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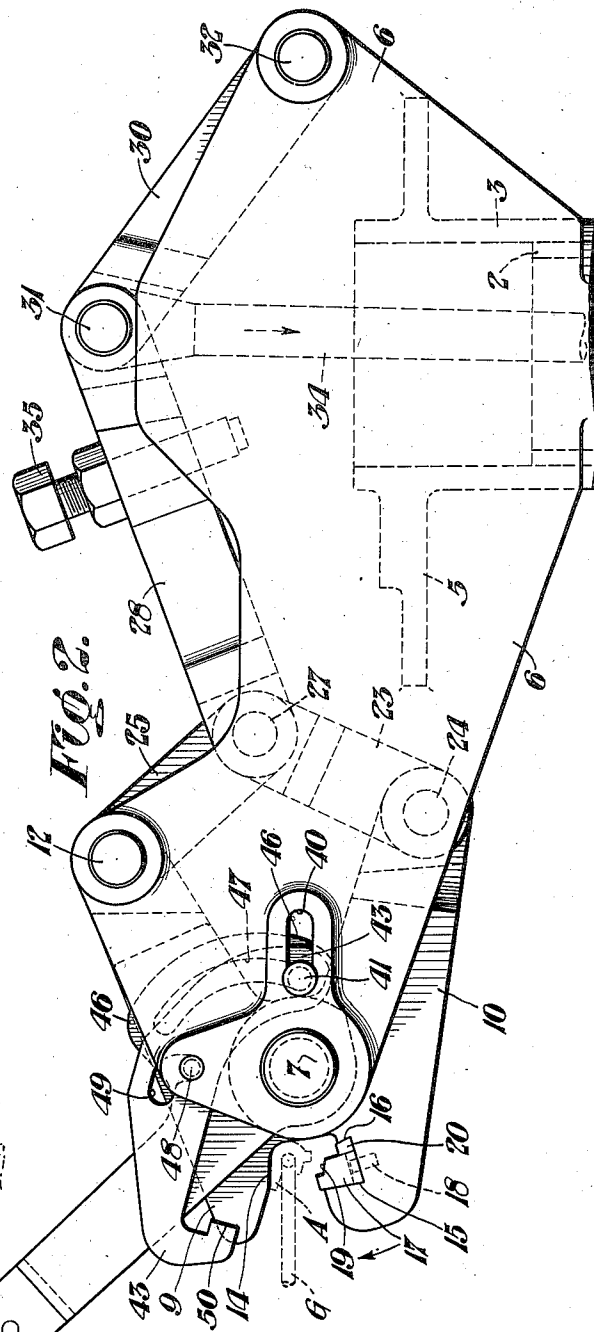
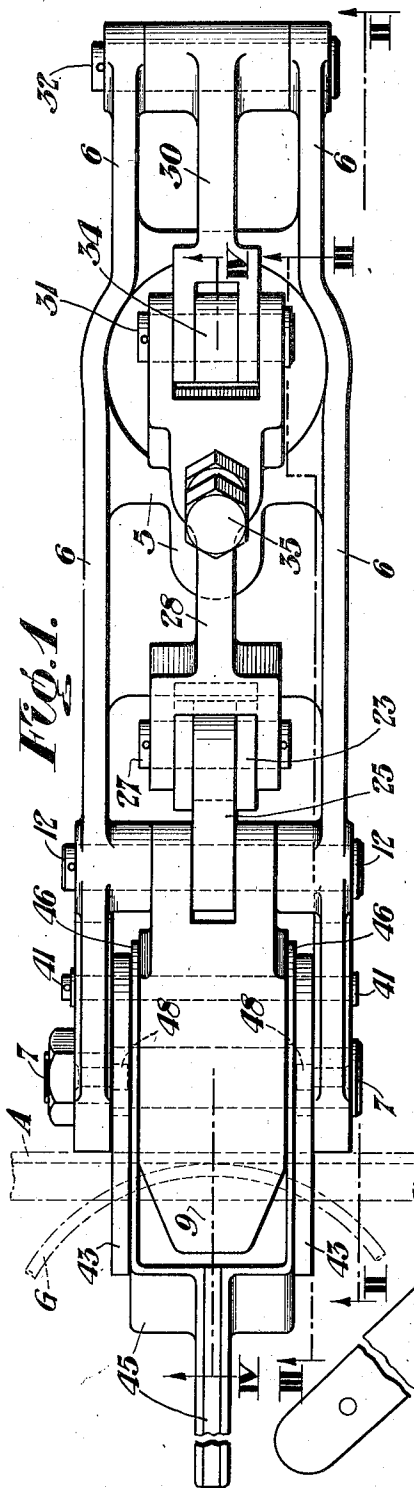
C. O. CARLSON

2,099,259

TOOL

Filed Feb. 27, 1936

3 Sheets-Sheet 1



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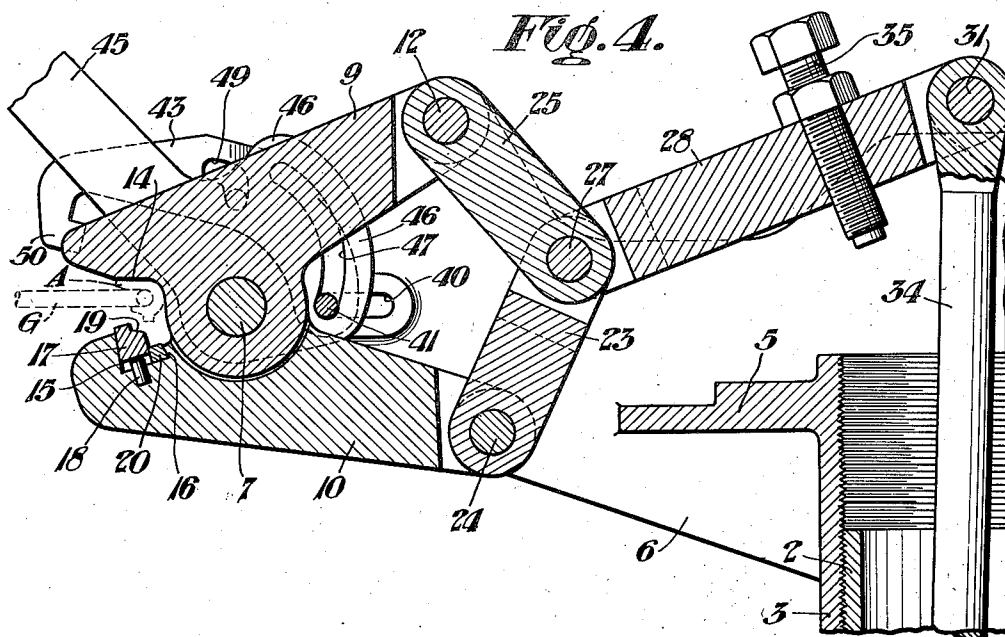
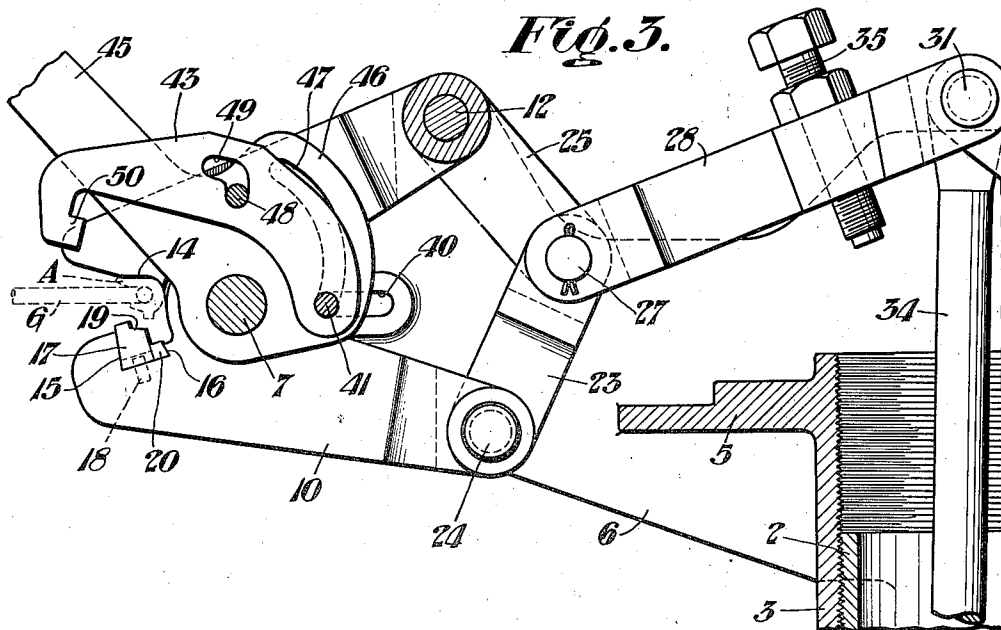
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3 Sheets-Sheet 2



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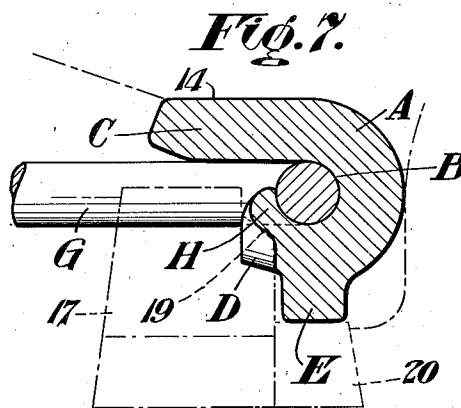
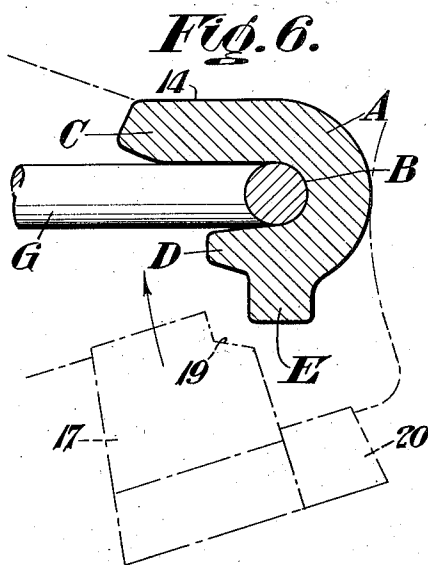
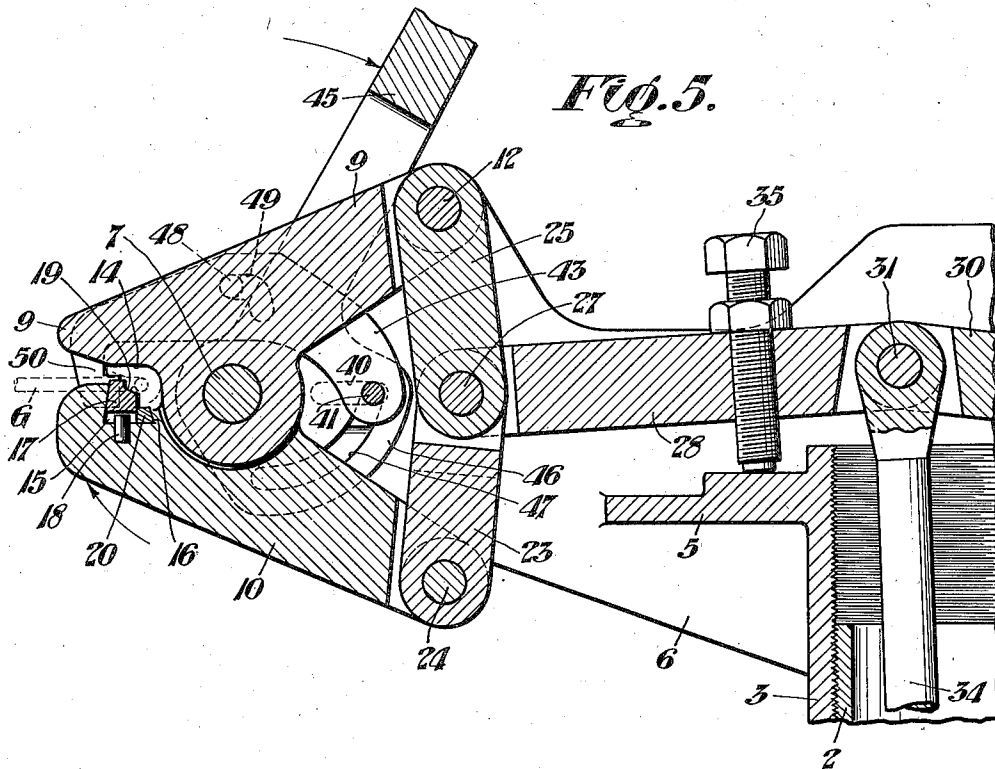
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,099,259

TOOL

Clarence O. Carlson, Cleveland Heights, Ohio, assignor to The American Steel and Wire Company of New Jersey, a corporation of New Jersey

Application February 27, 1936, Serial No. 66,136

2 Claims. (Cl. 140—55)

This invention relates to tools, and more particularly to one which is adapted to connect the outer convolution of a bed-spring coil to a grooved border wire, although not limited thereto. In my Patent No. 2,065,488, dated December 22, 1936, entitled "Tool", I have disclosed a heavy duty device for efficiently assembling elements of this type. The device of the present invention is generally similar to that of the patent referred to, but is specifically concerned with details of construction which are designed to accommodate a modified form of grooved border wire, and particularly one which is a hot-rolled section.

Referring to the drawings:

Figure 1 is a plan.

Figure 2 is an elevation taken along the line II—II of Figure 1.

Figure 3 is a sectional elevation taken along the line III—III of Figure 1 with the elements of the device in open, or work-receiving, position.

Figure 4 is a sectional elevation on the line IV—IV of Figure 1.

Figure 5 is a view similar to Figure 4, but showing the elements in other positions.

Figures 6 and 7 are enlarged details.

Referring more particularly to the drawings, the numeral 2 designates a vertical sleeve which is supported on casters and provided with a foot-operated lever, or connected with a suitable source of power. Neither casters, foot-operated lever, nor the bottom of the sleeve 2 are shown on the drawings, as the present invention is solely concerned with the construction and arrangement of the elements at the top of the latter. Accordingly, the top of the sleeve 2 carries a housing 3 at a height which is suitably accessible to a workman.

This housing 3 is provided with an outwardly extending horizontal flange 5 and a pair of elongated side plates 6. A horizontal pin 7 is mounted between one of the ends of the plates 6 and carries a pair of cooperating upper and lower jaw members 9 and 10, respectively. The upper jaw member 9 is stationary, being held so by a pin 12 which extends between the side plates 6; but the lower jaw member 10 is pivotally mounted for movement in a manner which will be later described.

The upper jaw member 9 has a substantially flat face 14 on its surface most adjacent the lower jaw member 10. Instead of having a substantially flat face, the adjacent surface of the lower jaw member 10 has a wedge-shaped recess 15, the back wall of which is shortened, as shown

at 16. A die member 17 is pinned, as at 18, in the wedge-shaped recess 15 and provides a back wall which is notched, as shown at 19. In addition to being held in the wedge-shaped recess 15 in the lower jaw member 10 the die member 17 is held against the front wall of the former by a wedge 20 which is of substantially the same height as the back wall 16.

A link 23 is connected on one of its ends to the rearward end of the lower jaw member 10 by a pin 24. A link 25 is connected on one of its ends to the pin 12 which holds the upper jaw member 9 secure between the side plates 6 and on the other of its ends to the free end of the link 23 by a pin 27.

A bifurcated lever 28 is connected on one of its ends to the pin 27 and on the other end thereof to a link 30 by means of a pin 31. This link 30 is pivotally mounted on a pin 32 which is supported between the rearward ends of the side plates 6 of the housing 3.

A vertical operating shaft 34 is disposed in the vertical sleeve 2 and connected on its upper end to the pin 31. From the foregoing description it will be readily understood that the vertical movement of the operating shaft 34 will effect the movement of the lower jaw member 10 toward the upper jaw member 9. This movement is restricted by an adjusting screw 35 which is carried by the bifurcated lever for contact with the outwardly extending horizontal flange 5 on the housing 3.

The side plates 6 of the housing 3 are horizontally slotted between the rearward portions of the upper and lower jaw members 9 and 10, respectively, as shown at 40, to receive a slidable pin 41. To this pin 41 there is pivoted a pair of forwardly extended curved links 43, one on each side of the upper jaw member 9. A bifurcated lever 45 is pivotally mounted on the pin 7 which carries the upper and lower jaw members 9 and 10, with its side arms on either side of the upper jaw member. The bifurcated portions of the lever 45 carry rearwardly offset portions 46 each of which has a curved slot 47 through which the slidable pin 41 extends. Each of the side plates 6 of the housing 3 carries a short inwardly extending stud 48 which rides in a curved slot 49 in the most adjacent of the forwardly extending curved links 43.

Referring to Figures 4 and 5, it will be seen that the backward movement of the bifurcated lever 45 causes the forward ends of the forwardly extending curved links 43 to move into alignment with the angular face 14 on the upper jaw

member 9. This backward movement of the forwardly extending curved links 43 is to enable them to hold the coiled spring in the border wire. For this purpose the forward extremities 5 of the curved links 43 are hooked, as shown at 50.

In operation, a bed-spring border wire A is disposed against the angular face 14 of the upper jaw member 9 with its groove B extending 10 outwardly. While in this position (as shown in Figure 6) the border wire provides an upper outwardly extending portion C of substantial length and a lower and relatively shorter outwardly extending portion D, between which the 15 groove B is formed. The lower and relatively shorter outwardly extending portion D carries an integrally formed relatively short downwardly extending portion E.

The border wire A, with the outer convolution 20 G of the coil spring occupying its groove B, is disposed between the upper and lower jaw members 9 and 10, respectively, in such manner that the upper surface of its outwardly extending portion C is against the substantially flat face 25 14 of the upper jaw member. The bifurcated lever 45 is moved rearwardly into the position shown in Figure 5, whereby the hooks 50 on the forward extremities of the forwardly extending curved links 43 are caused to hold the 30 outer convolution G of the coil spring in the groove B of the border wire A, and both of these elements between the upper and lower jaw members 9 and 10, respectively.

The vertical operating shaft 34 is moved downwardly (in any suitable manner) to cause the 35 lower jaw member 10 to move toward the upper jaw member 9, whereupon the die member

17 deforms the groove B in the border wire A in the manner shown at H in Figure 7. The bifurcated lever 45 is moved forwardly into the position shown in Figures 2, 3 and 4, and the 5 vertical operating lever 34 moved upwardly, thus releasing the border wire A and the firmly attached center convolution G of the coiled spring.

While I have shown and described one specific embodiment of my invention, it will be understood that I do not wish to be limited exactly 10 thereto, since various modifications may be made without departing from the scope of my invention, as defined by the following claims.

I claim:

1. A tool for connecting an element to a second 15 element having a deformable groove therein comprising, in combination, a stationary anvil providing a substantially flat contact surface, a pivoted die member for cooperation with said stationary anvil, means for supporting said elements against said stationary anvil with said 20 first named element in the groove in said second named element, an operating rod, and means connecting said operating rod and said pivoted die member. 25

2. A tool for connecting an element to a second 25 element having a deformable groove therein comprising, in combination, a stationary anvil providing a substantially flat contact surface, a pivoted recessed die member for cooperation with 30 said stationary anvil, means for supporting said elements against said stationary anvil with said first named element in the groove in said second named element, and means for operating said 35 pivoted die member to deform the groove of said second named element.

CLARENCE O. CARLSON.