Feb. 23, 1943. I. S. CARLSON 2,312,027

CHAIN TOOL

Filed April 21, 1941

Fig. 1

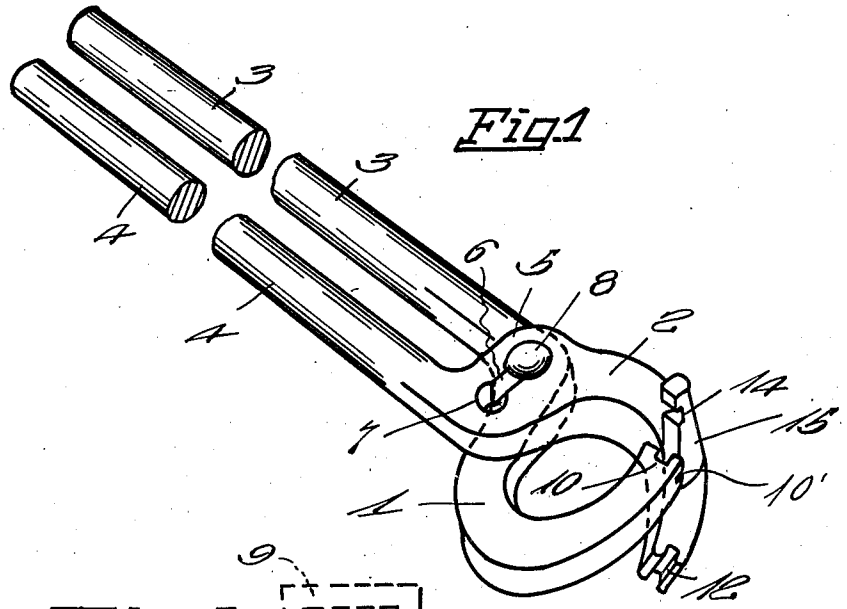


Fig. 2

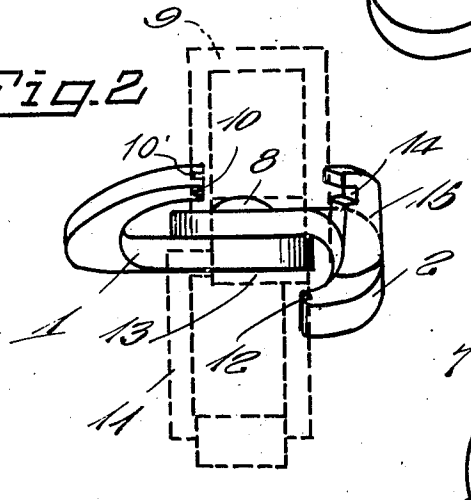


Fig. 3

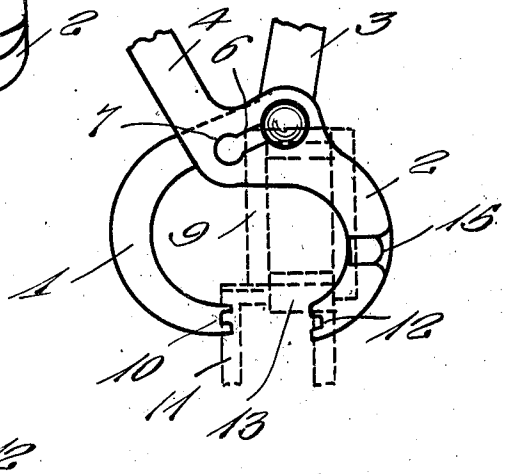
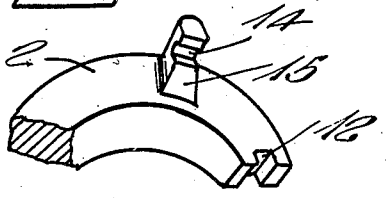


Fig. 4



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CHAIN TOOL

Ivan S. Carlson, Hartline, Wash.

Application April 21, 1941, Serial No. 389,673

1 Claim. (Cl. 81—15)

This invention relates to a chain tool and it is one object of the invention to provide a tool of the pliers type which is so constructed that it may be used very effectively for assembling links of a chain or for separating links of a chain.

The particular type of chain for which use of this tool is intended is the type consisting of links each having a hook at one end which is engaged about an end bar of an adjoining link and normally remains in pivotal engagement therewith, separation or assembling of the links being accomplished by tilting the links to dispose the hook in such position that the hook or bill may be moved through the recess as the links are shifted transversely of each other. This has been found difficult when a chain is in use as the chain is often too tight to permit the links to be tilted and shifted transversely of each other. Even if a hammer is employed for driving the links transversely, this has been found difficult as there is often not sufficient room to effectively use a hammer.

Therefore, one object of the invention is to provide a tool of such construction that adjacent ends of adjoining links may be engaged between jaws of the tool and force then applied to shift the links transversely of each other into or out of engagement with each other.

Another object of the invention is to provide the tool with jaws having link engaging portions so formed that they may be firmly engaged with the links and not be liable to slip out of engagement with the jaws when pressure is applied.

Another object of the invention is to provide a tool which is operated in the same manner as a pair of pliers and is very strong, easy to operate, and not liable to break or get out of order.

The invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of the improved chain tool.

Fig. 2 is a view looking at the front of the tool when applied in position for separating links of a chain.

Fig. 3 is a view showing the tool applied to links in position to move the links into engagement with each other.

Fig. 4 is a perspective view of one jaw of the tool.

This improved chain tool is of the pliers type and consists of companion jaws 1 and 2 having handles 3 and 4, the jaws and their handles being formed of steel or other strong material which will stand the strain to which the jaws are subjected when the tool is in use. The jaw 2 has its inner portion widened, as shown at 5, and this widened portion is formed with a slot 6 having enlarged end portions 7 so that the pivot pin 8 may be shifted through the slot from one end thereof to the other and the jaws adjusted to accommodate small links or large links. This is the usual slip joint construction provided in adjustable pliers.

The jaws 1 and 2 are curved so that their free ends extend toward each other and, by referring to Figs. 1 and 2, it will be seen that the jaws are bent laterally to dispose them in offset relation to each other. By so bending the jaws, a link 9 of a chain may have a side portion engaged in the groove or seat 10 formed across the end face of the jaw 1 and an adjoining link 11 have a side portion engaged in the groove or seat 12 formed across the end face of the jaw 2. The two links will thus be engaged at opposite sides and, when pressure is applied to the handles 3 and 4 to move them toward each other, the jaws will urge the links transversely of each other in opposite directions and the bill or hook 13 of the link 9 shifted out of pivotal engagement with the adjacent end bar of the link 11. It will thus be seen that the two links may be easily separated. This is clearly shown in Fig. 2.

In order to connect the links, the tool is applied as shown in Fig. 3. Referring to this figure, it will be seen that when links are to be connected, a side portion of the link 11 is engaged with the free end of the jaw 1 in the groove 10' extending transversely of the groove 10 and the opposite side of link 9 is engaged in a groove or seat 14 formed across the inner side face of an arm or finger 15 carried by the jaw 2 and projecting laterally therefrom in spaced relation to the free end of jaw 2. In view of the fact that the jaw 1 now engages the link 11 instead of link 9, and finger 15 of jaw 2 engages link 9, movement of the jaws toward each other will shift the links transversely in the direction necessary to move the hook 13 into pivotal engagement with the end cross bar of link 11 and the links will be pivotally connected with each other. It is to be understood that engagement of the jaws with the links will be close enough to the pivotally connected ends of the links to prevent canting of the links and resulting binding engagement of the links with each other.

It will thus be seen that the tool may be used either for disconnecting adjoining links of a chain or for moving the links into coupled engagement with each other. It will also be seen that the tool is operated in the same manner as

are pliers and that a hammer or other driving tool is not necessary in order to force the links into or out of engagement with each other.

Having thus described the invention, what is claimed is:

A chain tool comprising jaws pivoted to each other and having operating handles extending from their rear ends, said jaws being curved longitudinally and having their forward portions extending toward each other and transversely offset to provide upper and lower link-engaging members overlapping when the jaws are moved toward each other to closed position and adapted to engage adjoining links of a chain from opposite sides and shift the links transversely out of pivotal engagement with each other during such movement, said members having link-receiving grooves at their ends and the upper member having a second groove extending at right angles to its first mentioned groove, and an abutment arm integral with and extending at right angles to the lower chain-engaging member and disposed in spaced relation to the front end thereof said abutment arm having its inner side face formed with a seat for receiving a side edge portion of a link and cooperating with the second mentioned groove of the upper link-engaging member for shifting the link transversely into engagement with an adjoining link when the jaws are moved in a closing direction.

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