

Feb. 14, 1950

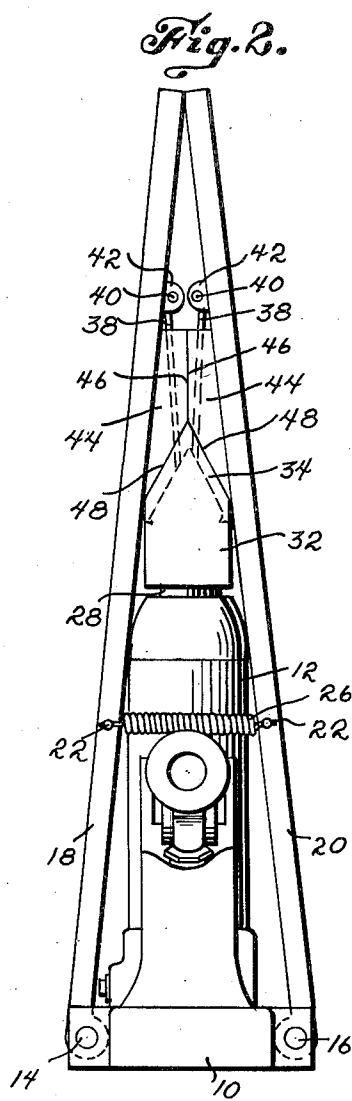
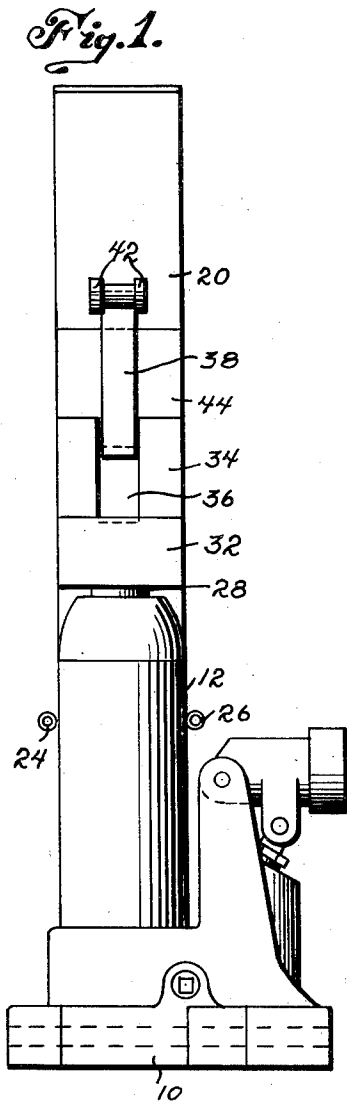
R. G. MILLER

2,497,836

BODY JACK

Filed June 12, 1946

2 Sheets-Sheet 1



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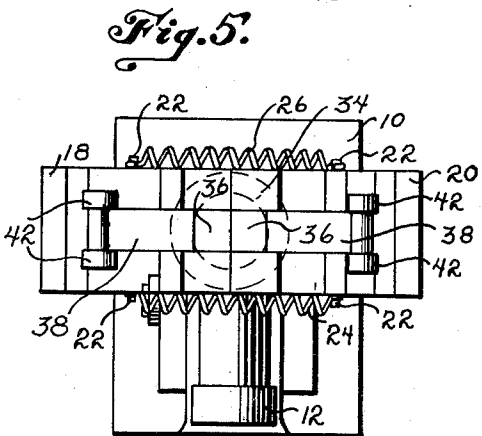
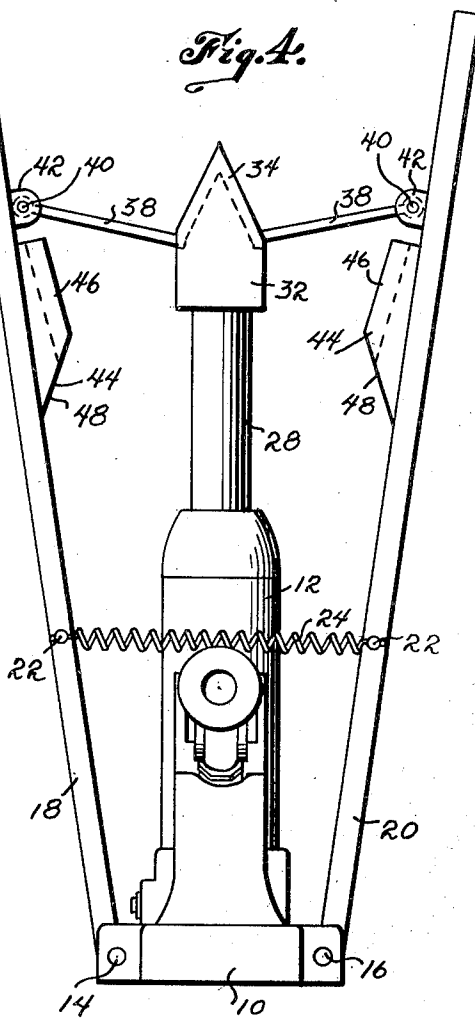
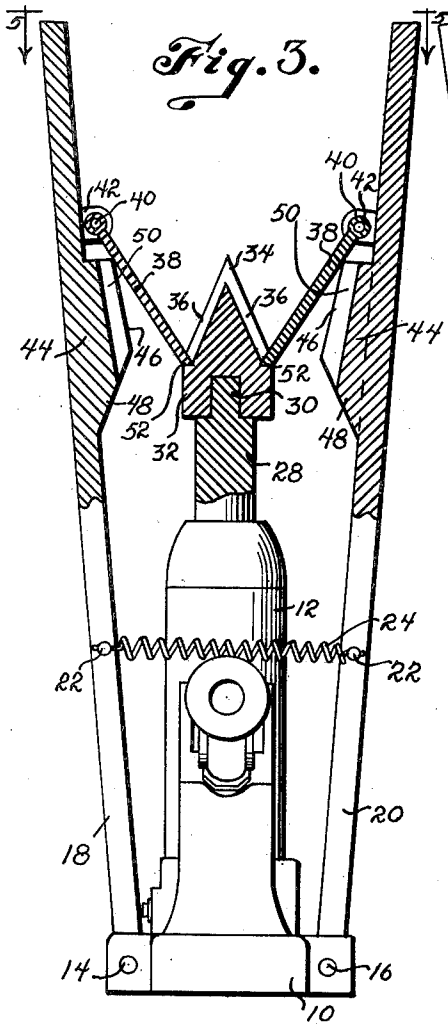
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UNITED STATES PATENT OFFICE

2,497,836

BODY JACK

Roy G. Miller, Tacoma, Wash.

Application June 12, 1946, Serial No. 676,147

3 Claims. (Cl. 153—32)

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This invention relates to a body jack which is especially adapted for use in obtaining access to narrow places in body and fender repair work that are inaccessible to ordinary jacks.

An object of this invention is to provide a small hydraulic jack which operates vertically but jacks horizontally, the ratio of the two being such that tremendous horizontal pressure is obtained. Subsequent to the filing of this application a copending application with the Serial No. 773,401 was filed September 11, 1947, including a base for the spreading elements of this device with a hydraulic jack incorporated in the base.

With the above and other objects in view, the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawings in which:

Figure 1 is a side elevational view of the jack of the invention with the pressure arm on the near side of the jack removed;

Figure 2 is a rear elevational view thereof;

Figure 3 is a sectional view of Figure 2 in partially extended position;

Figure 4 is the same as Figure 2 in full extended position and

Figure 5 is a top plan view of Figure 3.

Referring more in detail to the drawings, the reference numeral 10 designates a rectangular shaped base plate which may be formed integral with or separate from the small hydraulic jack 12 which is positioned at the medial portion of said plate.

Pivoted to the sides of the plate 10 at the points 14 and 16, are the parallel upstanding diametrically opposed rectangular bars or pressure arms 18 and 20 respectively, which are provided with outwardly extending pins 22 on the side edges thereof to mount the coil springs 24 and 26 respectively. These springs tend to force the bars inwardly toward engagement with each other at their upper ends and are mounted closer to the pivoted ends of the bars than the free ends thereof.

The stem or plunger 28 of the jack 12 is provided with a reduced end 30 to be loosely received in the wedge-shaped pilot cap or plunger head 32 having a tapered end 34 slotted at 36 to receive the links or arms 38. The latter are pivotally mounted by pins 40 intermediate the apertured ears 42 formed on the inner surface of the bars 18 and 20 adjacent the upper free ends thereof.

Formed on the inner faces of the bars 18, 20 adjacent to, but beneath the ears 42 are the

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bosses 44 having faces 46 that engage in face to face relation with each other as shown in Figure 2, when the arms are folded or closed. These arms are also provided with sloping lower faces 48 that engage the tapered end 34 of the plunger head 32 wherein the arms are forced outwardly or opened as the plunger head moves upwardly, and longitudinal slots 50 are provided in the surfaces of the bosses to receive the links 38 when the device is in the position shown in Figure 2.

During operation of the jack, the ends of the links engage the pressure shoulders or stops 52 in the pilot cap 32, and as the jack is operated vertically, the links tend to force the bars outwardly in a horizontal plan, the springs 24 not only serving to force the bars inwardly, but also retaining the links 38 in the shoulders during the operation of the jack. In this manner there is provided a tool capable of exerting great pressure over a substantial lateral displacement of its pressure arms.

It is to be understood that changes in the minor details of construction may be resorted to, provided they fall within the spirit of the invention and the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a vehicle body jack, the combination which comprises a hydraulic jack including a base with a vertically disposed cylinder and a plunger in the said cylinder, a V-shaped head on the plunger with vertically disposed grooves in opposite sides thereof, the lower ends of said grooves having obstructions therein, vertically disposed pressure arms positioned on opposite sides of the cylinder and extended from the base to a point above the said plunger head, means pivotally mounting the said arms on the said base, links pivotally connected to the said arms at points above the obstructions in the said grooves of the V-shaped head and positioned with the free ends thereof resting in the said grooves of the plunger head, means resiliently urging the said arms to nested positions against the plunger head, and means on the said arms positioned to coact with the said V-shaped head to start the arms outwardly as the head moves upwardly.

2. In a vehicle body jack, the combination which comprises a hydraulic jack including a base with a vertically disposed cylinder and a plunger in the said cylinder, a V-shaped head on the plunger with vertically disposed grooves in opposite sides thereof, the lower ends of said

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grooves having obstructions therein, vertically disposed arms positioned on opposite sides of the cylinder and extended from the base to a point above the said plunger head, means pivotally mounting the said arms on the said base, links pivotally connected to the said arms at points above the obstructions in the said grooves of the V-shaped head and positioned with the free ends thereof resting in the grooves of the plunger head, and a spring with the ends connected to the arms resiliently urging the said arms to folded positions against the plunger head, said arms having abutments on the inner faces thereof with sloping surfaces on the lower ends of the abutments corresponding with the coating surfaces of the plunger head whereby the arms are opened outwardly as the plunger head moves upwardly, said abutments also having grooves in the outer faces thereof positioned to receive the said links with the parts folded whereby the said arms and plunger head fold with the parts thereof in nested relation.

3. A jack for exerting lateral pressure comprising a body, a plunger carried within the body for reciprocating movement therein, a wedge-shaped head on the plunger, pressure arms pivotally connected to opposite sides of the body

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and extending longitudinally thereof beyond the wedge-shaped head, links pivotally connected, one to each of the pressure arms at a position beyond the head, the free ends of the links being in sliding engagement with the head, bosses on the pressure arms to coact with the wedge-shaped head in initiating lateral displacement of the pressure arms as the jack plunger is extended during operation, stop means on the head for arresting the sliding movement of the links as the head is extended whereby continued extension of the plunger acts through the links to cause further lateral displacement of the pressure arms, and resilient means to retract the pressure arms as the plunger is retracted.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,267,151	Wellman	May 21, 1918
1,638,859	Knowles	Aug. 16, 1927
2,283,089	Pfauser	May 12, 1942
2,341,278	Long	Feb. 8 1944