

[54] **PRESS FOR REMOVING BEARINGS**

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[58] **Field of Search** 29/256, 257, 258, 259,
29/260, 267, 283, 252

[56] **References Cited**

UNITED STATES PATENTS

1,578,174	3/1926	Robinson et al.	29/258
3,111,752	11/1963	Simmons	29/283 X
3,217,395	11/1965	McBroom et al.	29/252

FOREIGN PATENTS OR APPLICATIONS

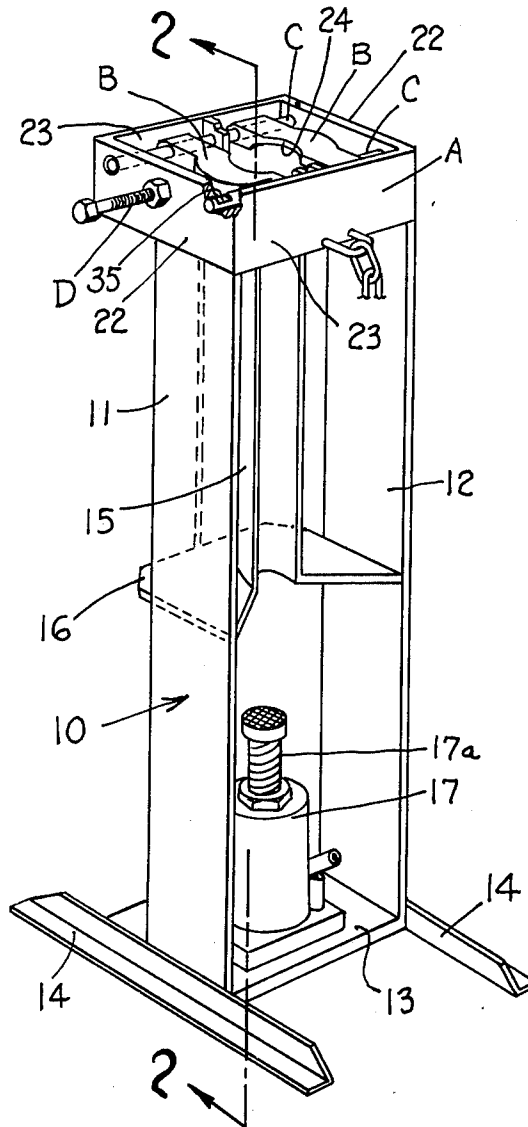
829,129	1/1952	Germany	29/259
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[57] **ABSTRACT**

A press for removing bearings from the rear axles of automotive vehicles wherein bearings are carried inside and closely adjacent mounting housings is illustrated, wherein a vertical frame carries a ram assembly adjacent a lower portion thereof including an open topped housing having a base with an opening in a medial portion thereof for receiving an axle is carried adjacent the top of the frame, a pair of opposed jaws are carried within the housing on spaced guides and opposed threaded elements are carried by the housing between the guides bearing against the jaws urging the jaws into engagement between the bearings and the mounting housing exerting a separating force therebetween.

3 Claims, 3 Drawing Figures



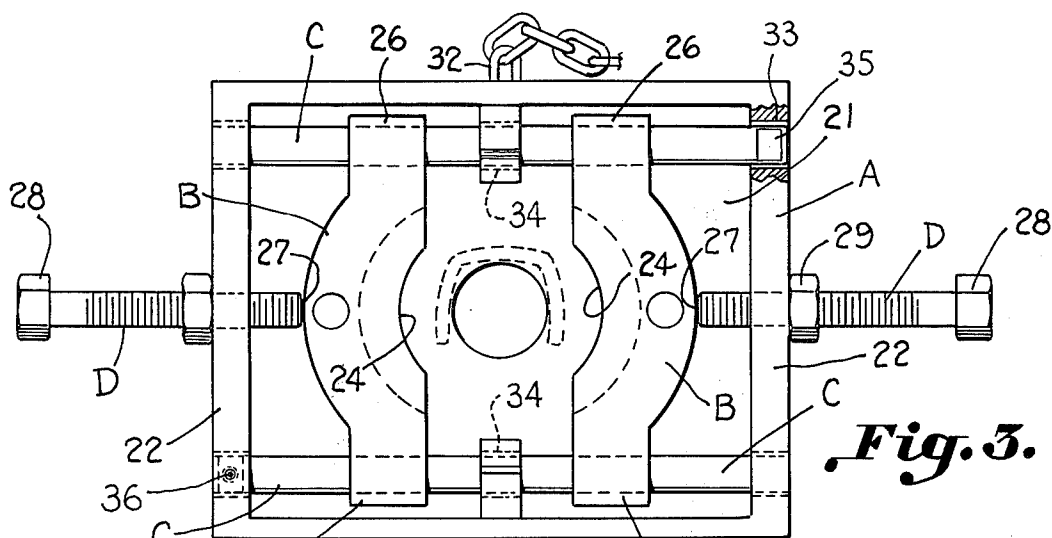


Fig. 3.

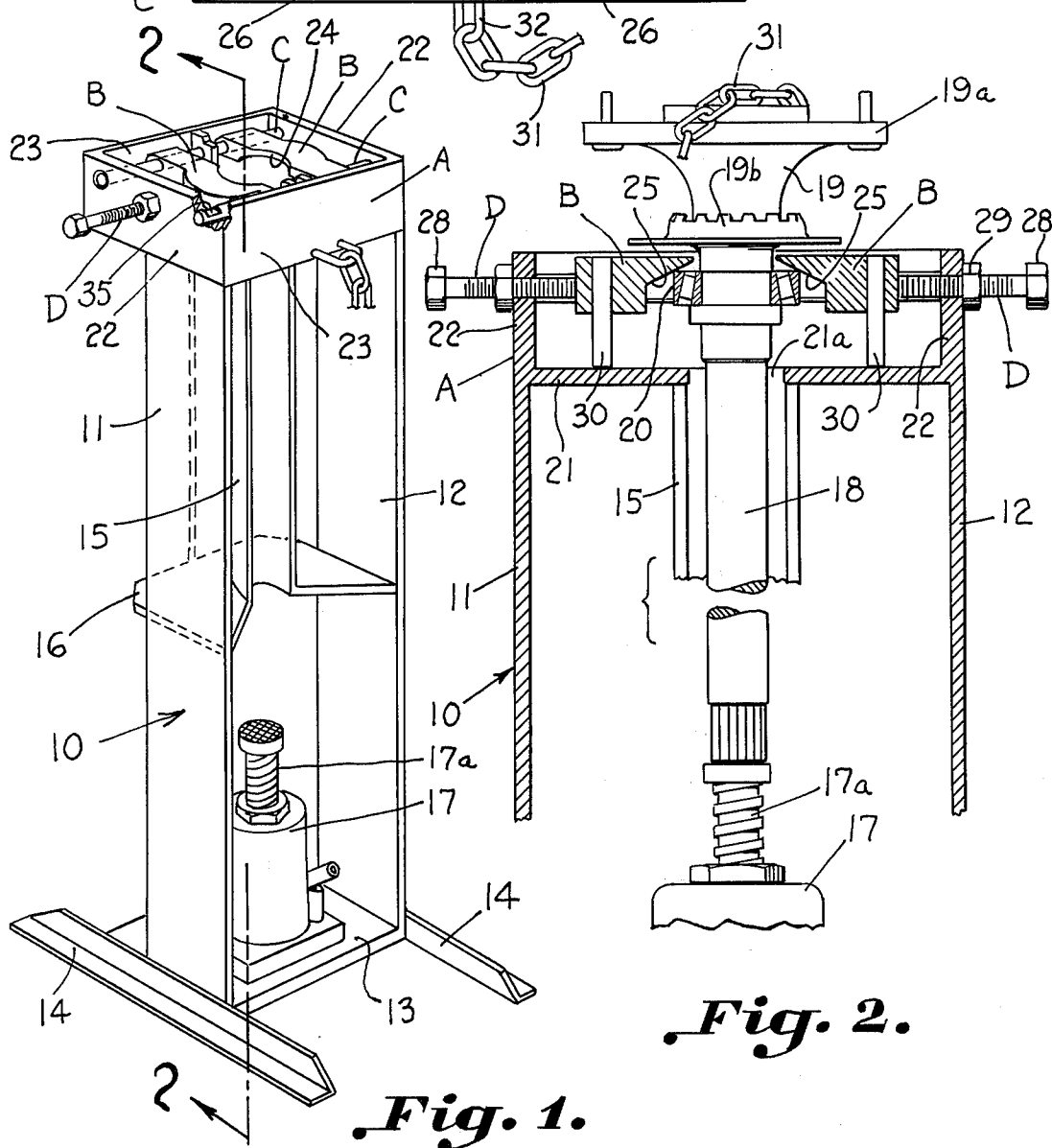


Fig. 1.

Fig. 2.

PRESS FOR REMOVING BEARINGS

BACKGROUND OF THE INVENTION

Bearing pulling devices for automotive use have been provided such as those illustrated in U.S. Pat. Nos. 3,103,064 and 3,111,752. In both instances, it has been difficult to obtain the proper gripping force upon the bearing and in the case of U.S. Pat. No. 3,111,752, although a separating force is exerted by the jaws, there is a tendency for one jaw to move in more than the other exerting an unbalanced force upon the bearing, tending to break the bearing. This is because both jaws of U.S. Pat. No. 3,111,752 are freely movable and are normally applied prior to placing the assembly in the vertical frame position. In other words, where one jaw engages on one side there is a tendency to close the space between the bearing and housing on the other side resulting in all the force being concentrated against the bearing on one side. In both instances, there is a tendency to crack the bearing causing shattering with attendant danger to operators who may be struck by parts of the bearing which are forcefully removed. There is a further tendency for the shaft and the mounting housing carried thereby to be ejected out of the top of the frame when the bearing suddenly gives, resulting in danger to operators from that occurrence.

Accordingly, it is an important object of this invention to provide a bearing puller for automotive use which is safe and which may be readily utilized by unskilled operators.

Another important object of the invention is the provision of a press for removing bearings from the rear axles of automobiles and the like wherein a pair of opposed jaws are movable to exert a balanced separating force between the bearing and the mounting housing which is normally integral with the shaft.

BRIEF DESCRIPTION OF THE INVENTION

It has been found that apparatus for removing bearings from axles and the like may be provided utilizing the usual vertical frame wherein an open topped housing having a base with an opening in a medial portion thereof for receiving an axle is provided with opposed jaws carried on guides within the housing with the provision of a pair of opposed threaded elements intermediate the guides for exerting a force tending to close the jaws to apply a balanced separating force between the bearings and the mounting housings.

BRIEF DESCRIPTION OF THE DRAWING

The construction designed to carry out the invention will be hereinafter described, together with other features thereof.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawing forming a part thereof, wherein an example of the invention is shown and wherein:

FIG. 1 is a perspective view illustrating a press for removing bearings constructed in accordance with the present invention.

FIG. 2 is a transverse, sectional elevation taken on the line 2-2 in FIG. 1, and

FIG. 3 is a top, planned view further illustrating the press for removing bearings illustrated in FIGS. 1 and 2.

DESCRIPTION OF A PREFERRED EMBODIMENT

The drawing illustrates a press for removing bearings from the rear axles of an automobile and the like having bearings carried inside and closely adjacent mounting housings. A vertical frame carries a ram assembly adjacent a lower portion thereof for exerting a pushing force upon an end of axle carried vertically by said frame remote from the bearing. An open topped housing A having a base with an opening in a medial portion thereof for receiving an axle is carried adjacent the top of the frame. A pair of opposed jaws B are carried within the open topped housing. A pair of spaced guides C carry each of the jaws therebetween and are mounted upon the housing. Opposed threaded elements D are threadably carried by the housing bearing against respective jaws between respective guides. Thus, the jaws are urged inwardly between the bearings and the mounting housing exerting a separating force therebetween.

The press is illustrated as including a vertical frame designated as 10 in FIGS. 1 and 2. The frame includes a pair of opposed standards 11 and 12 carried by a base 13. The base is provided with a pair of opposed angle irons 14 to add stability. The frame 10 carries a substantially u-shaped guide 15 which is open at the front for receiving a rear axle and the like. The frame is supported at the bottom in a medial portion of the frame by a base support 16 and is supported at the top by the open topped housing. The frame 10 carries a jack 17 having a ram 17a on the base 13 for exerting an upward thrust against a rear axle and the like which is designated at 18. The axle, which is illustrated, is in the form of a rear axle for an automobile, carries a hub or mounting housing 19 integral therewith. The hub has a mounting flange 19a as well as a lower flange 19b adjacent the bearing 20 (FIG. 2).

The open topped housing A has a base 21 which defines an opening 21a in a medial portion thereof for receiving an axle and is carried adjacent the top of the frame 10. The open topped housing A further includes opposed sides 22 as well as end members 23.

The pair of opposed jaws B carried within the housing each have arcuate tapered forward edges 24 (FIG. 3). Each of the jaws also has a lower camming surface 25 as best illustrated in FIG. 2 which extends downwardly and outwardly from the opposed forward edges.

Each of the jaws B are slideably mounted at lateral extensions 26 upon a pair of spaced, aligned guides 27 fixedly mounted upon the open topped housing A.

The opposed threaded elements D are threadably carried within opposed sides 22 of the open topped housing and each has an inner end 27 for exerting a compressive thrust tending to urge the jaws together when the bolt head 28 carried by the outside ends of the threaded elements is turned by an operator as with a wrench. It will be noted that nuts 29 are provided for maximizing thread contact and that the opposed threaded elements D are mounted intermediate the guides C. If desired, a depending shank 30 engaging the upper surface of the base member 21 in sliding engagement may be provided to add stability to the jaws.

A safety fastening means in the form of a chain 31 may be attached in fixed relation to the assembly on each end as at 32 so as to extend above and across the mounting housing to limit a percipitous upward movement thereof as may cause injury to an operator.

In order to insure axial alignment of the axle 18 the guide bars C have a loose fit in the housing A as illustrated at 33 and at an intermediate support as at 34. A slot 35 is provided adjacent one end of each of the guide bars C for loosely receiving a screw 36 which is threaded into the housing A to prevent removal of the guide bars C from the housing A.

While a preferred embodiment of the invention has been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit or scope of the following claims.

What is claimed is:

1. In a press for removing bearings from the rear axles of an automobile and the like having bearings carried inside and closely adjacent mounting housings, wherein a vertical frame carries a ram assembly adjacent a lower portion thereof for exerting a pushing force upon an end of axle carried vertically by said frame remote from the bearing, the improvement comprising:

an open topped housing carried by said frame having a base with an opening in a medial portion thereof for receiving an axle carried adjacent the top of the

frame;

a pair of opposed jaws carried within said open topped housing;

a pair of spaced guides carrying each of said jaws therebetween mounted upon said open topped housing; and

opposed threaded elements threadably carried by said open topped housing bearing against respective jaws between respective guides;

whereby said jaws are urged inwardly between said bearings and said mounting housings exerting a separating force therebetween.

2. The structure set forth in claim 1 wherein said jaws each have a lower camming surface extending downwardly and outwardly from opposed forward edges, and wherein said guides are loosely carried in the housing to insure axial alignment of the axle.

3. The structure set forth in claim 2 including a safety fastening means carried by said frame extending above and across the mounting housings to limit a percipitous upward movement thereof as may cause injury to an operator.

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