

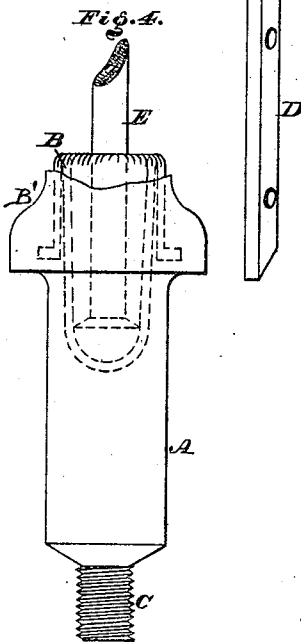
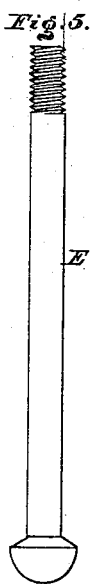
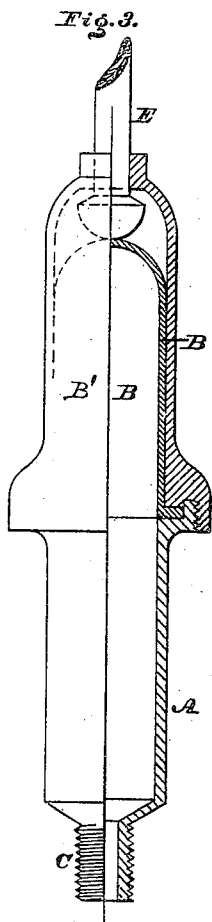
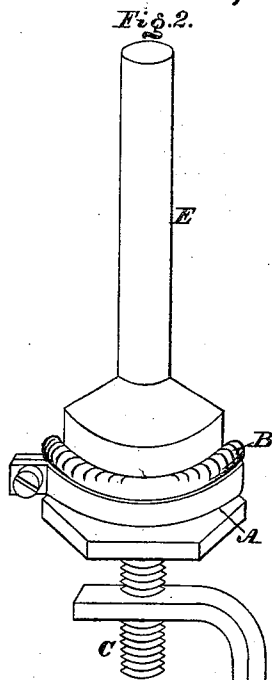
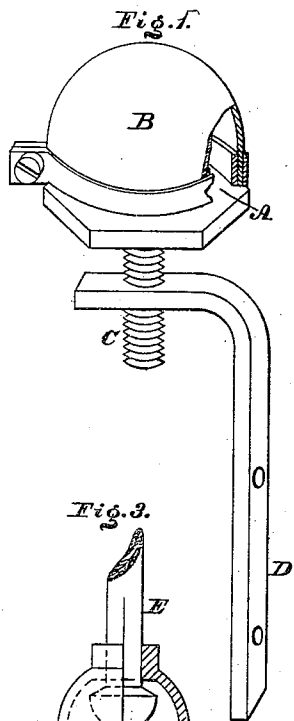
(No Model.)

R. P. GARSED.

Pressure or Vacuum Cylinder and Plunger.

No. 242,297.

Patented May 31, 1881.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT P. GARSED, OF NORRISTOWN, PENNSYLVANIA.

PRESSURE OR VACUUM CYLINDER AND PLUNGER.

SPECIFICATION forming part of Letters Patent No. 242,297, dated May 31, 1881.

Application filed October 11, 1880. (No model.)

To all whom it may concern:

Be it known that I, ROBERT P. GARSED, a citizen of the United States, residing at Norristown, in the county of Montgomery, State of Pennsylvania, have invented a new and useful Improvement in Pressure or Vacuum Cylinders and Plungers, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view of the cylinder embodying my invention. Fig. 2 is a perspective view of the cylinder and plunger. Fig. 3 is a side elevation, partly sectional, of a modification. Fig. 4 is a perspective view of a portion thereof. Fig. 5 is a perspective view of the plunger.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a flexible or elastic bulb or thimble and a plunger, constructed, combined, and operating as will be hereinafter set forth.

Referring to the drawings, A represents a hollow base, cylinder, or barrel, to whose upper end is tightly clamped or otherwise secured an elastic or flexible hollow bulb or thimble, B, and having a central opening, with which communicates a tube, C, adapted to admit air or water to the bulb or thimble or serve as a vacuum-pipe, and fitted to a bracket, D, by which the device may be supported and sustained on a wall or other suitable place.

E represents a plunger having a head which is rested centrally against the outer surface of the bulb, tube, or thimble B when the latter is extended or expanded, said surface becoming the inner surface when the bulb or thimble is depressed.

It will be noticed that the stem of the plunger is passed through a guide-opening in the top portion of a jacket, B', the latter serving to limit the extent of expansion of the thimble B and preventing bursting thereof.

It will also be noticed that the thimble is firmly clamped at its edge to the barrel A, and its body is imperforate, whereby the thimble is prevented from leakage both at the edge and throughout the body, and the strength of the body is preserved, the head of the plunger

resting disconnected on the thimble, as has been stated.

The outer or upper end of the plunger is connected to or presses against mechanism to which it is desired to impart motion—such as the levers of a bell, railroad-switch, &c.—and the tube C is connected to pumping mechanism for water, air, or other fluid or liquid, or an exhaust apparatus, as desired. When the plunger is depressed the tube or thimble is also depressed, the thimble, when used, owing to its long nature, folding within itself, as shown in Fig. 4.

When it is desired to operate the plunger, air, water, &c., under pressure, is directed or admitted into the barrel A. This raises, expands, or straightens out the bulb or thimble and moves the plunger, which is in contact with it. When the bulb or thimble is relieved of the pressure of the air or water, or the fluid or liquid is withdrawn therefrom, the bulb or thimble is no longer controlled by said fluid or liquid, and the weight of the plunger or the action of springs connected to it causes the descent of the plunger and the compression, contraction, or folding of the bulb or thimble, whereby, on the admission of the next volume of air, water, &c., the bulb or thimble is again raised, expanded, or straightened out and forward motion imparted to the plunger, thus again operating the mechanism to which the plunger is attached or with which it is in contact.

When it is desired to operate the bulb or thimble by vacuum the head of the plunger is secured to the bulb or thimble, so that when a vacuum is created within the latter by suitable pumping or exhaust apparatus, the consequent contraction or folding of the bulb or thimble causes the descent or motion of the plunger with said bulb or thimble, thus operating the lever of a bell, switch, or other portion of mechanism or device to which motion is to be imparted.

As the bulb, tube, or thimble is firmly clamped to the barrel and closed throughout, leakage between the parts is prevented, and the plunger, which is exterior of the barrel and bulb or thimble, requires no packing.

The barrel may have a concave bottom and the head of the plunger be of convex, concave, or other form, to accord with the shape of the contiguous portion of the bulb or thimble which it assumes when extended or contracted.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The barrel A, in combination with the im-
10 perforate thimble B, and the plunger resting disconnected on said thimble, substantially as and for the purpose set forth.

2. The barrel A, in combination with the thimble B and the encircling jacket B', substantially as and for the purpose set forth. 15

3. The thimble B, in combination with the barrel A, having a threaded pipe, C, whereby communication is had with the barrel and the device is adjustably supported, substantially as described.

R. P. GARSED.

Witnesses:

SALLIE GARSED,
H. E. GARSED.