April 22, 1930. W. G. MUELLER 1,755,265

WORK GUARD

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Fig. 1.

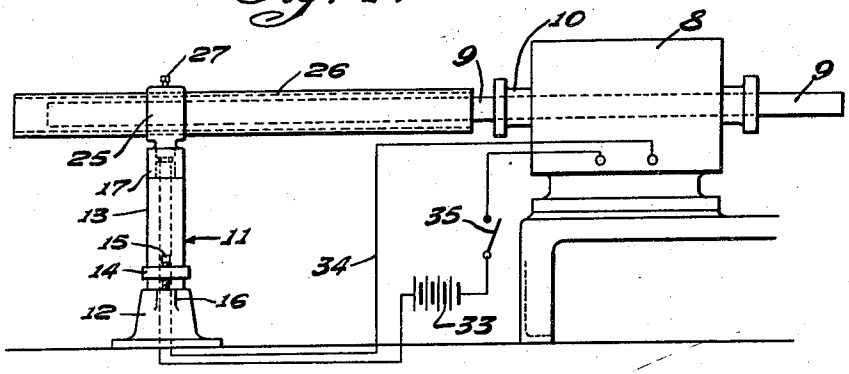


Fig. 2.

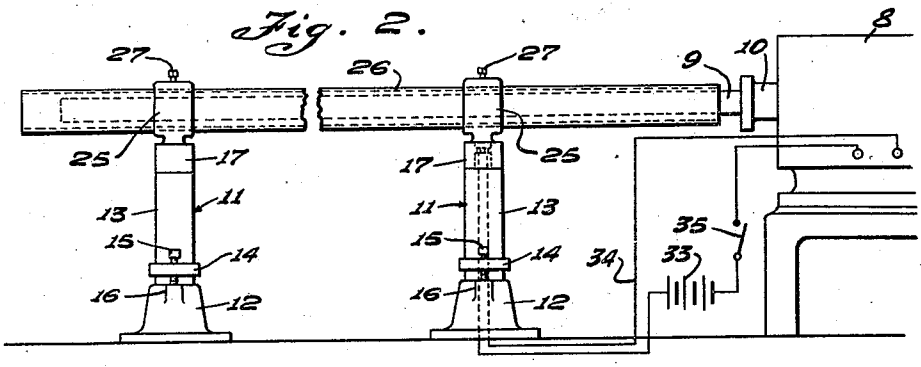


Fig. 6.

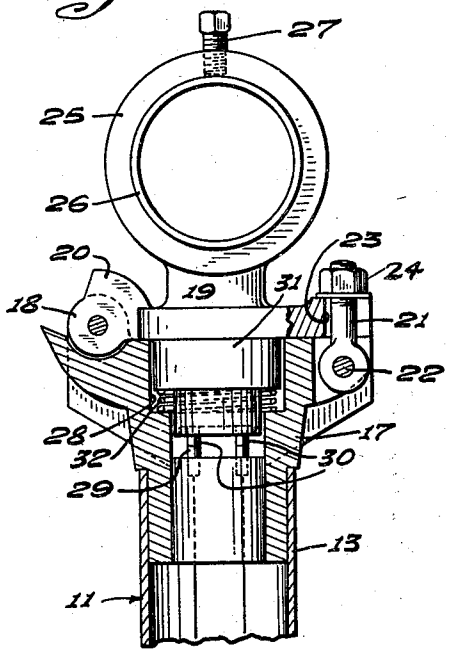
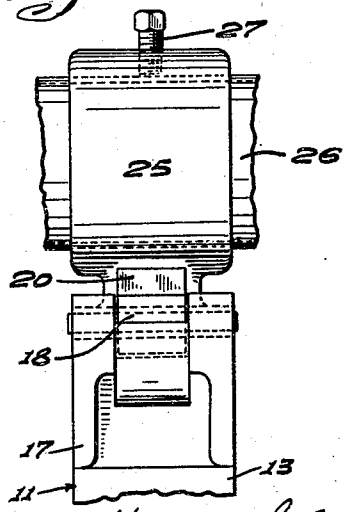


Fig. 7.



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Fig. 3.

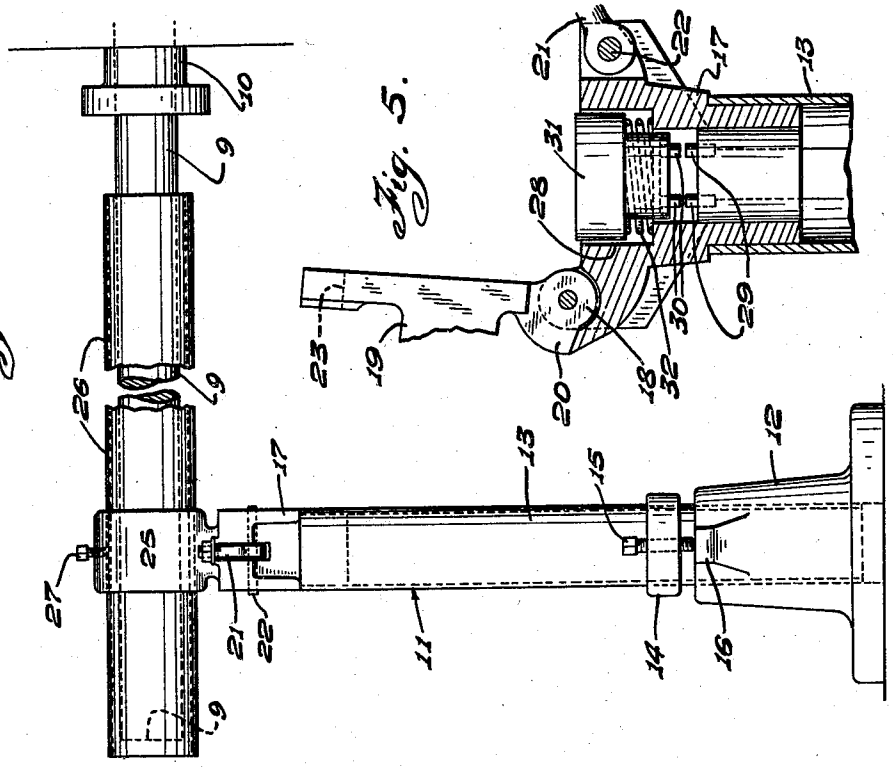
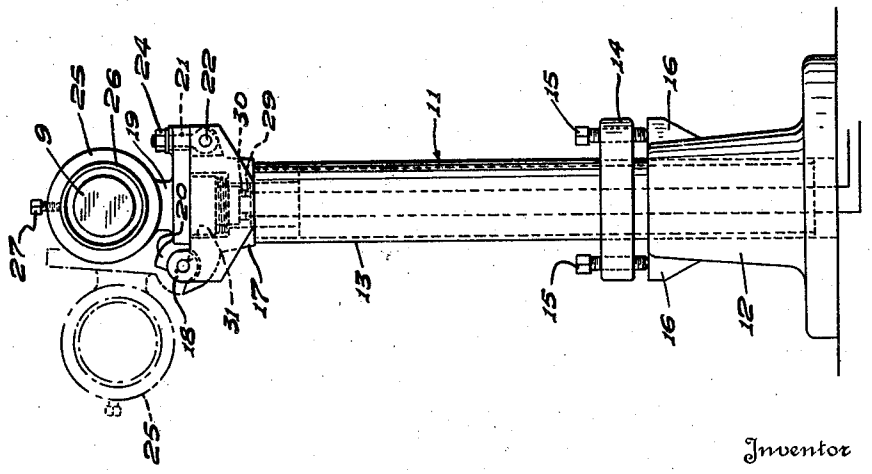


Fig. 5.

Fig. 4



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UNITED STATES PATENT OFFICE

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WORK GUARD

Application filed April 16, 1928. Serial No. 270,429.

In that type of metal working machine, in which long rods and bars of material, known as "bar stock" are operated upon, the greater part of this bar stock projects beyond the machine and is rotated and exposed. As a consequence distressing accidents have happened by reason of workmen's clothing becoming caught by the revolving material.

The object of the present invention is to provide a guard that will house the exposed portion of the work and yet is movable out of the way for the purpose of preparing or altering the machines for different kinds of work.

Another and important object is to provide mechanism whereby the guard must be in its proper operative position before the machine can be driven.

In the accompanying drawings:

Figure 1 is a view in elevation and somewhat diagrammatic in its character of the chuck end of a metal working machine and the novel guard associated therewith.

Figure 2 is a similar view of a slightly modified form of guard.

Figure 3 is a detail elevation on an enlarged scale of one of the supporting standards and the housing carried thereby.

Figure 4 is a view at right angles to Figure 3.

Figure 5 is a detail sectional view showing the head and guard in its inoperative position and illustrating the circuits controller.

Figure 6 is a view similar to Figure 5, but showing the head and guard in its operative position.

Figure 7 is a rear elevation of the upper portion of the supporting standard and head.

The metal working machine is of any known or desired character, so long as it will operate on long bar stock. Therefore only the chuck structure is indicated, and this is designated generally by the reference numeral 8. It is electrically driven in a well known manner for the purpose of rotating the bar stock, which is shown at 9. Usually in these machines there is a feed sleeve 10 that is removable from the rear end of the chuck structure and is replaceable with other sleeves having bores of different diameters for the purpose of permitting the machine to be used with stock of different cross sectional configuration and size.

Located in rear of the machine is supporting means, which may be in the form of one or more standards. One of said standards is shown in Figure 1 and is designated generally 11. Two standards are illustrated in Figure 2, but as these are similar in all respects, they are given the same reference numeral. The standard consists of a tubular base 12, in which is slidably fitted the lower end of a standard body 13, having a flange 14 that overlies the base 12. Through this flange are threaded adjusting bolts 15 that bear upon lugs 16 formed upon opposite sides of the base 12. The standard body 13 is thus vertically adjustable. Fitted into the upper end of the body 13 is a cap 17, to one side of which is hinged, as shown at 18, a head 19, that is adapted to rest flat upon the cap 17, or be swung rearwardly to one side of the same. Its rearward movement is limited by abutments 20 carried respectively by the cap and head and located adjacent to the hinged connection. The head is secured upon the cap by a swinging retaining bolt 21 that is pivoted at 22 to the cap and engages in a slot 23 formed in the free side of the head. A clamping nut 24 is carried by the bolt 21 and bears upon the head.

The head includes a collar 25 through which extends a housing in the form of an elongated sleeve 26 secured in the collar by a suitable set screw 27. As above indicated, this housing may be carried by one standard only as shown in Figure 1, or may be supported on two or more standards, as indicated in Figure 2.

The cap 17 is provided with a socket 28, in which an electric circuit controller is placed. This circuit controller may include terminals 29, with which cooperate other terminals 30 carried by a vertically moving plunger 31 mounted in the socket 28. A spring 32 in said socket, normally holds the plunger elevated with the contact elements 30 out of engagement with the contact elements 29, but when the head 19 rests flat upon the cap 17, then the plunger 31 is de-

pressed and the elements 29 and 30 are in electrical contact. An electric circuit for the driving motor of the chuck structure 8 is diagrammatically shown in Figures 1 and 2 and includes a source of electrical energy 33. An electric circuit 34 includes said source of electrical energy 33, the driving motor for the chuck 8, the circuit closer 29—32 in the cap 17, and the usual manual switch 35.

With this structure, when the head 19 is on the cap 17, the guard housing 26 is alined with the chuck, and a bar of stock placed in said chuck has the rear portion which projects therefrom housed by the sleeve, as indicated in Figures 1 and 2. As a consequence the freely rotating projecting bar stock is covered and no one can come into contact therewith and be injured thereby. Should it become necessary to remove the sleeve 10 of the chuck or gain access to the rear end thereof for any purpose, the housing can be swung to one side and is then out of the way but the machine cannot then be operated because the circuit closer 29—32 is open. Careless workmen therefore cannot leave the guard in its inoperative position and run the machine with the bar stock exposed. They must bring the housing into its operative position and then it becomes necessary for him to insert the bar stock through the housing into the machine so that said stock is bound to be covered whenever the machine is operated.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim, is:

1. The combination with a metal working machine having a rotatable chuck for holding bar stock, of a housing for the portion of the bar stock that projects from the machine, and means controlled by the housing for controlling the operation of the chuck.

2. The combination with a metal working machine having a rotatable chuck for holding bar stock, of a housing movably supported at the rear end of the machine for containing the portion of the bar stock that projects from the machine, and means controlled by the position of the housing for controlling the operation of the chuck.

3. The combination with a metal working machine having an electrically driven rotatable chuck for holding bar stock, of a guard movably mounted at the rear end of the chuck, and an electric circuit including the chuck driving means and a circuit controller operated by the guard.

4. The combination with a metal working machine having an electrically driven rotatable chuck for holding bar stock, of a support at the rear end of the chuck, and a housing for the bar stock projecting from the chuck, said housing being movably mounted on the support, an electric circuit controller mounted on the support and actuated by the housing, and an electric circuit including the chuck driving means and the circuit controller.

5. The combination with a metal working machine including an electrically driven rotatable chuck for holding bar stock, of a standard located in rear of the chuck, a circuit controller including a movable member mounted in the top of the standard, a head hinged to the top of the standard and adapted to rest thereon and on the movable member of the circuit controller to close the same, and an electric circuit including the driving means for the chuck and the circuit closer.

In testimony whereof, I affix my signature.

WILLIAM G. MUELLER.