July 16, 1940. R. L. MULLANEY 2,207,892

PORTABLE CHAIN VISE

Filed Oct. 12, 1939

Fig. 1.

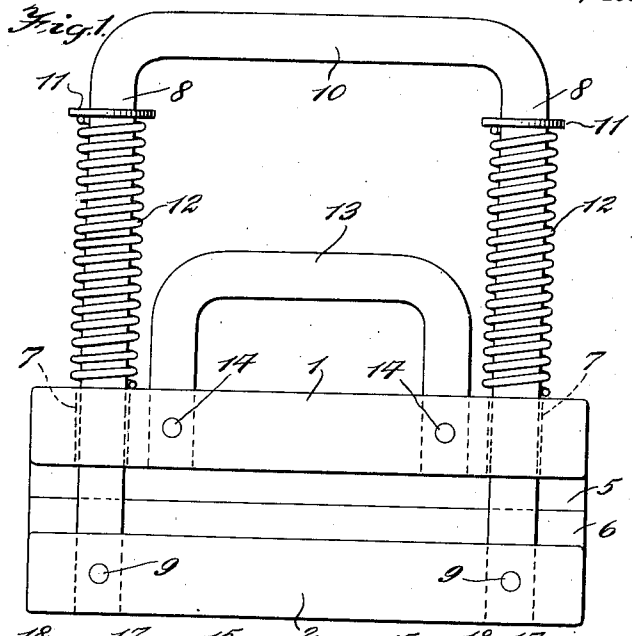
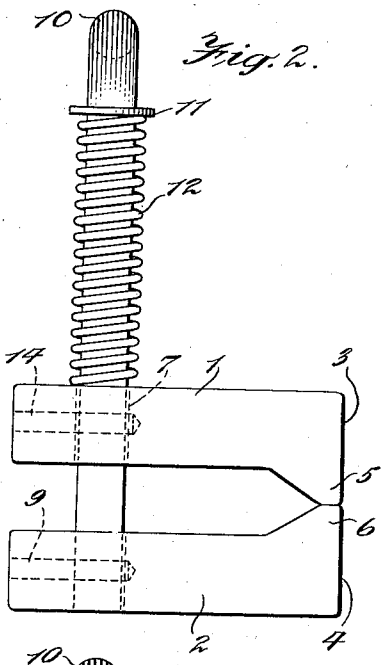


Fig. 2.



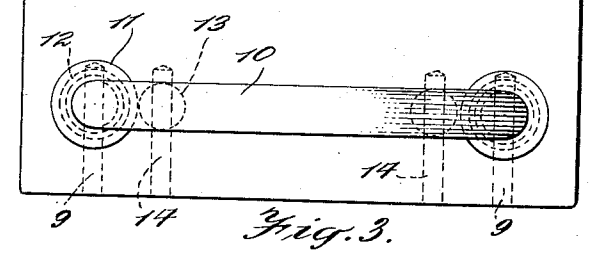
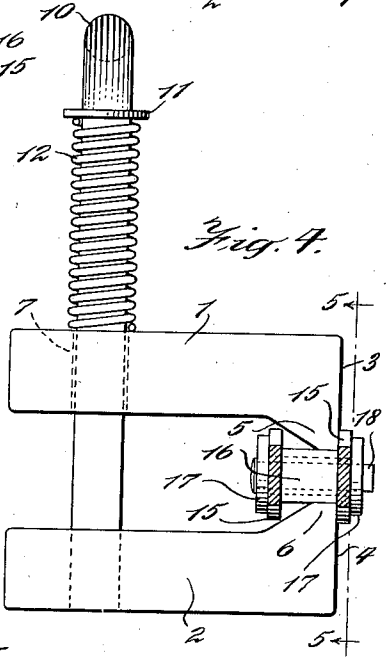


Fig. 3.

Fig. 4.



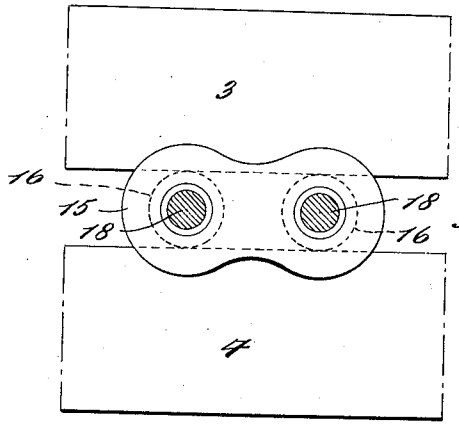


Fig. 5.

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PORTABLE CHAIN VISE

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3 Claims. (Cl. 59—1)

This invention relates to a novel and improved form of portable chain vise, the novel features of which will be best understood from the following description and the annexed drawing, in which I have shown a selected embodiment of the invention and in which:

Fig. 1 is a longitudinal elevation of the selected embodiment as viewed from the left of Fig. 2;

Fig. 2 is a vertical elevation of the vise as viewed from the right of Fig. 1;

Fig. 3 is a plan view of the vise showing a section of chain in place;

Fig. 4 is a view similar to Fig. 2 but showing a section of chain in place in the vise;

Fig. 5 is a view on the line 5—5 of Fig. 4.

The vise described and claimed herein is designed for use in making repairs or replacements of parts of chains, more particularly roller chains. For example, in a truck employing a roller chain drive it oftentimes happens that the chain must be repaired by replacing parts thereof and one of the first things that must be done is to remove the pins which connect the parts which are to be removed. It is the object of this invention to provide a vise which is portable and which may be used to hold a roller chain of any size in such a position that the pins may be easily removed. Those pins are oftentimes riveted at both ends or have driving fits in the holes of the side plates of the chain and to remove them a firm support or anvil must be provided which will firmly engage the side plates while the pins are being driven out of the chain. With the vises now in use it oftentimes happens that the hammering on the pins will actually bend the side plates or other parts of the chain and damage them enough so as to require replacement. These and other disadvantages are overcome by the vise now to be described.

For the purpose of illustration, I have shown the vise as comprising two plates 1 and 2 which are preferably of the massive construction shown so as to provide a relatively heavy anvil and to withstand the rough usage to which the vise is subjected. The plates have edges 3 and 4 which are in the same plane, and at those edges the plates are provided with relatively narrow jaws 5 and 6 which extend toward each other and which when in contact, as best shown in Fig. 2, will hold the major portions of the plates apart.

The one plate 1 is provided with a pair of holes 7 through which extend the parallel legs 8 of a U-shaped rod. The ends of the legs 8 are anchored in the other plate 2 as by pins 9, and the bottom of the U indicated at 10 may conveniently be used as a handle to carry the vise from place to place.

Adjacent the upper end of each leg there is secured an abutment 11, between which and the top surface of the plate 1 is disposed a compression spring 12. These springs are under compression so as to yieldingly force the jaws 5 and 6 together.

Anchored in the plate 1 is a grip 13, which for convenience may likewise be made of a U-shaped rod having its legs anchored in holes in the top plate by pins 14.

In operation, when it is desired to use the vise, the operator may raise the plate 1 against the action of the springs 12 by taking hold of the grip 13 and pressing it upwardly towards the handle 10. The parts 10 and 13 are so spaced that if the palm of the hand is rested on top of the handle 10, then the fingers of the hand may conveniently take hold of the grip 13 and raise the top plate which will slide upwardly on the guides formed by the two legs 8. The plate 1 is lifted far enough so that the jaws may be put in place over the part of the chain which is to be repaired, as shown in Figs. 3 and 4. The edges 3 and 4 of the plates 1 and 2, being in the same plane, form in effect the face of an anvil to engage the side plates 15 of the chain. As is well known in the chain art, a roller chain is usually formed of a succession of blocks, each block being formed of two of the plates 15 and associated rollers 16 usually mounted on bushings which connect together a pair of plates 15. A series of blocks are fastened together by outside plates 17 which overlap the plates 15 and then the blocks and plates are pivoted together by pins 18 which pass through aligned openings in the overlapping plates 15 and 17. These pins are fastened in place in the chain by various means (not shown), but usually they have a tight fit in the outer plates 17 and in fact sometimes are riveted or upset to hold them in place.

When a length of chain is engaged by the jaws, as shown in Figs. 3 and 4, the plates 15 may engage the anvil faces formed by the edges 3 and 4 and then the pins 18 may be driven out of the chain by a hammer. Oftentimes the force necessary to be applied to the pins is so great that with prior art repair vises the plates 15 have been distorted by the hammer blows. However, as plainly seen in Figs. 4 and 5, with the vise made according to my invention, each plate 15 is supported throughout substantially its length by the edges 3 and 4 of the plates. For some types of plates 15 it may be that a short portion thereof is

not in contact with either of the anvil surfaces adjacent the center of the plate, but in any event such plate is always uniformly supported at at least four places, that is to say, the places adjacent the pins 18, where the greatest impact occurs, so that when one of those pins is hammered out of the chain, the chances of the plate 15 being bent by that hammering are reduced to a minimum.

While I have shown the invention as embodied in a specific form, it is to be understood that various changes in details may be made without departing from the scope of the invention as defined by the appended claims.

I claim:

1. A portable chain vise comprising two massive plates disposed generally parallel to each other, a U-shaped rod having parallel legs loosely extending through holes in one plate and anchored at their ends in the other plate, one or more springs arranged to urge said plates towards each other, and a grip on said one plate on the side opposite said other plate, whereby said grip and the bottom of said U may be grasped in the hand to overcome the effect of said springs and move said plates apart, said plates having narrow jaws adjacent one edge contacting with each other under the action of said springs, and said plates inwardly of the jaws being spaced apart.

2. A portable chain vise comprising two massive plates disposed generally parallel to each other, said plates having edges substantially in the same plane, narrow jaws on said plates at said edges and extending towards each other and adapted to engage each other to hold the rest of the plates apart, a handle having parallel legs loosely passing through holes in one plate and anchored in the other plate, one or more springs engaging said one plate and said handle and arranged to force the plates towards each other, and a grip on said one plate on the side opposite said other plate, for the purpose set forth.

3. A portable chain vise comprising two massive plates disposed generally parallel to each other, said plates having edges substantially in the same plane, narrow jaws on said plates at said edges and extending towards each other and adapted to engage each other to hold the rest of the plates apart, a guide slidably engaging one plate and secured to the other plate, spring means urging said jaws together, and means engageable by the hand to pull the jaws apart against the action of said spring means.

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