April 2, 1946. W. H. SMITH 2,397,513

CHAIN LINK TOOL

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Fig. 1.

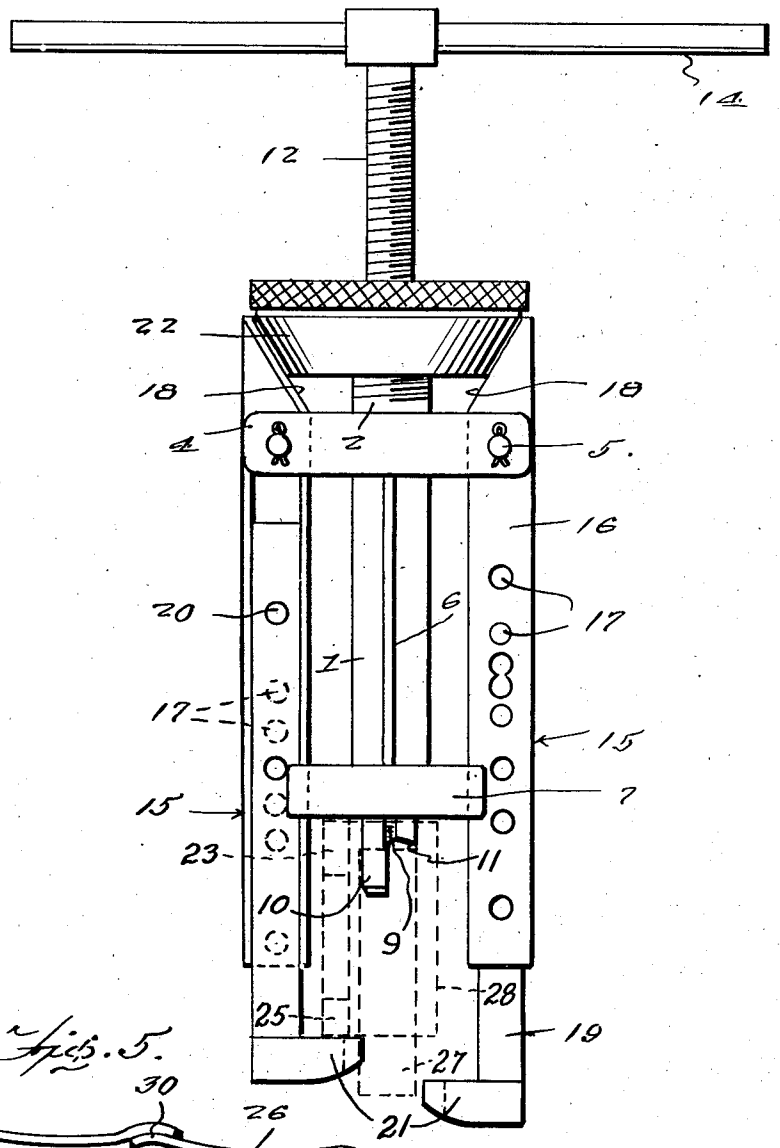
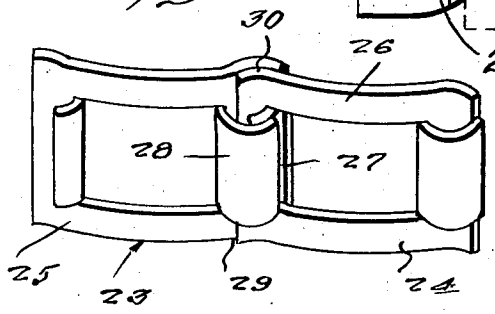


Fig. 5.



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Fig. 2.

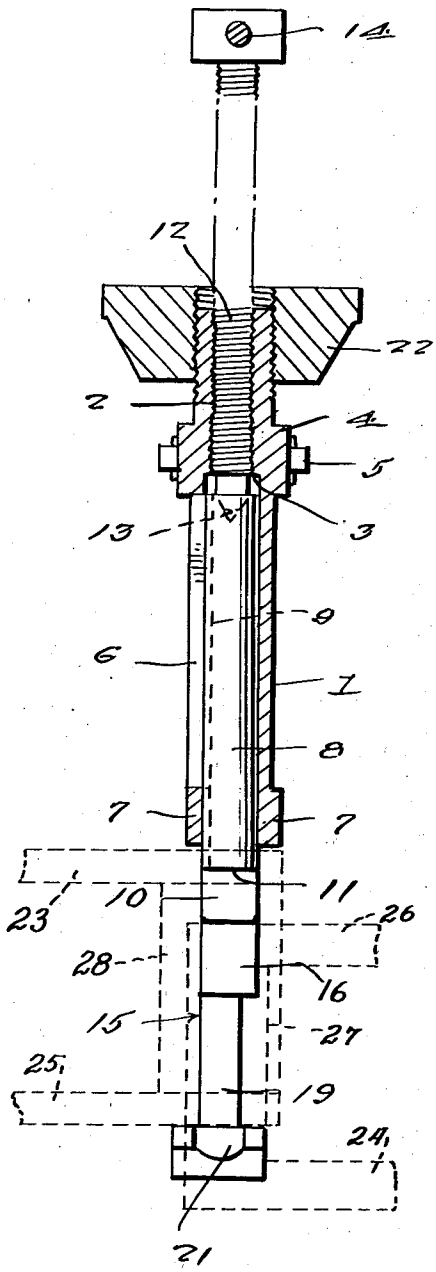


Fig. 3.

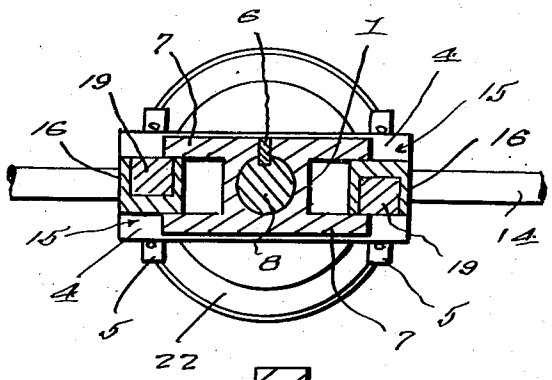
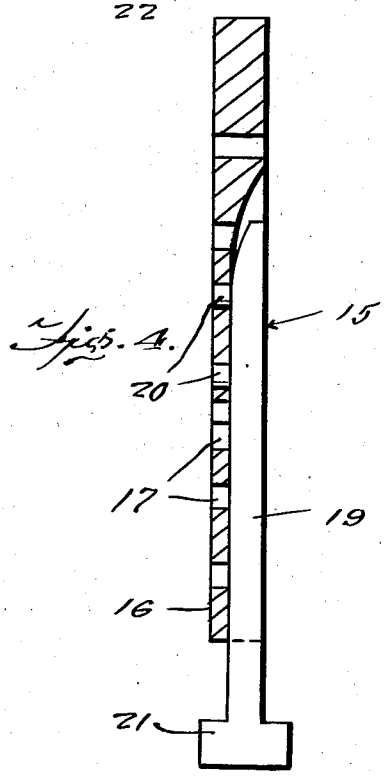


Fig. 4.



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CHAIN LINK TOOL

Walter H. Smith, Eureka, Ill.

Application June 14, 1944, Serial No. 540,337

2 Claims. (Cl. 59—7)

The present invention relates to new and useful improvements in tools, particularly for removing and replacing links in the drive chains of agricultural and other machinery, although it will be understood that the device may be used for any other purpose for which it may be found adapted, such, for example, as removing rivets.

An important object of the invention is to provide, in a manner as hereinafter set forth, a tool of the aforementioned character comprising a novel construction and arrangement whereby power transmitting chains may be expeditiously repaired without the necessity of removing them from the machine.

Another very important object of the invention is to provide a tool of the character described which embodies unique adjusting means.

Other objects of the invention are to provide a tool of the character set forth which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact and which may be manufactured at low cost.

All of the foregoing, and still further objects and advantages of the invention, will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in side elevation of a tool constructed in accordance with the present invention.

Figure 2 is a view in vertical section through the device.

Figure 3 is a horizontal sectional view.

Figure 4 is a detail view in longitudinal section through one of the pivoted, longitudinally adjustable arms.

Figure 5 is a perspective view of a section of a chain on which the tool is particularly adapted to be used.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a metallic sleeve 1, said sleeve including an internally reduced and threaded upper portion 2 providing an internal shoulder 3. The upper portion 2 of the sleeve 1 is also externally threaded. Extending transversely across the upper portion of the sleeve 1 but spaced below the upper end thereof is a pair of bars 4, the end portions of which are apertured to accommodate pins 5. Below the bars 4 the sleeve 1 has formed longitudinally therein a slot in which a key or spline 6 is fixed, said key or spline projecting into said sleeve. Below the key or spline 6 a pair of transverse guide bars 7 are provided on the sleeve 1.

The sleeve 1 receives, in its lower end, a removable and slidable plunger 8. The plunger 8 has formed therein a longitudinal way 9 which accommodates the key or spline 6. Thus, rotation of the plunger 8 relative to the sleeve 1 is prevented. The plunger 8 further includes a substantially segmental lower end portion 10 providing a shoulder 11, the purpose of which will be presently set forth.

Threadedly mounted in the upper portion 2 of the sleeve 1 is a pressure screw 12. The pressure screw 12 terminates, at its lower end, in a point 13 which is engageable in the seat provided therefor in the upper end portion of the plunger 8. An operating handle 14 is provided on the upper end portion of the pressure screw 12.

Pivotally mounted between the end portions of the bars 4 is a pair of longitudinally adjustable arms 15. The arms 15 include channel members 16 which are journaled, adjacent one end, on the pins 5. A longitudinal series of openings 17 is provided in each of the channel members 16. The pivoted end portions of the channel members 16 are beveled, as at 18.

The arms 15 further include metallic bars 19 which are mounted for longitudinal adjustment in the channel members 16. Toward this end the bars 19 are provided with lugs or the like 20 which are engageable selectively in the openings 17. Work-engaging jaws 21 are provided on the lower ends of the bars 19 for coaction with the plunger 8.

A substantially conical, knurled hand nut 22 is threadedly mounted on the upper portion 2 of the sleeve 1. The nut 22 is engageable with the opposed, beveled end portions 18 of the arms 15 for swinging the jaws 21 inwardly into engagement with the work. The arms 15 are engageable between the guide bars 7 for retaining the bars 19 in the channel members 16 with the lugs 20 engaged in the openings 17.

In Figure 5 of the drawings there is illustrated a section of a power transmission chain 23 of conventional construction, said chain including links 24 and 25. To disconnect the link 24 from the link 25, said link 24 is swung to a position wherein the upper bar 26 thereof is aligned with the usual opening 27 in the eye 28 of the link 25. With the jaws 21 in substantially the position relative to each other shown in Figure 1 of the drawings, the lowermost of said jaws is engaged beneath the link 25 at approximately the point 29, the upper-

most of said jaws is engaged beneath the lower end of the eye 28, and the shoulder 11 is engaged with the link 24 at approximately the point 30. In this position the end portion 10 of the plunger 8 is aligned with the eye 28. The substantially conical nut 22 is threaded downwardly on the portions 18 of the arms 15 for closing said arms with the jaws 21 on the chain. The screw 12 is then threaded downwardly in the sleeve 1 for forcing the plunger 8 downwardly. In this manner the bar 26 of the link 24 is pressed downwardly through the opening 27, the eye 28 being sprung open sufficiently to permit this. Thus, the link 24 is separated or disconnected from the link 23. To adjust the bars 19, the nut 22 is backed off to permit the arms 15 to swing clear of the guides 7 whereby said bars 19 may be removed from the channel members 16 to facilitate engaging the lugs 20 in the desired openings 17.

It is believed that the many advantages of a tool constructed in accordance with the present invention will be readily understood, and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. A chain link tool of the character described comprising a sleeve, a pair of arms pivotally mounted each at one end thereof on the sleeve, work-engaging and retaining jaws on the other ends of the arms, means for adjusting the length of the arms, means for securing the jaws in engagement with the work, a work-engaging plunger slidable in the sleeve and cooperable with the jaws, and means for actuating said plunger.

2. A chain link tool of the character described comprising a sleeve, spaced guides on said sleeve, arms pivotally mounted each at one end thereof on the sleeve and operable between the guides, said arms including cooperating members adjustable longitudinally with respect to one another, work-engaging jaws on the bars, a plunger slidable in the sleeve and engageable with the work, and means for actuating said plunger.

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