C. F. SMITH & J. ROBERTSON.

CLAMP.

APPLICATION FILED MAY 2, 1911.

1,051,771.

Patented Jan. 28, 1913.

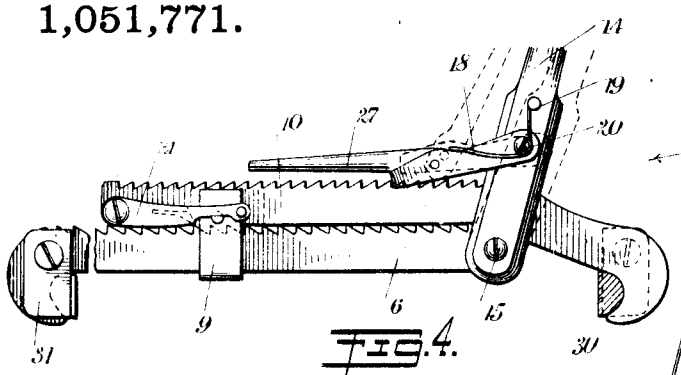


FIG. 4.

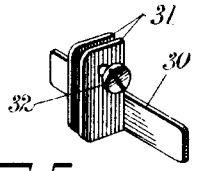
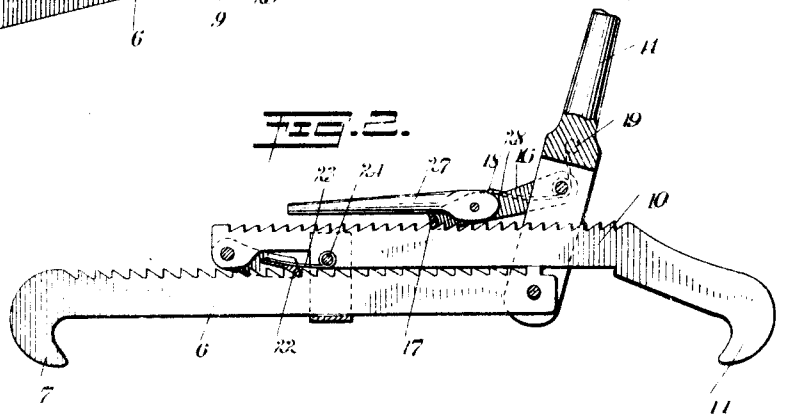


FIG. 5.

FIG. 1.

FIG. 2.



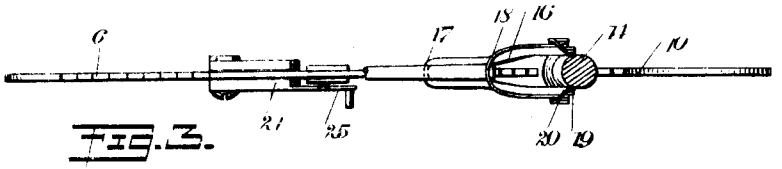


FIG. 3.

WITNESSES

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CLAMP.

1,051,771. Specification of Letters Patent. Patented Jan. 28, 1913.

Application filed May 2, 1911. Serial No. 624,533.

To all whom it may concern:

Be it known that we, CHARLES F. SMITH and JOHN ROBERTSON, both citizens of the United States, and residents of Dutchess Junction, in the county of Dutchess and State of New York, have invented a new and Improved Clamp, of which the following is a full, clear, and exact description.

Our invention relates to a new and improved form of ratchet clamp, and an object of our invention is to provide a clamp for use more particularly in uniting ends of a broken chain, and to maintain the ends of the chain in alinement while repairing the same.

A further object of our invention is to provide a clamp having arms which may be progressively fed toward each other by a leverage control.

A further object of our invention is to provide a clamp the movable parts of which may be readily disconnected one from another.

A further object of our device is to so modify the hook extremities of the several members, to form the same into a carpenter's clamp.

We attain the above outlined objects by disposing two ratchet bars one above the other with a pinion connection between the two bars, to automatically hold the same in position, and pivot to one of the bars, a lever having a ratchet thereon adapted to fit one of the bars upon the other, to be held by the first-mentioned ratchet. We further dispose on the hook ends of each of the bars a removable facing plate to change the chain clamp into a carpenter's clamp.

With the above and other objects in view, as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a perspective view showing a preferred embodiment of our invention used as a chain clamp. Fig. 2 is a longitudinal sectional view taken through the device as shown in Fig. 1; Fig. 3 is a plan view looking down upon the device as shown in Fig. 2; Fig. 4 is a side elevation of our clamp having the facing plates thereon to form a carpenter's clamp; and Fig. 5 is a perspective view showing a face plate.

Described more in detail, we have shown a ratchet bar 6 having a hook end 7 adapted to engage a link 8 of a chain construction. Disposed above the bar 6 parallel therewith and held in position by means of a clip 9 is a similarly constructed ratchet bar 10 having the end opposite the hook 7 formed into a similarly constructed hook 11 in alinement with the hook 7 and also engaging a link 12 of a chain construction. Pivoted to the end of the ratchet bar 6, opposite the hook 7, is the bifurcated end 13 of a lever 14, pivoted to the ratchet bar 6 by means of a pin 15. The bifurcated end 13 straddles the ratchet bar 10, and with the clip 9 affords a bracing guide for the bars 6 and 10. Pivoted to said bifurcated portion is a substantially U-shaped feeding arm 16, the outer end 17 of which engages the teeth on the upper side of the bar 10 and is held in engagement with said teeth by a loop spring 18, the ends of which are fastened to pins 19 on the lever 14 and are passed about the pivotal connection 20 of the arm 16 and the lever 14. The end of the loop portion 21 of the spring 18 bears upon the upper side of the arm 16, thereby retaining said arm in engagement with the ratchet bar 10, so that as the lever 14 is advanced in the direction indicated by the arrow in Fig. 1, the upper bar is fed along the lower bar and as the lever is swung in a direction opposite to the direction indicated by the arrow, the arm 16 will ride over the bar 10 to engage with another tooth, thereby drawing the hooks 7 and 11 together. In order to retain the bar 10 in its advanced position on the bar 6, there is pivoted to the bar 10, opposite the hook 11, a U-shaped pawl 21, the nose 22 of which engages the teeth on the upper side of the ratchet bar 6, and this nose 22 is held in engagement with the teeth by means of a leaf spring 23 fastened to a pin 24 passing transversely through the clip 9. One end of the pinion 21 is prolonged to form an arm 25, which arm is adapted to be raised to fit over the pin 26, to disengage the nose 22 from the ratchet bar 6, whereby the two bars 6 and

10 may be moved apart to increase the distance between the hooks 7 and 11. In order to disengage the arm 16 from the rack 10, there is pivoted between the sides of the arms 16, a cam lever 27 having a nose 28 adapted to bear on the teeth of the ratchet bar 10, to raise the arm 16 out of engagement with the teeth.

It will be noted that the teeth on one of the bars are disposed in the opposite direction from the teeth on the other bar so that as the arm 16 is free to ride back over the upper ratchet bar 10, relative movement between the upper and the lower ratchet bars is prevented, but when the arm 18 engages the teeth of the upper bar, the nose 22 is free to slide along the teeth on the lower ratchet bar.

In order to adapt the chain clamp to a carpenter's clamp, we may dispose on each of the hook ends 7 and 11, a face plate 30, as shown in Fig. 5, from which plate extends two parallel clamping plates 31, through one of which passes a binding nut 32, to engage each of the hook ends, as shown more particularly in Fig. 4.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

A clamp, comprising two ratchet bars arranged to slide one on the other, and each having a hook at its outer end, and provided on its upper surface with a series of ratchet teeth inclined outwardly in the general direction of its hook, a clip secured to the upper bar and through which the lower bar slides, the said upper bar being provided with a recess in its lower edge and adjacent its inner end, a pawl comprising side bars upon opposite sides of the upper ratchet bar and pivoted at one end to the extreme inner end of said upper ratchet bar, and a transverse member connecting the said side bars and extending through the recess of the upper ratchet bar, the said connecting member having a portion engageable with the ratchet teeth of the lower ratchet bar, a spring anchored on the clip and engaging the transverse connecting member for the purpose of holding the same downwardly in engaged position, a forked lever straddling the upper bar and pivoted to the inner end of the lower ratchet bar, and a spring-pressed pawl pivoted to the lever and engaging the ratchet teeth of the upper ratchet bar, substantially as described.

In testimony whereof we have signed our names to this psecification in the presence of two subscribing witnesses.

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Witnesses:
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