

No. 837,246.

PATENTED NOV. 27, 1906.

R. E. NOBLE.
BIT LINK FOR CHAINS.
APPLICATION FILED APR. 23, 1906.

Fig. 1

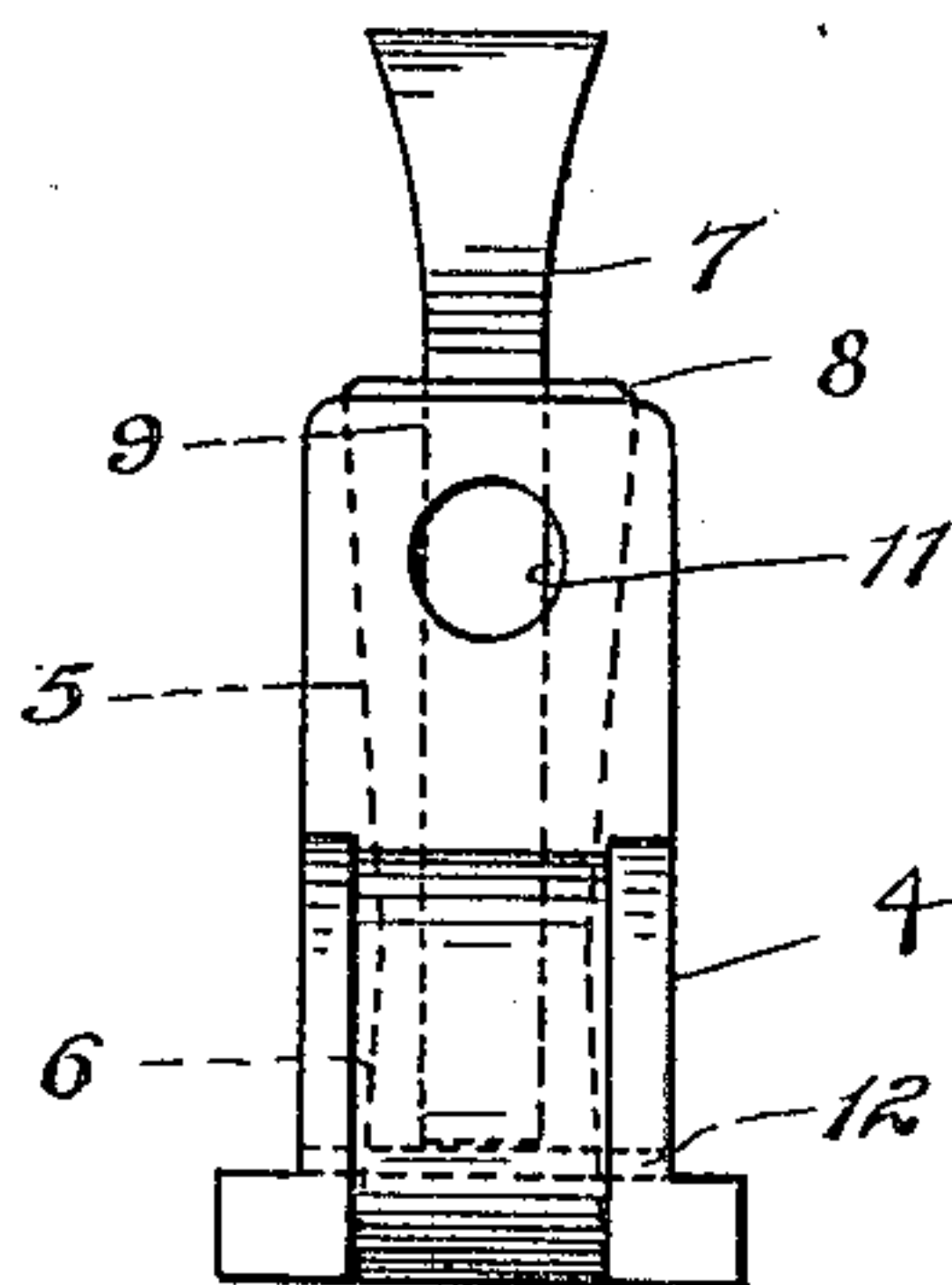


Fig. 2

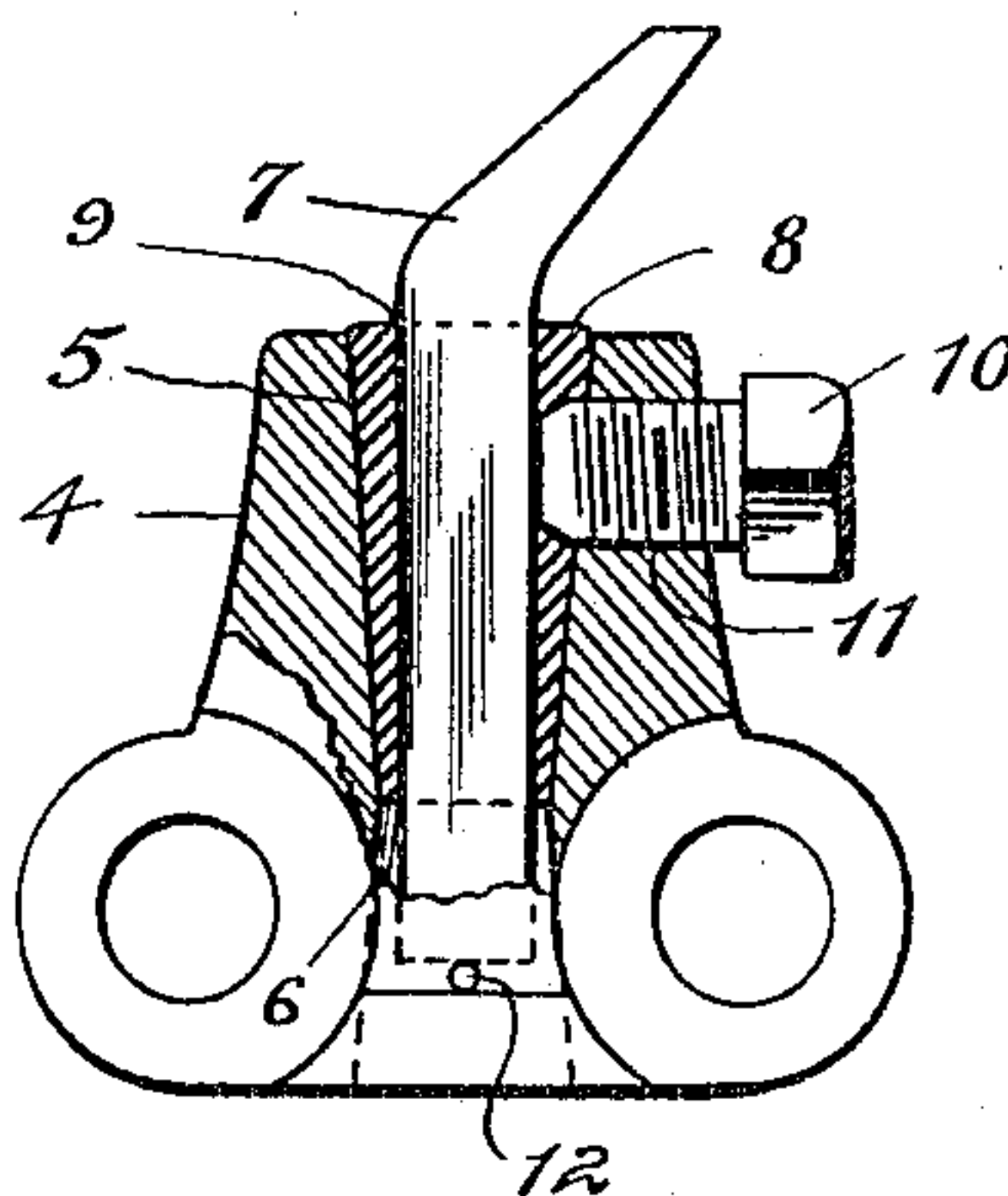
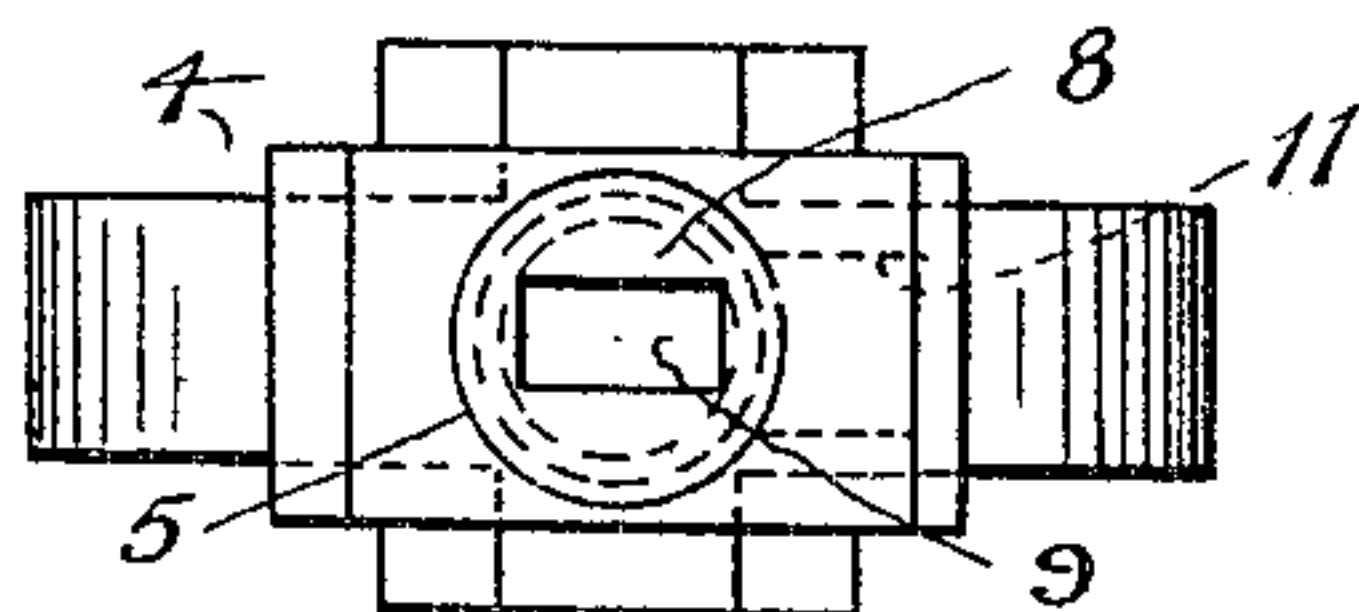


Fig. 3



Witnesses:

W. J. Penstemon
Carl A. Crawford

Inventor,

Ralph E. Noble
By *Glenn S. Noble*
Att'y.

UNITED STATES PATENT OFFICE.

RALPH E. NOBLE, OF CHICAGO, ILLINOIS, ASSIGNOR TO MORGAN-GARDNER ELECTRIC COMPANY, OF CHICAGO, ILLINOIS.

BIT-LINK FOR CHAINS.

No. 837,246.

Specification of Letters Patent.

Patented Nov. 27, 1906.

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To all whom it may concern:

Be it known that I, RALPH E. NOBLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bit-Links for Chains, of which the following is a specification.

This invention relates to the links of a chain for mining-machines which carry the bits for cutting coal or the like. Heretofore such links have usually been made of cast metal, and this invention is for the purpose of providing means whereby such links may be economically and practically made by forging.

The invention will be fully described in connection with the accompanying drawings, in which—

Figure 1 represents an edge view of a link embodying my invention shown with a bit in position. Fig. 2 is a side view thereof, partly broken away to show the construction; and Fig. 3 is an end or plan view with the bit removed.

It has been found that forged links are preferable for mining-machine chains, and more particularly for the links which carry the bits. These bits are provided with square shanks in order to prevent their turning, and it is necessary to provide a square hole in the link to fit the bit. However, it is impossible or impractical to drift or force a square hole suitable to receive the bit through the forging at the time the link is being made. It is only possible and practical to drift or force a round hole with considerable amount of draft, thereby forming a conically-shaped opening, which may extend part or all of the way through the link. It is readily possible to make such openings in either side of the link, so that they will meet to form a hole all the way through. When such links have been used heretofore, it has been found necessary to cut or work out the metal in order to form a straight rectangular opening in the link for engagement with the bit.

It is the object of this invention to overcome the necessity for this additional work, and thereby to cheapen the cost of the links, while at the same time providing an improved device.

As shown in the drawings, 4 represents the bit-link proper, which is formed of forged metal.

5 and 6 indicate two conically-shaped holes which are formed in the link and which meet to form a continuous opening through the body of the link and the projection on the side thereof.

In order to provide a rectangular hole for the shank of the bit 7, a conical bushing 8 is provided having a rectangular hole 9 there-through. This bushing may be cast or, being comparatively light, may be made in any other desired manner with the rectangular hole therein. It is forced into the conical hole 5 and provides a suitable bearing for the shank of the bit. I have provided a set-screw 10, which engages with a tapped hole 11 in the link 4 and passes through the bushing 8 to bear against the shank of the bit, thereby holding both the bushing and bit in position. The inner end of the bushing may also be allowed to extend into the lower conical hole 6 and be riveted or expanded, as shown at 13, to further hold the bushing in position. It will also be noted that in case the bushing becomes worn it may be removed and a new one inserted without destroying the link.

In order to prevent the shank of the bit from working through the link in case the set-screw becomes loosened, I have also provided a pin 12, against which the inner end of the bit is adapted to bear.

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

1. A forged bit-link for mining-machine chains having an opening therein, and a bushing adapted to fit in said opening said bushing being provided with a suitably-shaped hole to receive the shank of a bit.

2. A forged link for mining-machine chains, said link being provided with a conically-shaped hole which is formed therein at the time the link is forged, a conical bushing adapted to fit in said hole, said bushing being provided with a rectangular hole adapted to receive the shank of a bit.

3. The combination of a chain-link having a tapering hole therein, a bushing adapted to fit in said hole, a bit engaging with said bush-

ing, and a set-screw through said link and bushing for holding said bit.

4. A link having a projection at one side, and having conically-shaped openings meeting at a point within the link, a bushing fitting in said opening in the projection, a bit having a shank of angular cross-section fit-

ting in a corresponding hole in said bushing, and a set-screw for holding said bushing and bit.

RALPH E. NOBLE.

Witnesses:

A. W. FAUSTEMAKER,
W. M. BASSET, Jr.