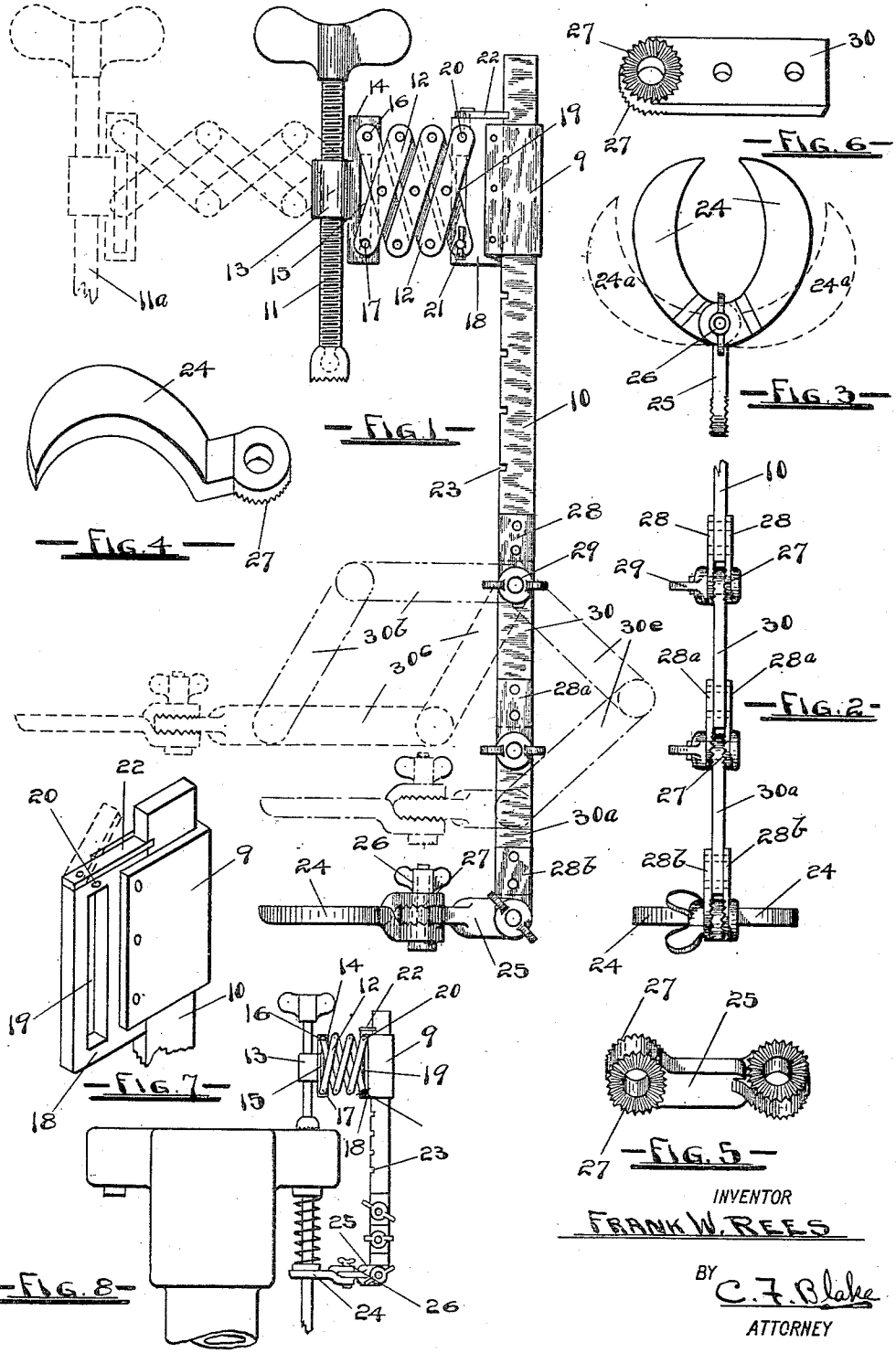
F. W. REES.

CLAMP.

APPLICATION FILED MAR. 29, 1917.

1,276,692.

Patented Aug. 20, 1918.



—FIG. 1—

—FIG. 2—

—FIG. 3—

—FIG. 4—

—FIG. 5—

—FIG. 6—

—FIG. 7—

—FIG. 8—

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FRANK W. REES, OF PORTLAND, OREGON, ASSIGNOR OF ONE-HALF TO MYRTLE I. REES, OF SEATTLE, WASHINGTON.

CLAMP.

1,276,692. Specification of Letters Patent. Patented Aug. 20, 1918.

Application filed March 29, 1917. Serial No. 158,448.

To all whom it may concern:

Be it known that I, FRANK W. REES, a citizen of the United States, residing at Portland, county of Multnomah, State of Oregon, have invented certain new and useful Improvements in Clamps, of which the following is a specification.

My invention relates to clamps in general, and particularly to that form known as C clamps and extensively used by machinists, carpenters, cabinet makers and the like, and the object of my invention is to provide such a device as will be universally adjustable to the various dimensions and characteristics of the work to which it may be applied.

I accomplish the above object, and other desirable results by means of the construction illustrated in the accompanying drawing, which therefore becomes a part of this application for Letters Patent, like characters of reference indicating like parts throughout the several views, and in which:—

Figure 1 is a side elevation of my device, illustrating by dotted lines some of its various adjustments.

Fig. 2 is a rear elevation of the foot of my device.

Fig. 3 is a plan view of the jaws at the foot of my device.

Fig. 4 is a detailed perspective view of one of the jaws.

Fig. 5 is a detailed perspective view of the sustaining link for the jaws.

Fig. 6 is a detailed perspective view of one of the articulated links at the foot of my device.

Fig. 7 is a detailed perspective view of the sliding sleeve.

Fig. 8 is a side elevation illustrating one use of my device.

While my device may be usefully employed by machinists, carpenters, cabinet-makers and the like, it is especially adapted for use in compressing the springs of the valves of internal combustion engines preparatory to removing the valves therefrom, and is so illustrated in Fig. 8.

In general my device consists of a rod, a sleeve slidable thereon, an extension arm attached to said sleeve and having upon the other extremity thereof a clamp screw, a series of articulated links upon one end of said rod, and adjustable jaws upon the last of said links, the work being clamped between said screw and said jaws, as illustrated in Fig. 8.

To make the device adjustable to various thicknesses of material the sleeve 9 is slidably mounted upon rod 10.

To enable the device to accommodate various depths of material the screw 11 is made adjustable relatively to rod 10, so that it can be moved toward or from said rod and secured in any desired position.

This is accomplished by mounting the screw upon an adjustable arm secured to sleeve 9, a convenient form of which arm is composed of a series of articulated crossed links 12, as shown in Figs. 1 and 8.

To attach this adjustable arm to the screw 11 I provide a screw nut 13 having thereon a rectangular flange 14 with a longitudinal slot 15 therein.

One of said links 12 is pivotally attached to said flange, as shown at 16, while the corresponding end of the adjacent link is secured by a pin 17 slidable in slot 15.

To attach the adjustable arm to the sleeve 9 I provide a rectangular flange 18 rigidly attached to sleeve 9 by rivets or other convenient means, and having therein a longitudinal slot 19, as shown in Figs. 1, 7 and 8.

One of said links 12 is pivotally attached to said flange opposite pivot 16, as shown at 20 in Figs. 1, 7 and 8, while the corresponding end of the adjacent link is slidably secured by a bolt and wing nut 21 coacting with slot 19, as shown in Figs. 1 and 8.

By this construction the screw 11 may be placed in any position desired relatively to rod 10, as shown in dotted lines at 11^a, in Fig. 1, and may be secured thereat by wing nut and bolt 21.

The entire adjustable arm with the screw 11 may be raised or lowered upon rod 10, and secured thereon in various positions by means of a keeper 22 pivotally mounted upon rectangular flange 18 and adapted to coact with notches 23 in rod 10, as shown in Figs. 1, 7 and 8.

In order to render my device applicable to various sizes of valve stems, or other members it may be required to embrace, I make the foot in the form of two pivotally mounted jaws 24, which may be opened or closed in a plane normal to the axis of screw 11, as shown in Fig. 3.

Said jaws are pivotally attached to a link

25 by means of a bolt and wing nut 26, the jaws 24 and arm 25 having coacting radial serrations 27 for the purpose of rigidly securing said jaws in any desired position, as shown at 24^a in Fig. 3.

For the purpose of enabling the use of my device in confined quarters, or for clearing obstructions that would prohibit the use of a rigid clamp, I provide a series of articulated links connecting the rod 10 and the link 25.

As a convenient method of constructing these articulated links I have illustrated a pair of plates 28 riveted to rod 10, and pivotally connected thereto, by means of a wing nut and bolt 29, I have shown a link 30.

A pair of plates 28^a, similar to plates 28, are riveted to link 30, and these plates are pivotally connected to a link 30^a similar to link 30.

Riveted to link 30^a are a pair of plates 28^b, similar to plates 28 and 28^a, said plates 28^b being pivotally connected to one end of link 25, as shown in Figs. 1 and 8.

The plates 28, 28^a and 28^b, and the corresponding links 30, 30^a and 25 have coacting radial serrations 27 to securely retain the adjacent plates and links in any desired positions, as illustrated at 30^b, 30^c and 30^e in Fig. 1.

My invention may be made of any size and constructed of any material deemed convenient and suitable for a device of this character, and while I have illustrated and described a form of construction and arrangement of parts found desirable in materializing my invention, I wish to include in this application for Letters Patent all mechanical equivalents or substitutes that may fairly be considered to come within the scope and purview of my invention as defined in the appended claims.

Having disclosed my invention so that others skilled in the art may be enabled to construct and to use same, what I claim as new, and wish to secure by Letters Patent is:—

1. In a clamp, a bar, a head; a foot; clamping means upon said head adapted to hold material between said head and said foot; pivotally connected links connecting said head and said foot; and means to secure said links in any desired position to form a substantially rigid member therefrom.

2. A clamp having a bar; a screw; a foot coacting with said screw to hold material therebetween; and pivotally connected links connecting said bar and said foot.

3. In a clamp, a bar, a screw, a screw nut, a foot; an extensible arm intermediate said bar and said screw, said arm comprising a plurality of articulated crossed links; rectangular end members pivotally connected to said links and secured to said bar and said nut and slotted to allow pivotal action of said links; and means to secure said arm in any position.

4. In a clamp, a bar, a screw; a plurality of articulated crossed links; a screw nut having a rectangular slotted flange; a sleeve slidable upon said bar; a rectangular slotted flange integral with said sleeve; pivots connecting one end of one of the links at one end of said plurality of links to said flanges, a slidable pivot connecting the end of the other of said links at said end of the plurality of links slidably to said screw nut flange; and a binding pivot connecting certain of said links to said sleeve flange.

5. In a clamp, a bar; a foot comprising a pair of pivotally connected jaws; a supporting link pivotally connected to said jaws; and articulated links connecting said supporting link to said bar.

6. A clamp comprising a flexible member composed of pivotally connected links; a foot upon one end of said members; an arm, composed of pivotally connected links, mounted upon said member; and a screw upon said arm adapted to coact with said foot to form a clamp therewith for holding material therebetween.

In witness whereof I claim the foregoing as my own I hereunto set my signature in the presence of two subscribing witnesses.

FRANK W. REES.

Witnesses:
C. F. BLAKE,
C. F. FAID.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."