J. H. STALEY.

AXLE STAND.

APPLICATION FILED NOV. 24, 1919.

1,350,119. Patented Aug. 17, 1920.

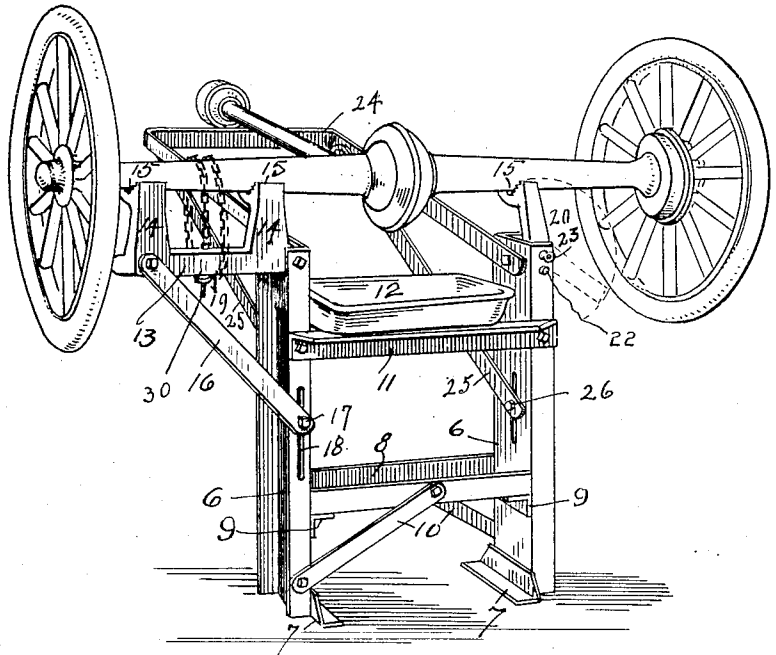

Fig. 1.

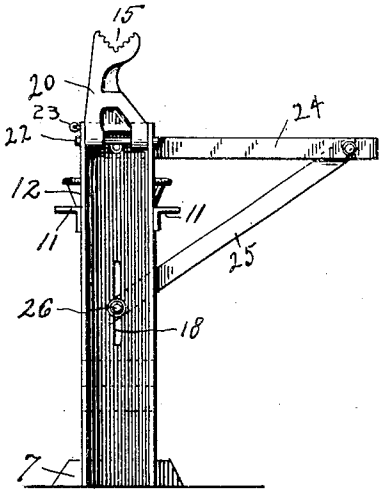

Fig. 2.

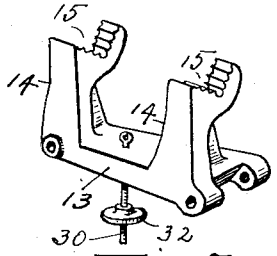

Fig. 3.

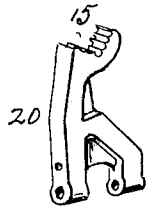

Fig. 4.

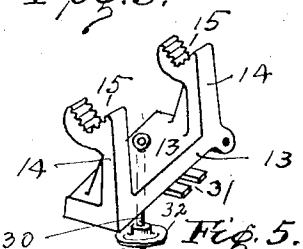

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOSEPH H. STALEY, OF COLUMBUS, INDIANA.

AXLE-STAND.

1,350,119. Specification of Letters Patent. Patented Aug. 17, 1920.

Application filed November 24, 1919. Serial No. 340,375.

To all whom it may concern:

Be it known that I, JOSEPH H. STALEY, a citizen of the United States, and residing at Columbus, in the county of Bartholomew and State of Indiana, have invented a new and useful Axle-Stand, of which the following is the specification.

Automobile and truck-axles are exceedingly inconvenient, clumsy things to work with, and usually, when undergoing construction or repair, the work is done on two trestles, upon a box, or on the floor. The mechanic loses a large part of his time in getting the axle positioned where he can dismantle it at all and after that, it is necessary to constantly change the position, and to lift and drag the axle on the floor. All of this is time-wasting, back-breaking, and conducive to poor workmanship. The conditions, also, are such that dirt, small pieces of iron, and other foreign particles, get in while the housings are open, and remain in the assembly when the axle is rebuilt, to play havoc with the gears and other wearing parts. The front and rear axles differ in shape, and there is diversity also in the type of rear axle for different makes of machines.

The object of this invention is to provide a stand that can be adjusted to fit any and all sizes and types of axles, both front, and rear, and support them at a convenient height to work on; so the axle may be torn down, whether semi-floating, three-quarters, or full floating construction without unclamping it from the stand; and with a hinged support on one end of the axle to drop down for the removal of a housing-member on that end, when necessary, without unclamping the other end.

The object, also, is to provide a device which will catch the old oil and grease so it will not be dripped and smeared around the shop and on the clothes of the mechanic, and to provide a place where the operator may keep the tools he is working with conveniently at hand.

I accomplish the above, and other objects which will hereinafter appear, by the mechanism illustrated in the accompanying drawing, in which like characters of reference indicate like parts.

Figure 1 is a perspective view of my invention with an axle clamped to it.

Fig. 2 is a side elevation of the invention and

Figs. 3, 4, and 5, are details in perspective of the axle supports.

The two vertical members 6, 6, of the stand are preferably formed, as shown, from channel steel, with the flanges turned outwardly, or away from each other. Angle bars 7, 7, are riveted to the inside lower ends of the members 6, 6, to increase the footing, and, also to provide means, through holes in the horizontal flanges, for bolting the stand to the floor, when desired.

At a distance from the floor to bring it within convenient reach of the operator is a transverse channel-member 8, supported from members 6, 6, by angle-bars 9, 9. This channel member 8 forms a tool-box of which the flanges are the sides. It also helps to hold the vertical members in upright position, and the structure is further maintained by the diagonal braces 10.

Parallel to channel-member 8, but near the upper ends of the vertical members 6, to which they are fastened, are angle-bars 11, 11 which brace and strengthen the stand, but also form supports for a removable pan 12, held thus in convenient position to catch the old oil, and grease contained in the differential and axle-housing, and which escapes when the housings are opened to reach the inside mechanism.

Pivotably secured between the two vertical flanges of one of the members 6, is a bar 13, having a pair of standards 14, 14, each terminating with vise-jaws 15, having sharply corrugated, V-shaped, upper portions adapted to grip an axle or housing laid thereon. As the angular relation between the axle and housing varies in their different types, I make the vise-jaws conform by raising or lowering the outer end of bar 13, about its pivot, and the right adjustment is held by a brace 16, pivoted at one end to the outer end of bar 13, and secured to one of the vertical flanges of adjacent member 6,

by a bolt 17. A slot 18, in the flange, through which the bolt passes provides means for raising or lowering the bolt 17, thereby to raise or lower the end of bar 13.

A chain 19, is wrapped around the axle, or housed axle, as the case may be, and fastens the latter securely and rigidly to bar 13. It cannot rotate or slip because of the corrugated teeth of the vise-jaws. The chain is fastened to the screw-threaded eye-bolt 30, and to the lugs 31. By tightening wheel 32 against bottom of bar 13 the chain is tightened.

The opposite stand member 6, has a support 20, terminating at its upper end with a V-shaped toothed jaw 15, retained by pivot 22 between the vertical flanges of said member, at a sufficient distance below the upper end of the latter for the insertion of a removable pin 23 through the flange into the support.

When it is desired to swing the support 20 down out of the way when separating a semi-floating axle it may be unlocked by removing pin 23, and dropped down so as to allow one housing to be readily removed.

Sometimes it is desirable to operate on the axle with the propeller-shaft attached, and to support the latter I provide a three-sided frame 24, which is pivoted to the stand member 6, 6, in order to be adjustable in height, and also that it may be folded down against the side of the stand when not required. Diagonal braces 25, 25 pivoted to the frame at their outer ends, are connected by bolts 26, 26, to the members 6, 6. Vertical slots in the latter afford adjustment for the bolts.

Various changes can be made in my invention in unimportant details such as means for holding the adjustments of the vise-bar, propeller-supporting frame, and chain for fastening the axle to the vise-jaws, and the like, and I do not desire to be limited any more than is required by the appended claims.

What I claim as new and wish to secure by Letters Patent is:

1. In an axle-stand, a body-portion, a member having a pair of jaws at different distances from said body-portion, means for adjusting said member to vary the relative horizontal positions of the jaws to fit the taper of the axle-housing, and an additional axle-support attached to said body-portion.

2. In an axle-stand, a body-portion, a member having a pair of jaws at different distances from said body-portion said member pivoted at one end to the side of the body-portion, means for raising or lowering the outer end of said member to vary the relative horizontal position of the jaws, and an additional axle-support attached to the opposite side of said body-portion from said first member, said last support being removable for dismembering an axle-housing.

3. In an axle-stand, a body-portion, a bar pivoted at one end to said body-portion having a pair of superimposed vise-jaws at different distances from the pivoted end of the bar, means for varying the height of the outer end of the bar, a second vise-member pivoted to the opposite side of the body-portion from the bar to support the axle in a raised position and to avoid interference with the dismembering of the axle when lowered, and means for holding the second jaw member in its raised position.

4. In an axle-stand, a body-portion, a bar pivoted at one end to said body-portion having a pair of superimposed vise-jaws at different distances from the pivoted end of the bar, means for varying the height of the outer end of the bar, a second vise-member pivoted to the opposite side of the body-portion from the bar to support the axle in a raised position and to avoid interference with the dismembering of the axle when lowered, means for holding the second jaw member in its raised position, and a propeller-shaft support laterally of the plane of the vise-members.

5. In an axle-stand, a body-portion, a bar pivoted at one end to said body-portion having a pair of superimposed vise-jaws at different distances from the pivoted end of the bar, means for varying the height of the outer end of the bar, a second vise-member pivoted to the opposite side of the body-portion from the bar to support the axle in a raised position, and to avoid interference with the dismembering of the axle when lowered, means for holding the second jaw member in its raised position, a propeller-shaft support laterally of the plane of the vise-members, and means for varying the height of said last support.

6. In an axle-stand, a body-portion, comprising a pair of vertical channel-bars having a tool-box between the bars, and an oil pan also between the bars, above the pan, a bar pivoted at one end to the body-portion between the flanges of one of the channel bars, one of said flanges having a vertical slot, a diagonal brace pivoted at one end to the outer end of said bar and secured at its other end to the slotted flange by a bolt through said slot, said bar having a pair of vise-jaws at different distances on the bar from the body portion, a second vise-jaw pivoted to the opposite one of said vertical channel-bars, means for locking it in a vertical position, a third support laterally of the other two pivoted to the body-portion, and adjustable braces to regulate the height of the third support.

7. In an axle-stand, a body-portion, an axle support on one side of the body-portion adjustable to fit the taper of different axle housings, means in conjunction therewith capable of holding the axle immovably, and an additional axle-support attached to the opposite side of the body-portion adapted to be changed in position to avoid interference in dismantling the axle-housing.

In witness whereof I have hereunto set my hand at Columbus, Indiana, this 18th day of November, 1919.

JOSEPH H. STALEY.