No. 619,888. Patented Feb. 21, 1899.

E. S. HIGGINS.

CUTTING LINK FOR MORTISE CUTTING CHAINS.

(Application filed Sept. 10, 1898.)

(No Model.)

Fig. 1.

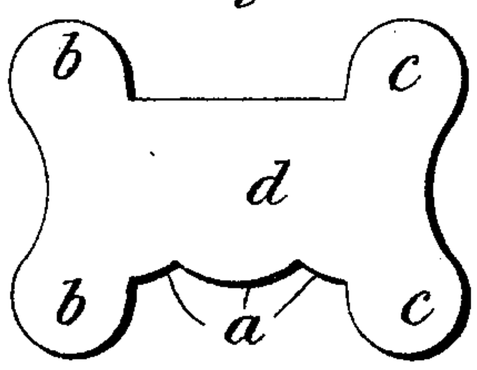


Fig. 3.

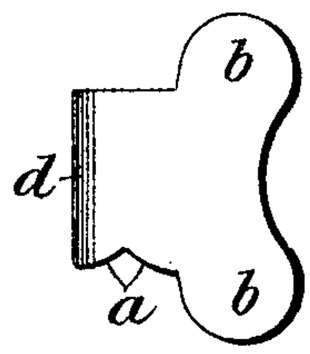


Fig. 5.

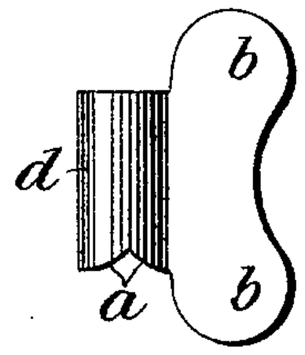


Fig. 2.

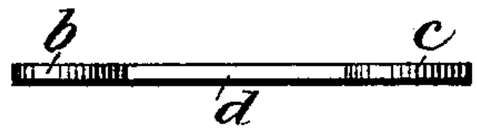


Fig. 4.

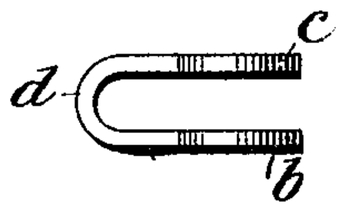


Fig. 6.

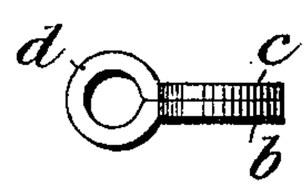


Fig. 11.

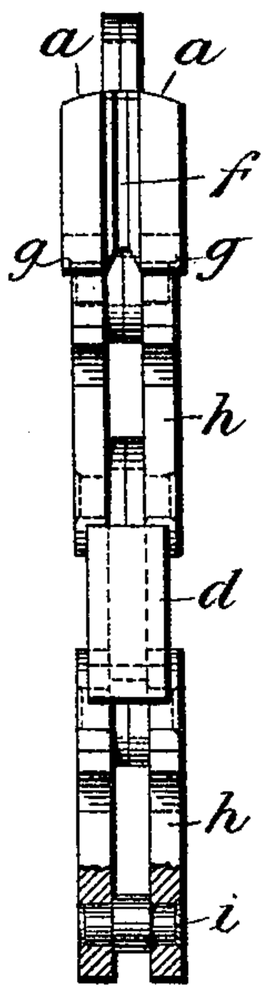


Fig. 12.

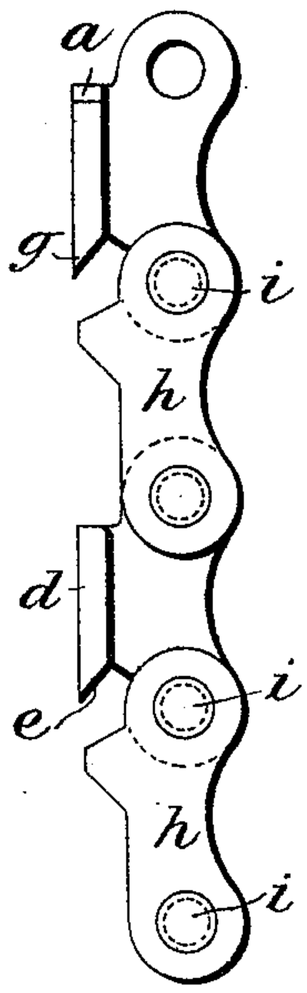


Fig. 7.

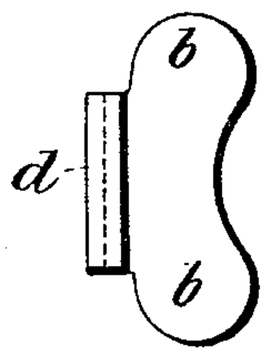


Fig. 9.

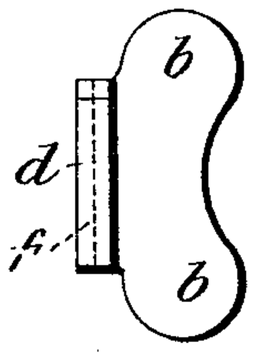


Fig. 8.

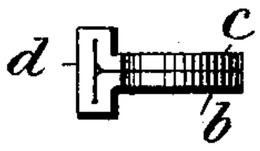
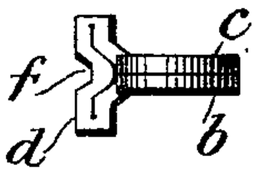


Fig. 10.



WITNESSES.

Philip M. Goodwin

James Bole

INVENTOR.

E. S. Higgins.

UNITED STATES PATENT OFFICE.

EDWARD SMITH HIGGINS, OF LONDON, ENGLAND, ASSIGNOR TO JOHN MAGRATH KELLY, OF SAME PLACE.

CUTTING-LINK OF MORTISE-CUTTING CHAINS.

SPECIFICATION forming part of Letters Patent No. 619,888, dated February 21, 1899.

Application filed September 10, 1898. Serial No. 690,639. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SMITH HIGGINS, engineer, a subject of the Queen of Great Britain, residing at 33 Comyn road, Wandsworth Common, London, England, have invented certain new and useful Improvements in the Cutting-Links of Mortise-Cutting Chains, of which the following is a specification.

In mortising chain-cutters as heretofore usually made it has been customary to cut each link out of a solid block of metal, and the expense of so manufacturing has been considerable.

According to this invention it is proposed that the links should be cut from sheet metal, which, so far as the cutting-links are concerned, is then bent and forged into the required shape, the cutting edges formed thereon, and when necessary, as is usually the case, the cutters are hardened or tempered.

In order that the invention may be clearly understood, reference is made to the accompanying drawings, in which—

Figure 1 represents a piece of sheet metal adapted to form one of the cutting-links. Fig. 2 is a plan view of same. Fig. 3 represents the sheet metal after the first bending. Fig. 4 is a plan view of same. Fig. 5 represents the sheet metal after the second bending. Fig. 6 is a plan view of same. Fig. 7 represents the sheet metal after the third bending and as adapted to form the central cutting-link. Fig. 8 is a plan view of same. Fig. 9 represents the sheet metal after the fourth bending and as adapted to form the outer cutting-links. Fig. 10 is a plan view of same. Fig. 11 is a plan view of several links connected in the order in which a chain would usually be formed, and Fig. 12 is a side view of same.

To form a cutting-link, the metal is first cut out substantially as indicated in Figs. 1 and 2, although if a curved following end is not desired the curved edges *a* may be omitted, the stamping then being the same on both sides. The ears *b b* are then bent over toward the ears *c c*, and the parts assume the position shown in Figs. 3 and 4. The ears *b c* are then brought into close contact, as indicated in Figs. 5 and 6, after which the head or tube *d* is flattened down, as indicated in Figs. 7 and 8, when the forward end of *d* is ready for undercutting or grinding to form the cutting edge *e* of a central cutter, while for the outer cutting-links the head *d* is further acted on, so as to produce the shape indicated in Figs. 9 and 10, in which a groove or clearance-space *f* is indicated, and a link so formed is then ready for undercutting or grinding, so as to produce the cutting edges *g g*. The pin or pivot holes being cut, the links are ready for tempering or hardening in any of the well-known ways. It will be noted that links so formed have their cutting-faces of one solid continuous piece, which extends all across the head. The fence-links *h* may also be stamped from sheet metal and the links be secured in order by pins or pivots *i*.

What is claimed is—

1. The process of manufacturing the cutting-links of chain-mortising machines, consisting in first cutting a blank from sheet metal, then bending same so that the opposite edges *b c* come together, then flattening the top *d* and finally undercutting or grinding same to form a central cutter, substantially as set forth.

2. The process of manufacturing the cutting-links of chain-mortising machines, consisting in first cutting a blank from sheet metal, then bending same so that the opposite edges *b c* come together, then flattening the top *d* and forming a groove *f* therein and finally undercutting or grinding same to form an outer cutting-link, substantially as set forth.

3. As an article of manufacture, an improved cutting-link for mortising machine-chains, consisting of a single piece of metal bent and flattened at the center to form a head having a sharpened end, substantially as described.

4. A cutting-link for mortising machine-chains consisting of a single piece of metal bent and flattened and recessed at the center to form a head, the portions of the head upon either side of the recess lying parallel to each other and having sharpened ends, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD SMITH HIGGINS.

Witnesses:
PHILIP M. JUSTICE,
JAMES BOLES.