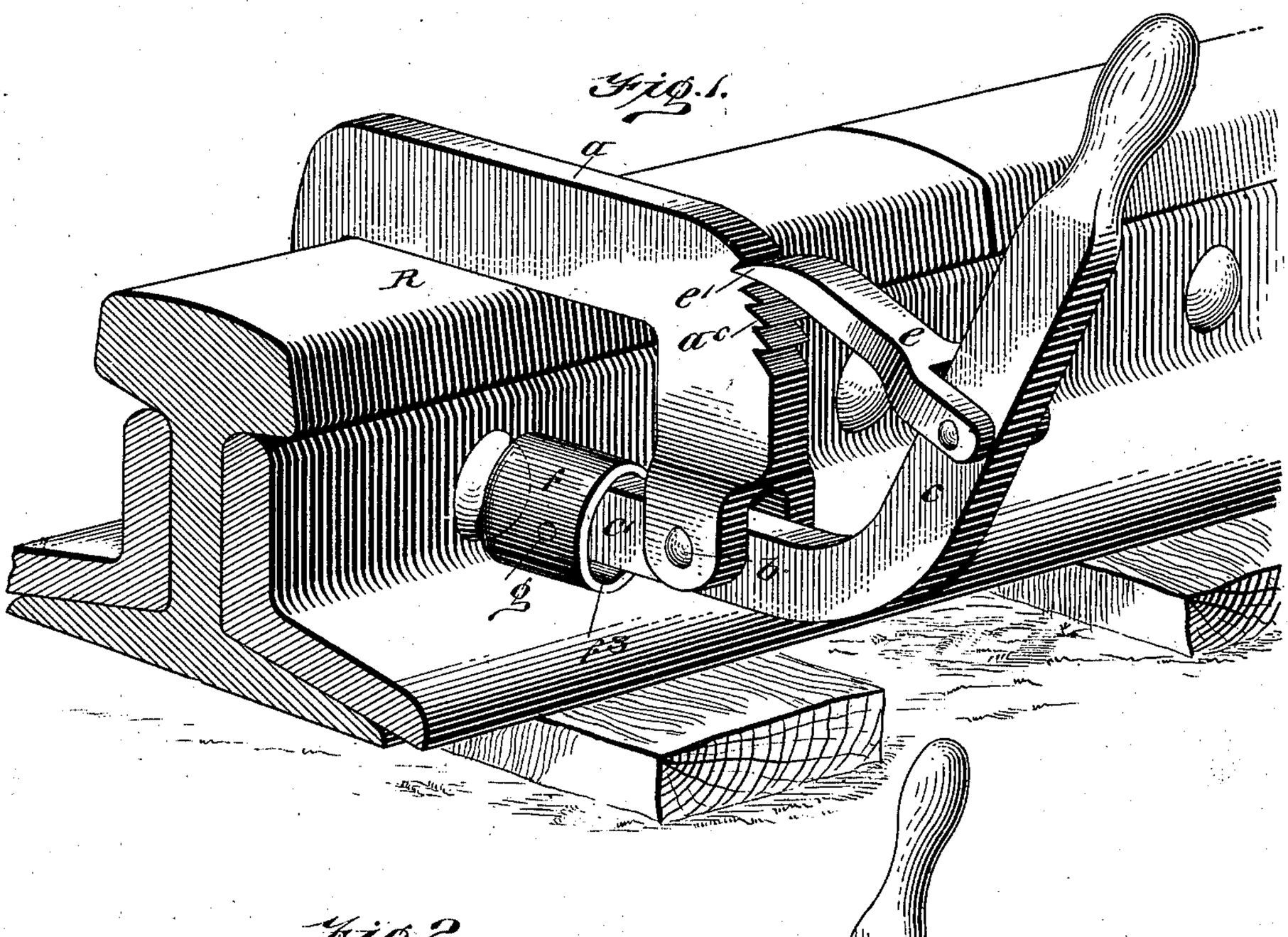

Fig. 2.

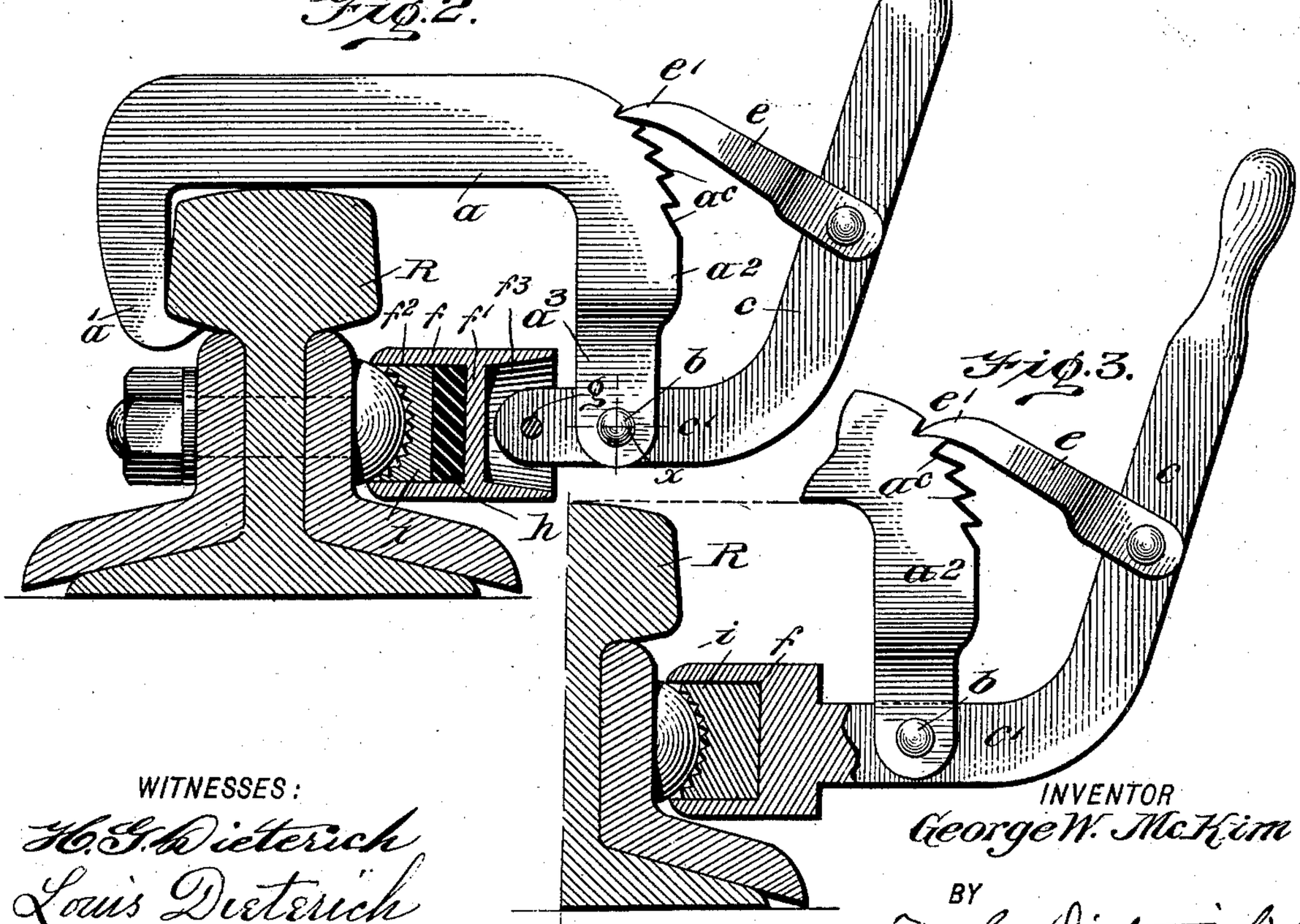

Fig. 3.

WITNESSES:

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BOLT-CLAMP.

SPECIFICATION forming part of Letters Patent No. 686,236, dated November 5, 1901.

Application filed April 12, 1901. Serial No. 55,500. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. McKIM, residing at Martins Ferry, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Bolt-Clamps, of which the following is a specification.

This invention relates to improvements in that type of bolt-clamps used for holding bolts from turning when applying nuts, and more especially for holding worn bolts used for connecting rail-splices; and the said invention primarily seeks to provide a very simple but powerful clamping means capable of being easily manipulated and adapted to be used in connection with any ordinary type of nut-turning wrench.

My invention comprehends in its general arrangement a clamping-body adapted to rest upon and clamp the rail and having a pendent member adapted when the clamp is in its operative position to lie approximately in a plane with the bolt, whereby a direct clamping pressure on the bolt-head can be the more effectively obtained, a suitable pawl device being coöperatively mounted on the pressure-lever to hold up the clamp-socket against the bolt, and in its more subordinate features my invention includes a novel manner in which the bolt presser or socket and the lever are pivotally joined, other peculiar combination and detail arrangement of parts being also included in my invention, which hereinafter will be fully explained, and specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a rail with my bolt-clamping mechanism applied. Fig. 2 is an elevation of the same, parts being in section. Fig. 3 is a view of a modified form of parts thereof, hereinafter described.

My improved clamping mechanism embodies a clamp-iron a, one end of which terminates in a claw a', adapted to project under and engage the head of the rail R, as shown. The body of the iron and the claw a' are relatively so arranged that the said body, when the mechanism is fitted in position to operate as in Fig. 1, will lie flat upon the top of the rail. The inner end of the iron a is bent down, as at a^2, and the end a^2 terminates in a bifurcated extension a^3, the ears of which are apertured to receive the fulcrum-bolt b, upon which the presser-bar lever c is fulcrumed. To provide for a powerful leverage action, the fulcrum-point (indicated by x) is approximately in a plane with the center of the bolt d.

The lever c has its lower end terminating in an angle portion c', which when the parts are in their operative position is disposed substantially horizontal, and the said portion c' is apertured to receive the fulcrum-bolt b. In practice the lever extends up to form a convenient handle, and at a point near the end a^2 of the member a a gravity-pawl e is pivotally connected to the lever, the outer end of which terminates in a sharp claw e', adapted to engage with a series of locking-teeth a^c on the opposing edge of member a^2, as shown.

f designates a socket member. This member in the preferred construction is centrally divided by a division member f' to form an inner portion f^2 and an outer portion f^3. In this form of socket the lower end of the presser-lever is projected into the socket portion f^3 and pivotally connected therewith by the pivot-bolt g to produce, as it were, a partial toggle-joint, and thereby permit of a universal fitting of the socket against the bolt-head.

h designates a cushion-block held in the outer socket portion f^3, against which is detachably seated a metal die-block i, having a concaved serrated face to engage and firmly grip the bolt-head when applied thereon. By providing a yielding movement for the bolt-gripping surface permits the lock-pawl to engage its opposing ratchet-teeth to get sufficient pressure to hold the bolt from turning.

While I prefer to provide a yielding surface for the gripper-block and to join the socket with the lever by a toggle-like connection, said socket may be made as an integral part of the lever and the yielding gripper-block omitted, as shown in Fig. 3.

From the foregoing, taken in connection with the accompanying drawings, it is thought the manner in which my invention is used and its advantages will be clearly un-

derstood. The rail-clamping member and the lever devices, togther with the bolt-head-engaging portion, are correlatively so arranged as to permit of the mechanism being applied in the rail and for use in a very simple, convenient, and effective manner and one of such character that they can be used in connection with any of the ordinary means for screwing up the nut.

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

1. A bolt-clamping appliance, comprising a body, adapted to seat upon a rail, and having a claw at one end to engage the rail-head, and a pendent member at the other end, a lever fulcrumed on said pendent end, said lever having a socket to engage the bolt-head, and a detent carried on the lever, and adapted to engage the body member, substantially as shown and for the purposes described.

2. A bolt-clamping appliance, comprising a body portion, adapted to seat on a rail, and having means to grip the rail, a lever fulcrumed on the body, and a bolt-engaging socket pivotally joined to the lever, substantially as shown and for the purposes described.

3. A clamping appliance of the character described, comprising in combination, a body member adapted to seat flat on the rail, having a rail-engaging claw at its outer end, and a pendent portion, a lever fulcrumed in said pendent portion, a socket on the lower end of the lever, and a bolt-gripping block yieldingly held in the socket, for the purposes specified.

4. A clamping appliance of the character described, comprising in combination, a body member, adapted to seat flatwise on the rail, having a rail-engaging claw member at one end and a pendent portion at the other end, a lever fulcrumed on the said pendent portion, a socket, said socket having a pivotal connection with the lower end of the lever, and a cushion-block held in the socket, and a bolt-gripping block held to bear against said cushion, and having its face formed to engage the bolt-head, as set forth.

5. A bolt-clamping appliance, comprising in combination with the body member, adapted to lie flat on the rail, its outer end being shaped to grip under the rail-head, its inner end being curved down into a pendent member, said member having ratchet-teeth; of a lever, the lower end of which terminates in an angle portion, said portion being fulcrumed in the pendent end of the body member, a pawl carried on said lever to engage and automatically lock with the aforesaid ratchet-teeth, a socket fulcrumed on the lower end of the lever, and a bolt-head-gripping block, yieldingly held in the socket, all being arranged substantially as shown and for the purposes described.

GEORGE W. McKIM.

Witnesses:
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J. T. HANES.