B. T. TOMPKINS.

CHAIN STRAIGHTENING MECHANISM.

APPLICATION FILED AUG. 22, 1907.

912,208. Patented Feb. 9, 1909.

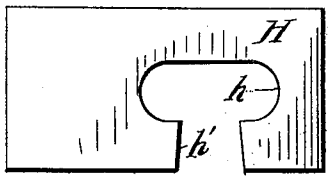


Fig. 3.

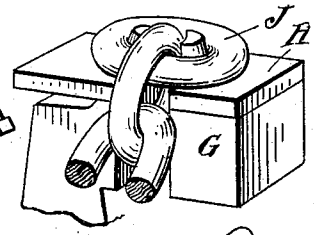


Fig. 2.

Fig. 1.

Fig. 4.

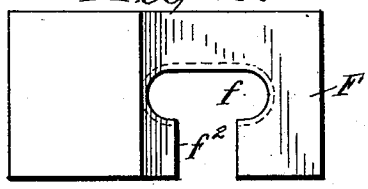


Fig. 5.

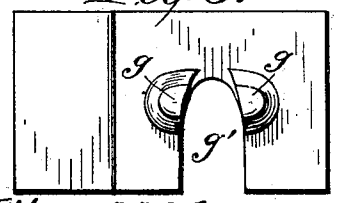


Fig. 6.

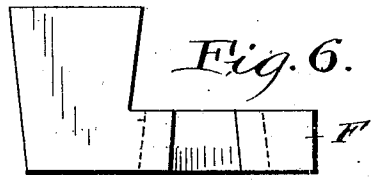
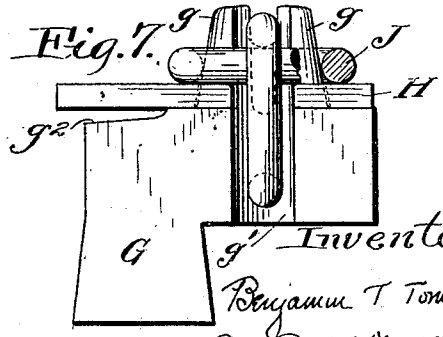


Fig. 7.



Witnesses.

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UNITED STATES PATENT OFFICE.

BENJAMIN T. TOMPKINS, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-THIRD TO THE CHISHOLM AND MOORE MANUFACTURING CO., OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

CHAIN-STRAIGHTENING MECHANISM.

No. 912,208. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed August 22, 1907. Serial No. 389,612.

To all whom it may concern:

Be it known that I, BENJAMIN T. TOMPKINS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Chain-Straightening Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to provide very simple and efficient mechanism for straightening the links of chains.

It is customary to make chains from links severed from a helix of stock, the scarfed end of the severed loops being welded together. Such links have a natural twist which, while of no material disadvantage for ordinary purposes, renders the chain unfit for hoists and special work, where the chain runs in suitable pockets.

This invention provides very simple means adapted to straighten each link, as the chain is being constructed. My mechanism also stretches the links to bring them to proper size.

One of the very great advantages of my mechanism is its simplicity, the parts being so arranged that there is nothing to clog with scale.

The invention in its preferred form comprises the combination of a die having a pair of projecting, tapered fingers, around which the link to be straightened may be placed, a coöperating die, and a stripping plate adapted to fit over the fingers and lie beneath the link, this plate being loose on the die, and being arranged so that a blow thereon will loosen the link from the fingers. The dies are carried by a suitable hammer. The stripping plate is entirely disconnected from the hammer, and normally lies in position on the die having the fingers, this die being suitably recessed to allow the plate to be tipped up to loosen the link. The mechanism is hereinafter more fully described, and its essential characteristics set out in the claim.

The drawings clearly disclose my invention.

Figure 1 is a side elevation of a conventional form of hammer, equipped with my dies and with a conventional form of welding dies. Fig. 2 is a perspective view of the lower dies, the stripping plate, and a portion of the chain being straightened. Fig. 3 is a plan of the stripping plate; Fig. 4 is a plan of the upper die; Fig. 5 is a plan of the lower die; Fig. 6 is a side elevation of the upper die; Fig. 7 is a side elevation of the lower die with the stripping plate and chain links thereon.

Referring to the parts by letters, A represents the anvil block, B the hammer helve and B′ the hammer head of a suitable hammer. As shown, the helve is pivotally mounted in the standard A′, is normally held elevated by a spring C, and may be drawn downward to deliver the blow by a suitable treadle D, connected by a link E. The upper die F of my invention is carried by the head B′ and the lower die G by the anvil block A. The stripping plate H rests on the lower die. Each of the dies F and H may be secured to their respective members by being dove-tailed therein as shown. The lower die G has projecting from the upper surface, the two tapered fingers g, between which there is a channel g'. A suitable recess g^2 is formed in the upper face of this die at the rear of the fingers. The stripping plate, H is a flat member, having an elongated hole h, adapted to fit loosely over the fingers g, when the plate rests on the upper surface of the die G. This elongated hole has a lateral opening h', which alines with the channel g'. The upper die F has a tapered, elongated hole f, adapted to pass over and substantially engage the sides of the fingers g. A lateral opening f^2 communicates with this hole, and is adapted to aline with the channel g'.

My straightening dies are adapted to be operated alternately with the usual welding dies. Both sets of dies may be mounted in the same hammer, as indicated in Fig. 1, where the welding dies are designated K and L. The two sets of dies are at least adjacent to each other, so that the freshly-welded link may be transferred at once, as by the workman's pincers, from the welding dies to the straightening dies, and straightened under the same heat.

When the stripping plate is in place on the lower die, the hot, freshly-welded link to be straightened is placed over the fingers g. The tapering of these fingers is such that in this position the link, before straightening, does not quite seat on the plate H but rests on the tapered sides of the pins. In this position of the parts the hammer is operated, and the upper die F descends on to the link, delivering a blow thereon, which

forces it down on to the plate, and at once straightens the link, and stretches it to the proper size. The link thus straightened and stretched is shown at J in Figs. 2 and 7. This straightening and stretching causes the link to bind on the tapered fingers. As soon as the hammer head has been released, however, a small blow on the rear end of the stripping plate, which may be delivered by the workman's pincers or hand hammer, tips the rear end downward into the recess g^2, and elevates the front end, loosening the straightened link from the fingers. The straightened link is then removed by the pincers and a new loop passed through it and welded in the ordinary manner.

It is to be noted that the upper surface of the stripping plate and the lower surface of the die F are flat. This prevents the accumulation of scale, which is liable to result with recesses formed in these parts. To prevent an inadvertently hard blow from flattening the link, I arrange the two welding dies so that they will come into contact with each other when the die F has descended sufficiently to properly straighten the link. By having the coöperating surfaces on my upper die and plate flat, I can straighten links materially larger than those which fit snugly on the fingers. The upper surface of the die G is also flat, and accordingly on the larger sizes of links, which do not bind on the fingers, the stripping plate may be omitted, if desired.

It will be seen that my invention provides a very simple and efficient means for straightening and stretching the loop, that it is adapted to be used with an ordinary foot-power hammer alternately with the welding dies, and that there is nothing about it to clog with scale, or to get out of order.

I claim:

The combination, with a pair of dies, one having projecting tapered fingers, and the other a coöperating recess, of a stripping plate adapted to rest on the die having the fingers, said die having a recess in its upper surface which the stripping plate overhangs, whereby a shoulder is provided to form a fulcrum for the stripping plate, enabling a downward blow thereon to elevate the stripping plate and loosen the straightened link.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

BENJ. T. TOMPKINS.

Witnesses:

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BRENNAN B. WEST.