

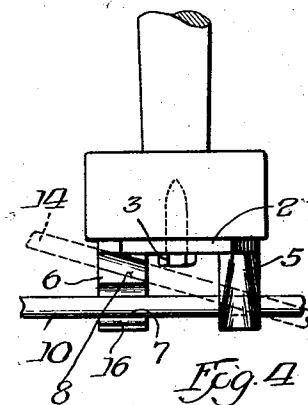
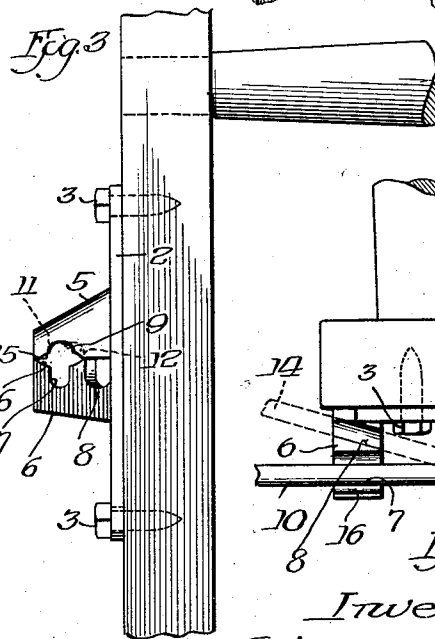
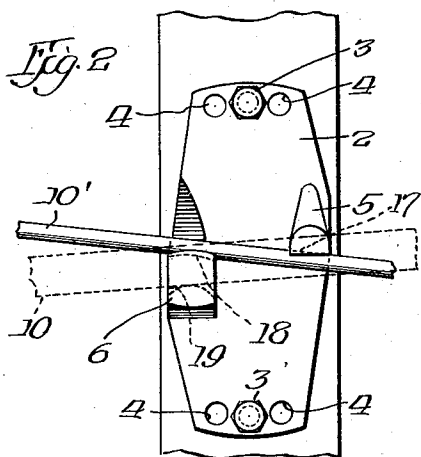
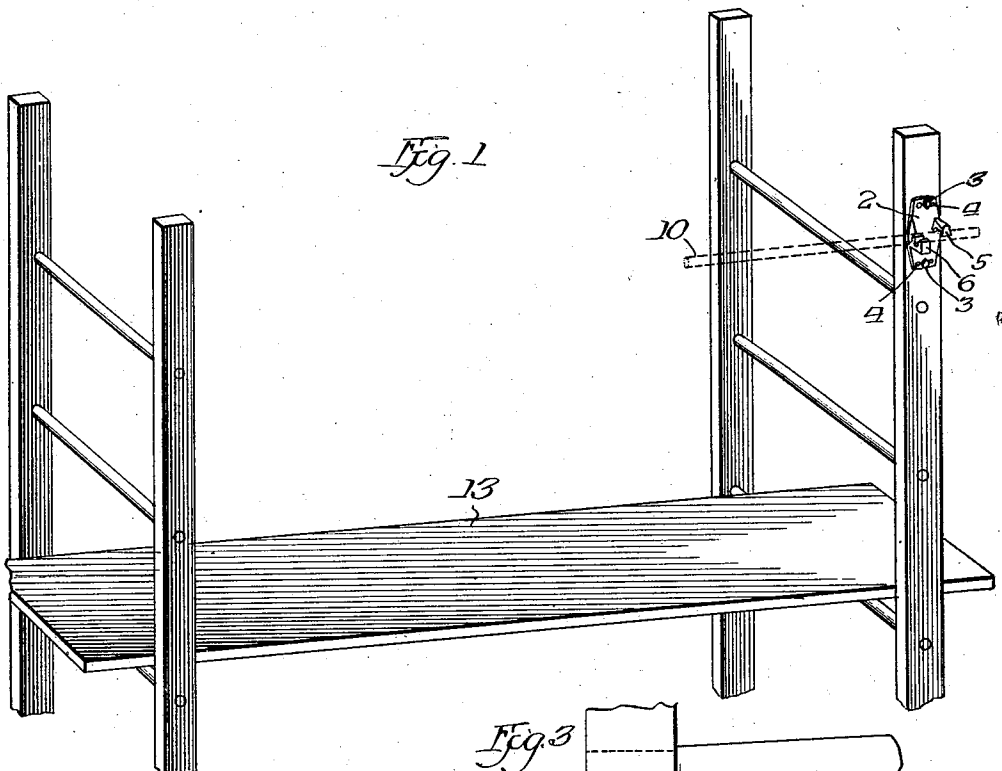
June 10, 1930.

M. E. JOHNSON

1,762,230

PIPE BENDER

Filed July 26, 1928



Witness:

Ed. Johnson

Inventor

Martin E. Johnson,
By *Ira Wilson*
Atty.

UNITED STATES PATENT OFFICE

MARTIN E. JOHNSON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO IRA J. WILSON, OF WINNETKA, ILLINOIS

PIPE BENDER

Application filed July 26, 1928. Serial No. 295,446.

This invention pertains to pipe bending devices, particularly those devices serving as holding appliances for the pipe or conduit while the pipe is bent by a force exerted on the pipe itself by the workman or the operator.

Devices of the above general character are not new, but most of them are complicated, expensive to manufacture and often difficult to use. Many are not susceptible of use in places where it may be desired to use them as, for instance, when a workman is standing on his scaffold or platform and it becomes necessary for the workman to dismount from the platform to do the bending of the pipe or conduit as the case may be.

One of the primary objects of the invention, therefore, is to provide a pipe bending or holding device simple and inexpensive to construct and one which will have no complicated or moving parts to get out of order or break.

Another important object is to provide a device of the aforesaid character susceptible of use for bending a conduit or pipe of oval cross section and to bend such pipe or conduit at an angle to either its major or minor cross sectional axis.

A further object is to provide in a pipe bending device or appliance an arrangement whereby the portion of the pipe that will be grasped by the workman's hands and against which his force will be exerted will project into an accessible position with respect to his position on a scaffold or the like even though the device itself may be situated on the side or other lateral portion of the scaffold. In this connection it may be mentioned that the slots of what may be termed the fulcruming and forming members, projections or elements, as they may be variously termed, are so arranged that the pipe when disposed between the fulcruming and forming elements with the device secured to a side or laterally facing portion of the scaffold or other structural support, may be placed in a position to parallel the edge of the platform of the scaffold or to project thereover at its end upon which the force is

to be exerted into an accessible position for the grasp of the workman.

Still further objects, advantages, uses and purposes of the invention will be or should become readily appreciated after perusing the following description and claims, and after viewing the drawing in which:

Fig. 1 is a perspective view of a usual form of scaffold arrangement showing one form of my invention applied thereto,

Fig. 2 is a front elevational view of the form of the device illustrated in Fig. 1 attached to a fragment of a scaffold and showing two positions of a piece of oval conduit disposed between the fulcruming and forming elements or projections ready to be bent.

Fig. 3 is a side elevational view of the device illustrated in Fig. 2 looking from the right-hand side of this figure, and

Fig. 4 is a top plan view of the device illustrated in Fig. 2.

The device in the form illustrated comprises a base plate or member 2 the rear side of which is adapted to lie against and be secured to a suitable supporting structure through the intermediary of lag screws or bolts 3 which are passed through openings 4 into the support, and the front side of which carries a fulcruming lug or projection 5 and a forming lug or projection 6 secured thereto in any suitable manner. In the illustrated embodiment the device is a unitary casting, the lugs 5 and 6 being cast integrally therewith. The three holes in each of what may be termed the top and bottom ends of the device are provided so that the device may be adjusted to any desirable angle and secured in such position, as will be understood. The forming lug or element 6 is provided with two forming grooves 7 and 8 of greater depth than width, extending transversely of and through what may be called the inner or upper side in order to receive the oval conduit for bending the same about a minor axis as a pivot, although, as will more clearly appear hereinafter, the pipe may be bent about the major axis. The depth of the grooves 7 and 8 is preferably sufficient to hold the pipe against turning, when bending pressure is applied because

the workman with a short length of pipe may have all he can do to effect the bending without having to keep the pipe or conduit in proper alignment while he is doing so.

5 The fulcruming lug, projection or element 5 is preferably provided with but a single groove 9 extending transversely thereof and therethrough on what may be termed its bottom or inner side, and this groove 9 10 while formed similar to the grooves 7 and 8 need not be quite so deep since the other grooves will prevent the pipe 10 from turning. The groove 9, however, is flared slightly at its end toward the forming element 15 6, as shown at 11, and preferably slightly more on its side toward the base member 2, as shown at 12. The axes of the grooves 7 and 9 are preferably so disposed that they are practically in alignment and parallel the 20 plane of the base member 2, flaring at 11 permitting a slight amount of play so that there will be no sticking. The axis of the groove 8, however, is disposed at an angle to the axis of the groove 7 and so that its 25 projection will make an acute angle with the projection of the plane of the base to the left viewing Fig. 2, although the flaring at 12 permits the pipe or conduit to be disposed through the groove 9 even in this 30 position.

When the pipe 10 is disposed through the grooves 7 and 9 with the device mounted in a position such as that illustrated in Fig. 1, the pipe will extend substantially parallel 35 the edge of the scaffold platform 13. This may be satisfactory in some instances, but if the platform be narrow or for some other reason the workman is obliged to lean out over the edge thereof to reach the pipe or 40 to bend it, a slip may mean a serious fall. To minimize this danger, if the pipe be disposed through the grooves 8 and 9, the end of the pipe on which the workman will bear downwardly projects inwardly toward 45 the workman and over the platform 13, as will be appreciated from Fig. 4. The inwardly projecting end of the pipe in this figure is designated 14.

For the purpose of permitting an oval 50 pipe or conduit to be bent about its major axis as a pivot the fulcruming and forming elements 5 and 6 may be provided with shallow aligning grooves 15 and 16. The pipe may thus be laid on its side as illustrated 55 at 10' in Fig. 2 and bent to the desired extent about one of its major axes as a pivot. The shallow groove 15 flares upwardly slightly toward the groove 16 in the forming 60 element 6, as shown at 17, to cant the pipe slightly upwardly while the bottom of the groove 16 is slightly rounded, as shown at 18, to minimize the possibility of an edge biting into or cutting the pipe or conduit as 65 it is being bent. The bending edges of the

grooves or slots 7 and 8 may likewise be rounded off, as shown at 19.

I have illustrated and described what is at present a preferred form of the invention, but it will undoubtedly be appreciated that the invention may be embodied in devices 70 bearing little if any structural resemblance thereto. It should also be understood that by the term "scaffold" as used in the description and claims I mean any supporting 75 structure whether it be a ladder, temporary interior or exterior building scaffold or other supporting device for a workman, his work or the bender. Consequently, I do not wish to be limited except by the spirit of the invention and the scope of the appended 80 claims.

I claim:

1. A pipe bender for bending oval conduit and the like comprising a member having 85 means whereby it may be secured to a support and a pair of spaced projections extending from the same side thereof and in the same general direction therefrom, a transversely extending groove of substan- 90 tially greater depth than width in one side of one of said projections and a transversely extending groove in the correspondingly opposite side of the other projection, said 95 grooves registering with one another and being adapted to receive through them a piece of pipe to be bent said projections also hav- 100 ing substantially aligned shallow grooves adapted to receive the oval conduit with its major axis perpendicular to the general plane of said member.

2. A pipe bender comprising a plate hav- 105 ing means whereby it may be secured to a support with one side thereagainst, and a pair of shaped forming elements projecting from the opposite side of the plate and in the 110 same general direction, each of said elements having a transverse groove aligned and registering with the groove in the other, said elements being so arranged with respect to 115 said plate that an extension of the axes of said grooves in one direction will intersect and make an acute angle with an extension of the plane of said plate.

3. A pipe bender comprising a plate 115 adapted to be secured to a support with one side thereagainst, and a pair of forming elements projecting from said plate in spaced relation to one another, one of said 120 elements having a groove therein and the other of said elements having two spaced grooves therein, the last said two grooves each being substantially aligned with the first said groove and one of said two grooves being so directed that an extension of the line 125 of its axis in one direction will intersect an extension of the plane of said plate.

4. In a pipe bender for use with a scaffold having a platform, and a supporting ele- 130 ment for said platform, a pipe bender,

means for securing said bender to an outer surface of said supporting element within reach from said platform, said bender comprising a plate adapted to be secured to a support with one side thereagainst, and a pair of forming elements projecting from said plate, in spaced relation to one another, one of said elements having a transverse groove therein and the other of said elements having two spaced transverse grooves therein, the last said two grooves each being substantially aligned with the first said groove and one of said two grooves being so directed that an extension in one direction of the line of its axis will intersect an extension of the plane of said plate.

thereof in one direction will intersect an extension of the plane of said plate.

In witness of the foregoing I affix my signature.

MARTIN E. JOHNSON.

5. In a pipe bender for use with a scaffold having a platform and a supporting element for said platform, means for securing said pipe bender to an outer surface of said supporting element within reach from said platform, said bender comprising a plate secured to said supporting element with one side against the element, and a pair of forming elements projecting from said plate, in spaced relation to one another, each of said elements having a transverse groove aligned and registering with the groove in the other, said grooves being so disposed relatively to said plate that an extension of their axes in one direction will intersect a continuation of the plane of said plate so as to project over said platform.

6. In a pipe bender for use with a scaffold having a platform, and a supporting element for said platform, means for securing said pipe bender to an outer surface of said supporting element within reach from said platform, said bender comprising a plate adapted to be secured to said supporting element with one side thereagainst, and a pair of forming elements projecting from said plate, in spaced relation to one another, one of said elements having a transverse groove therein and the other of said elements having two spaced transverse grooves therein, the last said two grooves being so disposed relatively to said plate that an extension of the axis of one of said grooves in one direction will intersect an extension of the plane of said plate, the first of said grooves being of greater width than said latter two grooves.

55 7. A pipe bender comprising a plate adapted to be secured to a supporting element and a pair of forming elements projecting from said plate in spaced relation to one another, one of said elements having a transverse groove therein, said groove having its terminating edges rounded and the
60 other of said elements having two spaced transverse grooves therein, one of the last said two grooves being so disposed relatively
65 to said plate that an extension of the axis

CERTIFICATE OF CORRECTION.

Patent No. 1,762,230.

Granted June 10, 1930, to

MARTIN E. JOHNSON.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 105, claim 2, for the word "shaped" read spaced; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of September, A. D. 1930.

M. J. Moore,
Acting Commissioner of Patents.

(Seal)