

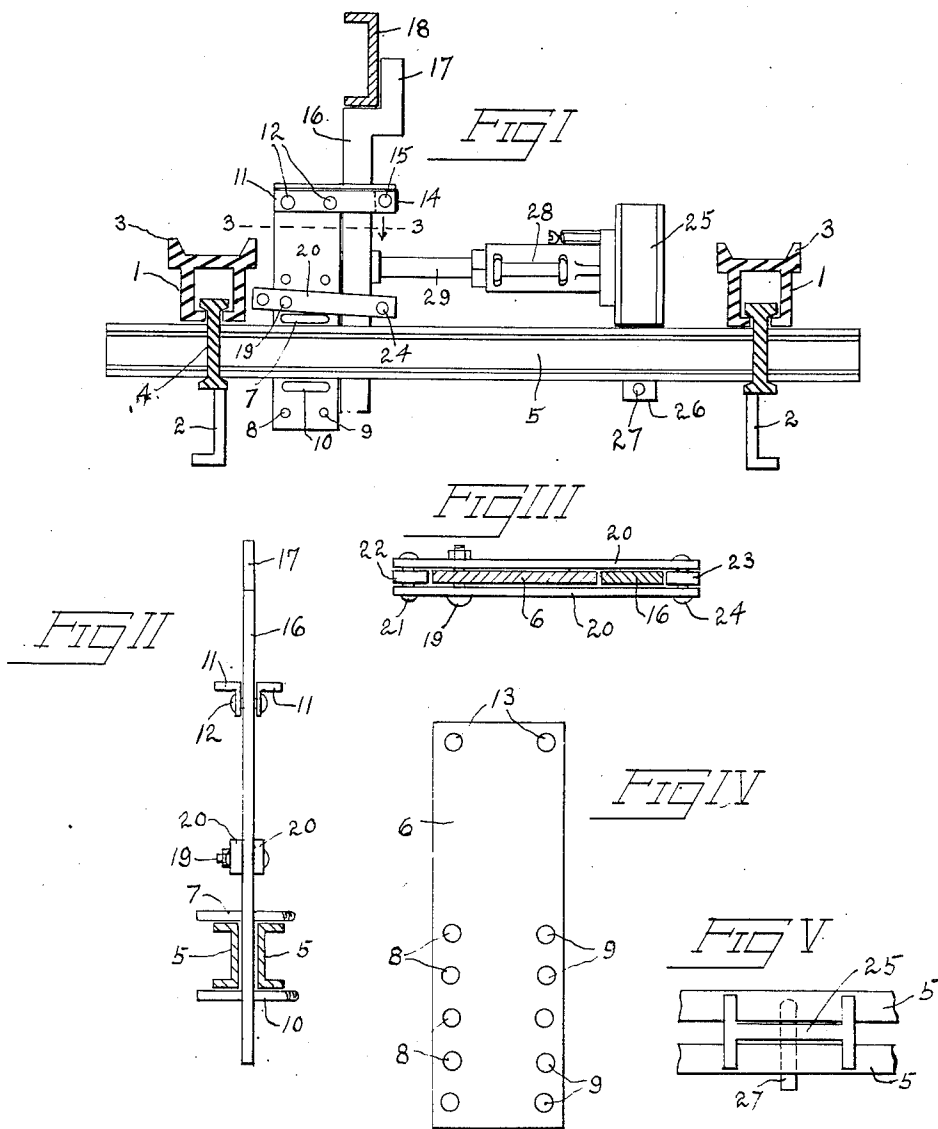
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AUTOMOBILE FRAME STRAIGHTENING MACHINE

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AUTOMOBILE FRAME STRAIGHTENING MACHINE

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My invention has reference to an automobile frame straightening machine, of the type which was shown and described in my former application for Letters Patent of the United States, filed May 4, 1931, Serial No. 534,889. The present improvement has to do more specially with the clamping devices for holding a frame piece in place while it is being operated upon, and aims to provide such devices which will possess a greater range and effectiveness than those shown in said former application. Said devices are adapted for use with supporting beams such as were also pointed out in said application, or with other frame-work which includes a longitudinally slotted beam. The present invention also possesses certain adjustment possibilities not contained in the former device.

The particular construction, operation, and arrangement of the various parts of the invention will be more fully pointed out in the following specification, reference being had to the accompanying drawing, in which:—

Fig. I shows the invention in its unitary form, in side elevation.

Fig. II is an edge view thereof.

Fig. III is a horizontal section on the line 3—3 of Fig. I.

Fig. IV is a detail of the support 6.

Fig. V is a top view of the anchor-post 21.

The reference numbers 1, 1 indicate a pair of hollow rails, supported at their ends on footings 2, and provided at their edges with flanges 3, forming tracks on the upper faces of the rails for the wheels of motor vehicles. Said rails are channelled in their lower faces for the support of hangers 4, arranged in pairs, each pair of which holds in a horizontal position a cross-beam formed of spaced channel-plates 5. Held vertically in the space between said plates is a support 6, by means of a U-bolt 7, passing through a pair of openings 8 and 9 in the support. Another U-bolt 10 is held in a similar pair of openings below the beam, with enough space between said

U-bolts to permit of a sliding movement of the support 6 along the beam. The support is provided with two series of the holes 8 and 9, to permit of selective positioning of the U-bolts, to vary the height of the support.

Secured to the upper end of the support 6 is a pair of angle-plates 11, by means of rivets 12 passing through openings 13 in the upper end of the plate 6. The plates 11 project beyond the support in one direction, and in the projecting ends is a spacer-block 14, held in place by a rivet 15. In the space between the block 14 and plate 6 is vertically slidable a post 16, provided at its upper end with an angular extension 17, for engagement with a part of a vehicle frame, as indicated at 18. A yoke is pivotally connected with the supporting plate 6 by means of a bolt 19 passing through one of the openings 8, said yoke consisting of a pair of bars 20, extending on opposite sides of the plate, and united at one of their ends by a rivet 21, passing through a spacer 22 between said bars. The other ends of the bars 20 are projected and separated by a spacer 23, held in place by a rivet 24. The post 16 passes downwardly in the space between the spacer 23 and support 6, and when the yoke hangs freely on the pivot 19 the post is gripped tightly between the support and spacer 23, and held from downward movement. Upon the long end of the yoke being raised, however, the post is free to be moved up or down, and can be adjusted vertically, to conform the position of the upper end of the post to the frame of an automobile or truck of any ordinary height from the ground. As soon as the adjustment is made the yoke is released from its raised position, permitting it to drop back into position for again gripping the post 16.

Also supported on the beam 5 is an anchor post 25, of I-beam formation, and the central web of which is projected downwardly into a tongue 26, through a hole in which

passes a pin 27. Between the post 25 and post 16 is positioned a power jack 28, with the piston rod 29 adapted to exert pressure against the last named post. If force is exerted against the post 25 above the lower end thereof it has a tendency to tip the post, causing the beam 5 to be gripped tightly between the I-beam portion thereof and the pin 27, and locking the post from movement on the beam. It thereupon provides a rigid anchorage for the base of the jack, and precludes the necessity of using blocking between the rail 1 and post 16, if the distance between them is too great to permit of the jack being supported directly against the rail, as can be done in some cases. If force is exerted against the post 25 near the lower end thereof it will slide readily along the beam, and can be placed in any adjusted position that may be desired.

It will be understood that when in use the injured part of the vehicle frame will be engaged by one of the posts 16 on one side and by two of the posts on the other side, force being applied to one or other of said posts. Besides the vertical adjustment of the support 6 and of the post 16 before referred to, numerous other adjustments thereof can be made, so that they can be adapted for use with frames of any height and in any position. For instance, the position of the support 6 can be reversed, with the post 16 on the other side thereof, or the position of the post 16 itself can be reversed. By pushing against the lower part of the support 6 it can be caused to move readily along the beam 5, but if force is exerted at a higher point, or against the upper end of the post 16, it will tend to tip the support 6, causing the U-bolts therein to grip the upper and lower faces of the beam 5, and hold the support from further movement, similarly to the manner pointed out in said former application.

When an adjustment is made in the height of the support 6, by changing the positions of the U-bolts 7 and 10, the position of the yoke 20 can be shifted to conform thereto, by removing the bolt 19 and replacing it in one of the other holes 8.

The support 6 is formed of a piece of heavy sheet metal which will readily enter the channel in the beam 5, and the other parts are all formed of metal of considerable strength, well fitted for the work for which the machine is designed. Changes can be made in the form and arrangement of the parts without departing from the scope of the invention, as pointed out herein.

What I claim and desire to secure by Letters Patent, is:

1. In combination with a suitably supported beam, having a channel longitudinally thereof, a support slidable in said channel, a guide on the upper end of said support, a

frame-engaging member slidable vertically in said guide, and a gripping frame pivoted to said support, and automatically engaging said frame-engaging member in a downward movement thereof.

2. In combination with a suitably supported beam, longitudinally channeled, a metal plate support slidable in said channel and provided with series of holes near its edges, a U-bolt in two of said holes above the beam for the support of said plate, a similar bolt in two of said holes below the beam for engagement with the beam upon the support being tipped in either direction, said bolts being capable of adjustment in others of said holes, a guide on the upper end of said support, a frame-engaging post movable vertically in said guide, and a gripping frame pivoted to said support, engageable with said post to hold the same in adjusted positions, the pivot of said frame being also capable of adjustment in the holes in said support.

In testimony whereof I affix my signature.
HENRY WOCHNER.