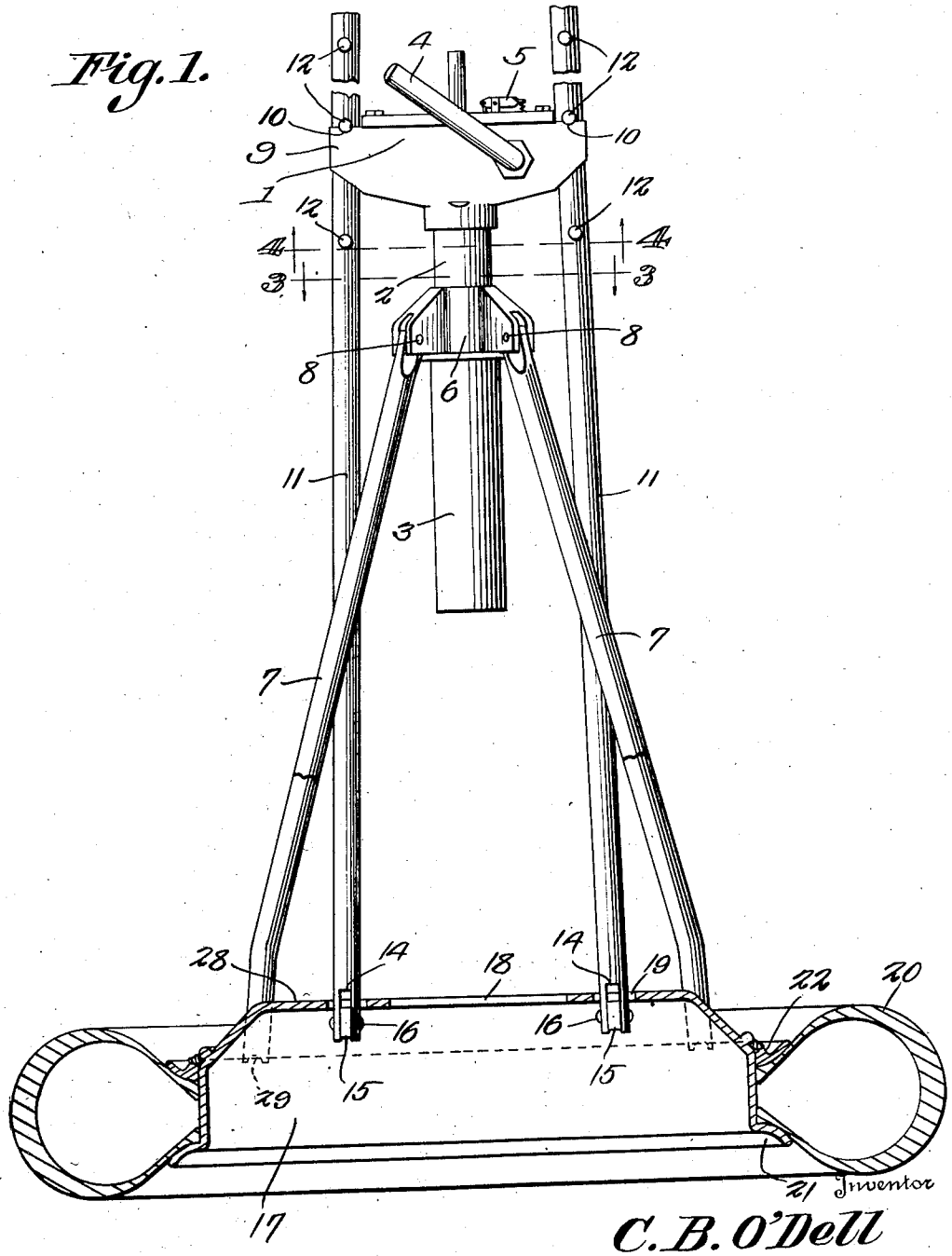
Dec. 13, 1932. C. B. O'DELL 1,890,746

HYDRAULIC TIRE PRESS

Filed June 27, 1931 3 Sheets-Sheet 1

Fig. 1.



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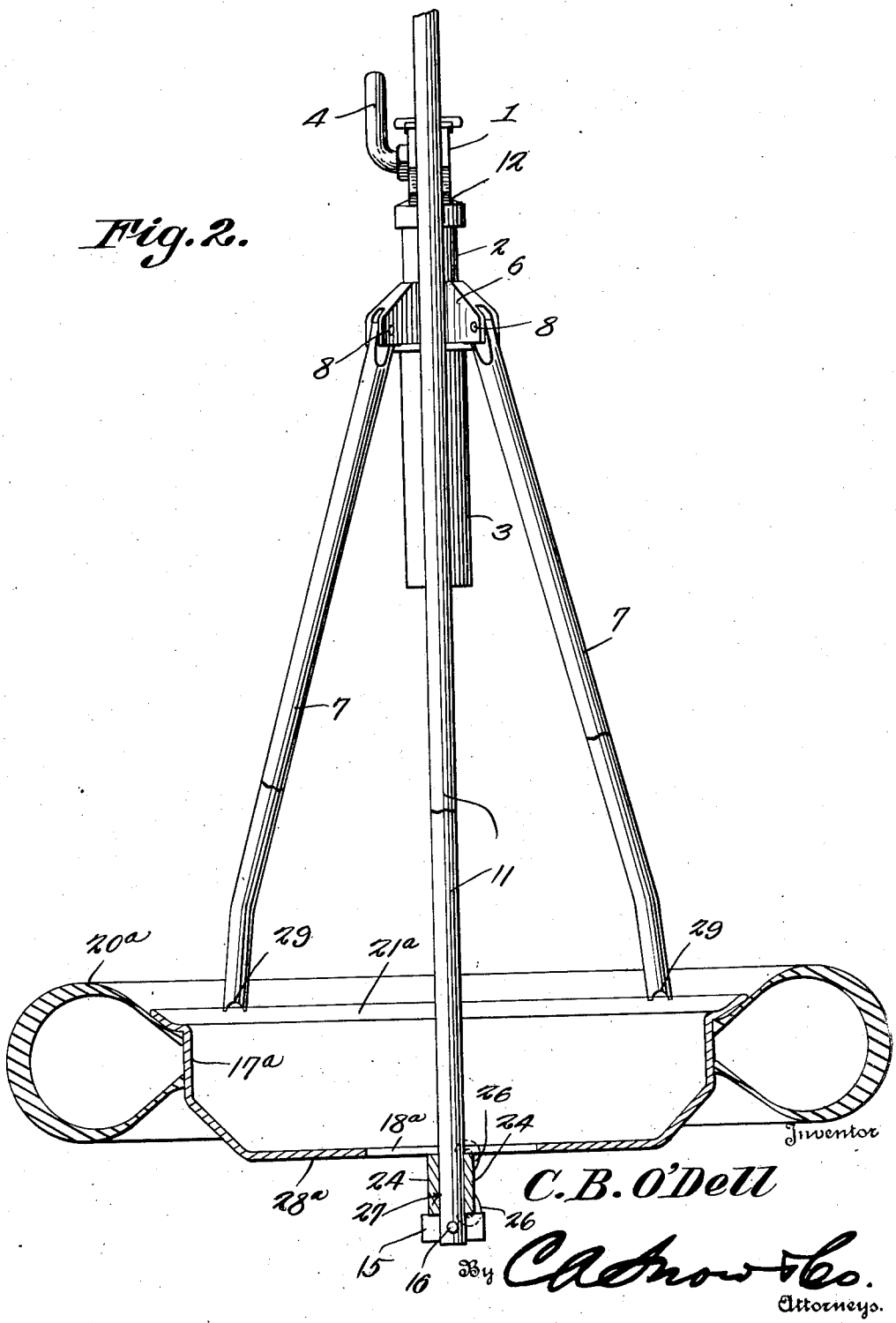
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Fig. 2.



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Fig. 3.

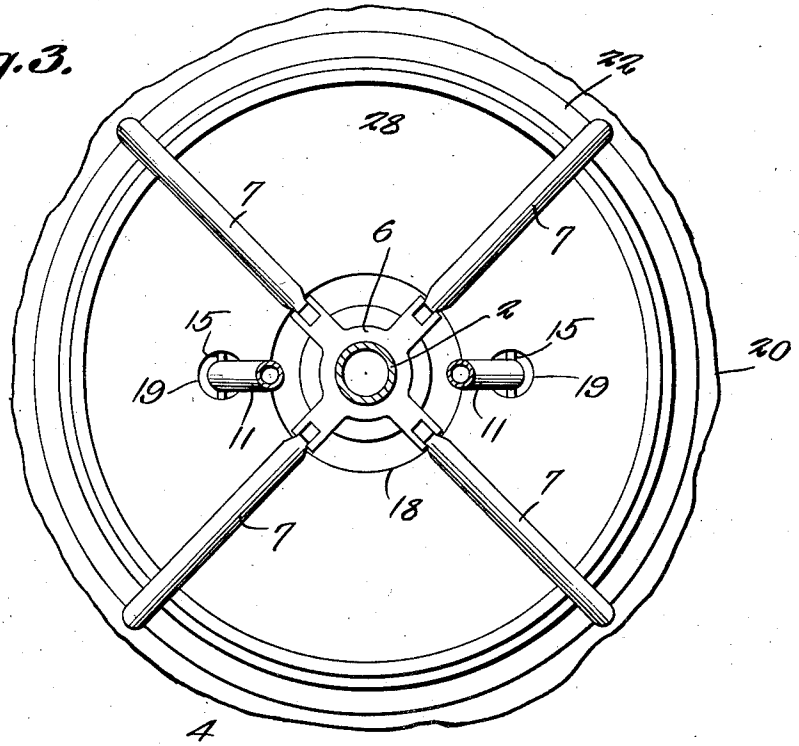


Fig. 4.

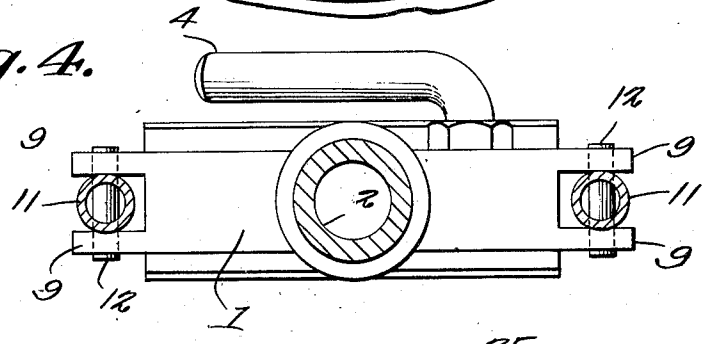
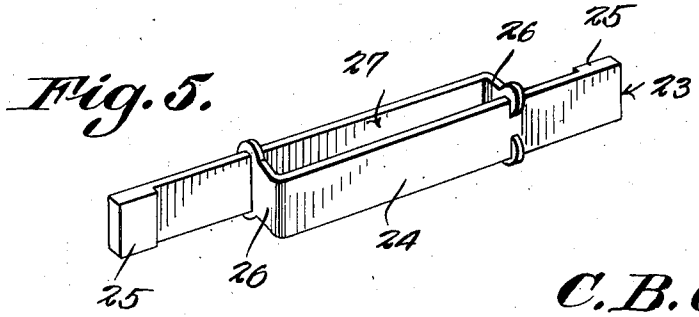


Fig. 5.



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UNITED STATES PATENT OFFICE

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HYDRAULIC TIRE PRESS

Application filed June 27, 1931. Serial No. 547,381.

This invention aims to provide a simple but effective means for seating a tire-holding ring on the rim of a vehicle wheel, and to provide means whereby the tire may be removed from the rim, after the ring has been taken off.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 shows in elevation, a device constructed in accordance with the invention, the machine being arranged as it will appear when the ring is being seated;

Figure 2 is an elevation at right angles to Figure 1 and showing the machine as it will appear when the tire is being forced off the rim;

Figure 3 is a section on the line 3—3 of Figure 1;

Figure 4 is a section on the line 4—4 of Figure 1;

Figure 5 is a perspective view of the cross piece.

The device forming the subject matter of this application embodies a hydraulic press. The hydraulic press may be of various kinds, without departing from the spirit of the invention. Since any particular hydraulic press is a separate invention from the device herein disclosed, the press will be described briefly.

The hydraulic press may comprise a body 1 carrying a fixed cylinder 2 on which a movable piston 3 is mounted to reciprocate. The press is operated by a handle 4, and the numeral 5 designates means for operating the relief valve of the press. It is with such a press, or with a similar press, that the device forming the subject matter of this application is adapted to be used.

A bracket 6 is fixed to the upper end of the piston 3. Thrust members 7, such as legs, are pivoted at 8 to the bracket 6, to swing outwardly and inwardly. The legs or thrust members 7 may be of the angular form as shown in Figure 1 of the drawings, so that the lower ends of the legs will exert, as nearly as possible, a vertical thrust on the parts with which they coact, in the operation of the machine.

At its ends, the body 1 of the press is provided with pairs of ears 9 having seats 10 in their upper edges. Rigid tension members 11, which may be pieces of pipe, are disposed between the ears 9. The tension members 11 have a plurality of vertically spaced cross arms 12, providing for vertical adjustment of the tension members 11, the cross arms 12 being received in the seats 10 which are formed in the upper edges of the ears 9. At their lower ends, the tension members 11 have slots 14 in which transverse anchors 15 are pivoted as shown at 16.

Figure 1 shows the machine placed to seat the ring 22 on the rim 17 of a vehicle wheel, opposite to the fixed flange 21 of the rim. The body portion of the wheel is marked by the numeral 28, and has a central opening 18, and other, smaller openings 19 disposed thereabout. The tire is marked by the numeral 20.

Let it be supposed that, as shown in Figure 1, the machine is arranged to force the ring 22 inwardly upon the tire 20. Then the tension members 11 are inserted downwardly through the openings 19 of the body 28 of the wheel, it being possible to turn the anchors 15 into alignment with the tension members 11 so that the tension members can be inserted downwardly through the openings 19. After the anchors 15 are below the body 28 of the wheel, the anchors are turned crosswise of the tension members 11, and engaged beneath the body 28, to hold the tension members assembled with the body 28 of the wheel. The tension members 11 can be adjusted vertically, with respect to the body 1 of the hydraulic press, by locating any desired ones of the cross arms 12 in the seats 10. The legs or

thrust members 7 are swung outwardly, and their ends are engaged with the ring 22. It is obvious that by operating the press, through the instrumentality of the handle 4, the tension members 11 will pull upwardly on the body 28 of the vehicle wheel, the ring 22 being crowded downwardly to a seat, through the instrumentality of the thrust members 7, which have grooves 29 in their lower ends so that they will not slip off the ring 22.

In order to take the tire 20 off the rim 17, the tire and the rim are turned upside down, after the ring 22 has been removed. This operation will be understood readily when Figure 2 of the drawings is noted, although that figure shows the machine in use upon a wheel body which differs slightly from the one shown in Figure 1 of the drawings.

In Figure 2, parts hereinbefore described have been designated by numerals previously used, with the suffix "*a*". The modification in the wheel body arises out of the fact that the openings 19 of Figure 1 are not present. In carrying out the operation contemplated in Figure 2, the lower ends of the legs 7 are placed against the tire 20*a*. The tension members 11 are extended downwardly through the central opening 18*a* of the wheel body 28*a*.

Recourse is had to a longitudinally extensible cross piece 23 which is shown in detail in Figure 5 of the drawings. The cross piece 23 is composed of two parallel rigid members 24, which may be thickened slightly at their outer ends, as shown at 25. Each of the members 24 is provided at one end with a laterally disposed arm 26, in which the other of said members is received slidably. The members 24 are spaced apart by the arms 26, so that an opening 27 exists between them. It is through this opening that the tension members 11 pass, as shown in Figure 2 of the drawings, the cross piece 23 being supported on the anchors 15, and the member 23 extending across the opening 18*a*, and engaging the lower surface of the wheel body 28*a*. It is desirable to have the cross piece 23 adjustable as to length, so that it will span the opening 18*a*, regardless of whether the opening 18*a* is large or small, and the cross piece can be shortened, so that its ends will not engage the tire 20*a* of Fig. 2, when the cross piece rises from the position there shown.

With the parts arranged as shown in Figure 2 of the drawings, it is obvious that by operating the hydraulic press, the tension members 11 will pull upwardly on the body 28, and the thrust members 7 will push downwardly on the tire 20*a*, thereby removing the tire from the rim 17*a*.

The device forming the subject matter of this application is simple in construction, but it will be found to be highly useful and efficient for use on vehicle wheels which, owing to size, rusting, or any other cause, cannot be handled conveniently in any other way.

Having thus described the invention, what is claimed is:—

1. The combination with a hydraulic press, including relatively movable piston and cylinder members, of legs pivoted to one member of the press, to swing inwardly and outwardly, tension members provided at their lower ends with anchors, and means for mounting the said tension members on the other relatively movable member of the press for longitudinal adjustment.

2. The combination with a hydraulic press, including relatively movable piston and cylinder members, of legs pivoted to one of said relatively movable members for inward and outward swinging movement, tension members connected to the other of said relatively movable members of the press, a longitudinally extensible cross piece, and means for mounting the cross piece removably on the tension members.

3. The device of claim 1, in combination with a longitudinally extensible cross piece supported on the anchors.

4. The device of claim 1, in combination with a longitudinally extensible cross piece made up of bars provided, each, with angularly disposed arms, in which the other bar slides, the arms spacing the bars apart, to provide an opening through which the tension members extend, the cross piece being supported on the anchors.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

CHARLES B. O'DELL.