

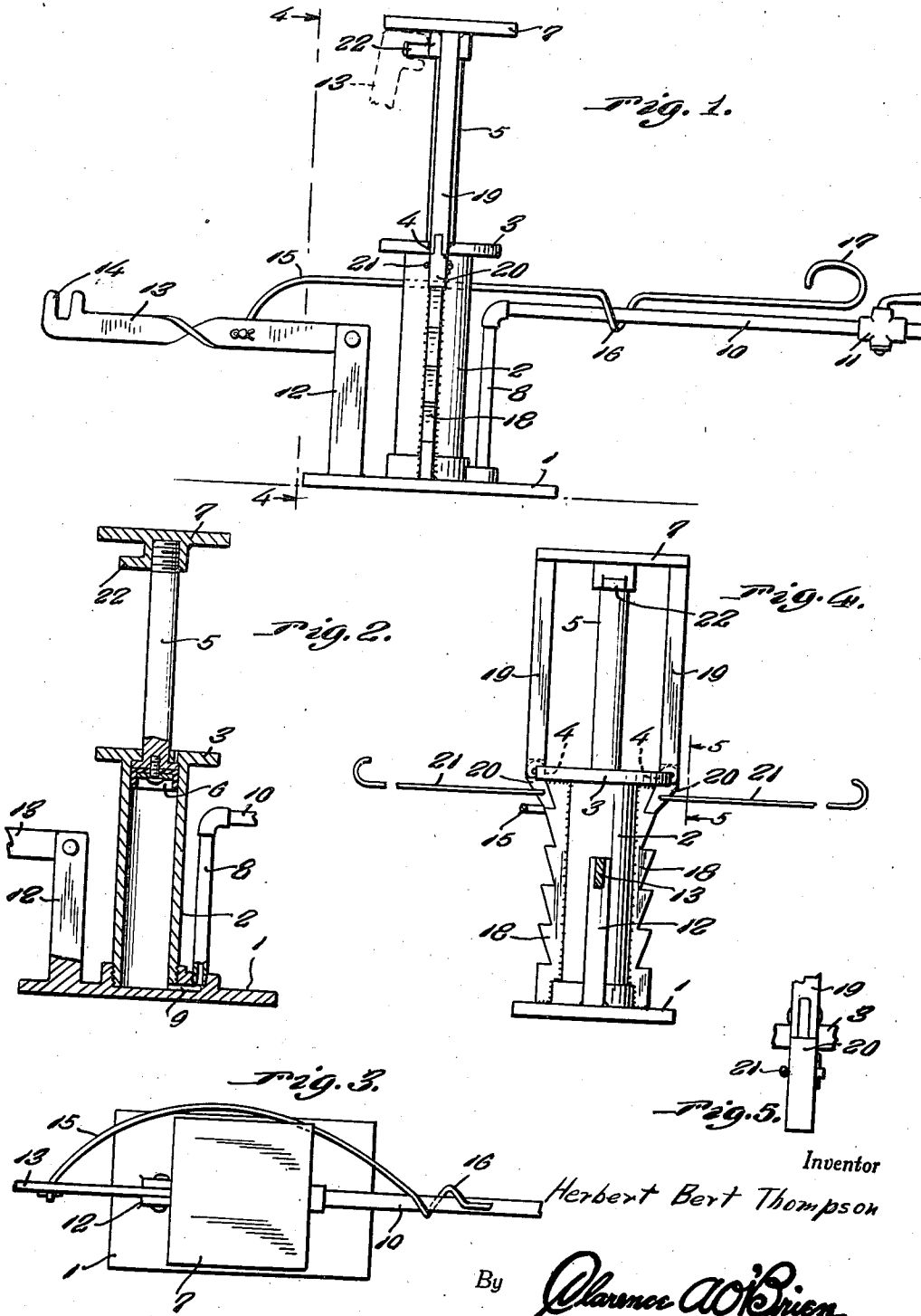
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PNEUMATIC JACK

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PNEUMATIC JACK

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2 Claims. (Cl. 121-40)

The present invention relates to new and useful improvements in pneumatic jacks particularly for automobiles and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character which is adapted to be expeditiously connected for actuation to one of the cylinders of the engine of the vehicle when it is desired to raise said vehicle.

Another very important object of the invention is to provide a jack of the aforementioned character comprising unique means for positively securing the device in raised or elevated position, thereby greatly promoting safety.

Other objects of the invention are to provide a jack of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, light in weight and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in side elevation of a jack constructed in accordance with the present invention, showing the device raised.

Figure 2 is a view principally in vertical section through the device with parts omitted.

Figure 3 is a top plan view with parts broken away.

Figure 4 is a cross sectional view, taken substantially on the line 4-4 of Figure 1.

Figure 5 is a detail view in cross section, taken substantially on the line 5-5 of Figure 4.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a foot or base 1 of any suitable metal. Mounted on the base 1 is a cylinder 2. The cylinder 2 includes a flanged upper end or head 3 having recesses or notches 4 therein.

Extending slidably through the upper end 3 of the cylinder 2 is a rod 5. On the lower end of the rod 5 is a piston 6 which is adapted for reciprocation in the cylinder 2. On the upper end of the rod 5 is a seat 7 which is engageable beneath the vehicle or other object to be raised. Beneath the seat 7 is a lip or flange 22 the purpose of which will be presently set forth.

An air pipe 8 is connected to the foot or base 1 and, as seen in Figure 2 of the drawing, com-

municates with the cylinder 2 at the lower end thereof, as at 9, for raising the piston 6. The air line or pipe 8 comprises a horizontally extending portion 10 having connected thereto a control valve 11. From the control valve 11 the air line is in the form of a hose which is adapted to be connected in any suitable manner to one of the cylinders of the vehicle engine for receiving gases therefrom.

Also rising from the foot or base 1 is a bracket 12 having pivotally mounted thereon for swinging movement in a vertical plane a safety catch 13. The safety catch 13 is in the form of a metallic bar having on its free end a slotted head 14 which is engageable with the lip 22 in the manner suggested in dotted lines in Figure 1 of the drawing for positively securing the jack in elevated or raised position.

The rod 15 has one end pivotally connected to the catch 13 for raising and lowering said catch. The rod 15 is bent around the cylinder 2 and has formed at an intermediate point a loop 16 which is slidable longitudinally on the horizontal portion 10 of the pipe line 8. At its other end, the rod 15 terminates in a suitable operating handle 17 which is located adjacent the control valve 11.

Mounted on diametrically opposite sides of the cylinder 2 are vertical ratchet bars 18. Fixed beneath the seat 7 and depending therefrom are legs 19 which are slidably engaged in the notches or recesses 4 in the flanged cylinder head 3. Mounted on the lower end portions of the legs 19 are pawls 20 which are engageable with the teeth of the ratchet bars 18 for positively supporting the seat 7 in substantially any desired adjusted position. Rods 21 are connected to the pawls 20 for disengaging said pawls from the ratchet bars 18 when it is desired to lower the jack.

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing. Briefly, the jack is positioned beneath the vehicle or other object and the line 8 is connected to one of the cylinders of the engine of said vehicle. With the engine running, the valve 11 is opened with the result that gases from the engine are forced into the cylinder 2 and the piston 6, the rod 5 and the seat 7 are elevated. When the desired elevation has been reached the valve 11 is closed and the jack is thus retained in the desired position. However, the pawls 20 ride over the teeth of the ratchet bars 18 and engage therewith for positively securing the jack in raised position. When the

jack is in fully raised position the latch 13 may be swung upwardly through the medium of the resilient rod 15 for engaging the slotted head 14 with the lip 22 thereby providing an added safety device. When it is desired to lower the jack the catch 13 is disengaged from the lip 22. Also, the pawls 20 are swung outwardly in a manner to clear the ratchet bars 18 through the medium of the rods 21. The valve 11 is then opened for permitting the piston 6 to be forced downwardly in the cylinder 2 in an obvious manner. The resilient rod 15 is under tension at all times due to the fact that it is bent around the cylinder 2 and slidably connected to the horizontal portion 10 of the pipe line 8. In this manner the catch 13 will be frictionally secured in any desired position and will be retained against idle swinging movement when not in use. This construction and arrangement also keeps the handle 17 adjacent the valve 11 at all times for convenient operation.

It is believed that the many advantages of a jack constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. A jack comprising a base, a vertical cylinder mounted on said base, a rod extending slidably into the cylinder through the top thereof, a piston on the lower end of said rod operable in the cylinder, a seat on the upper end of the rod, an air line communicating with the cylinder for introducing air under pressure thereinto for elevating the piston, a control valve for said air line, a safety catch pivotally mounted on the base and engageable with the seat for positively securing said seat in elevated position, an operating rod having one end pivotally connected to said safety catch, said operating rod including a loop at an intermediate point slidable on the air line, and a handle on the other end of the operating rod adjacent the valve.

2. A pneumatic jack comprising a base, a cylinder, for the reception of air under pressure, rising from said base, a rod extending slidably into the upper end of the cylinder, a piston on the lower end of said rod operable in the cylinder, a seat on the upper end of the rod, a lip below said seat, a safety catch pivotally mounted for swinging movement in a vertical plane on the base and engageable with said lip for securing the seat in elevated position, and means for actuating said safety catch.

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