J. Ryan,

Hydraulic Jack.

No. 52,324. Patented Jan. 30, 1866.

Fig: 1.

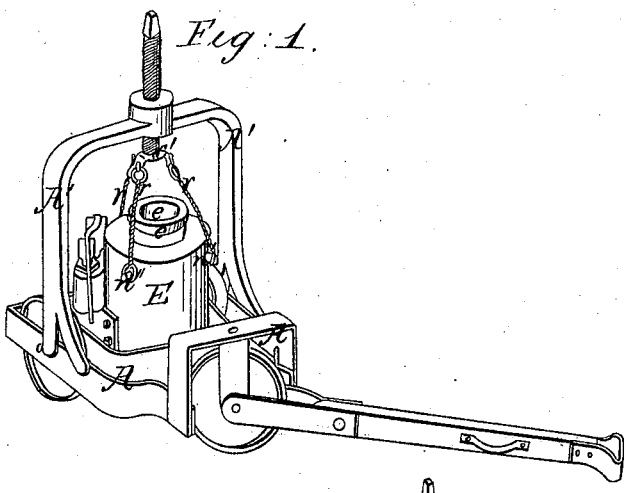


Fig: 2.

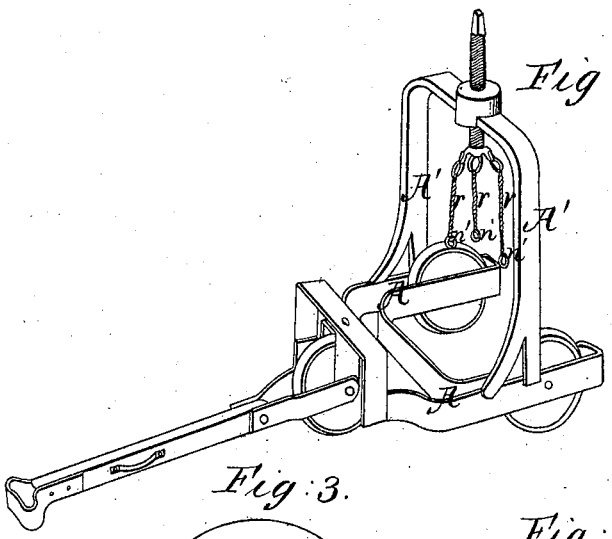


Fig: 3.

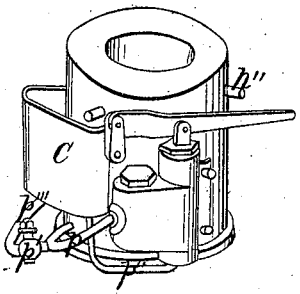
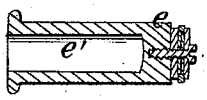


Fig: 4.



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UNITED STATES PATENT OFFICE.

JOSEPH RYAN, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN HYDRAULIC JACKS.

Specification forming part of Letters Patent No. **52,324**, dated January 30, 1866.

To all whom it may concern:

Be it known that I, JOSEPH RYAN, of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in Hydraulic Jacks; and I hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings and the letters of reference marked thereon, and forming part of these specifications, in which—

Figure 1 is a perspective view of the jack with its transporting-carriage. Fig. 2 is a perspective view of the transporting-carriage. Fig. 3 is a perspective view of the jack with its plunger removed. Fig. 4 is a longitudinal section of the plunger.

The nature of my invention consists in a novel construction and compact combination of all the needful apparatus necessary in the use and operation of a hydraulic jack.

The cylinder E of my improved jack, made in the usual form and of proper length, is provided with a suitable force-pump, L, Fig. 3, securely attached to its outer circumference. Upon the opposite portion of the cylinder, and fitting closely thereto, is secured a curved vessel or reservoir, C, Fig. 3, to contain the water to be used in the apparatus, and whose sides are made concentric with the exterior of the cylinder. This reservoir C is connected directly with the induction-aperture of the pump L by means of a pipe, p''. A second pipe, p, leads from the eduction-aperture of the pump back to the reservoir, and is fitted with a branch pipe leading to the cylinder, between which and the reservoir is placed a suitable stop-cock, p', so that by closing this cock direct communication between the pump and the cylinder is established. By leaving the cock p' open when the cylinder E is full, the water therein will immediately be forced back by the weight of the plunger and its load into the reservoir, allowing the plunger to descend.

The plunger or piston *e*, working in the cylinder E of my improved jack, is made of metal, in a hollow or cylindrical form, as shown in Figs. 1 and 4 of the drawings. This form affords sufficient strength, with great economy in weight, and at the same time admits of the insertion of an extra bar to increase the length of the plunger, as may be required.

A close joint is formed between the lower end of the plunger and the interior of the cylinder by means of a suitable packing-ring and packing attached thereto.

My improved jack, with its pump and reservoir, may be readily transported from place to place by means of a truck or carriage, A A, Fig. 2, consisting of a stout frame constructed with its rear end open, so that it may run back and inclose the jack. This truck is provided with a suitable upright structure, A′ A′, thereon, from which the machine may be suspended by means of chains *n n n n*, operated by a screw, C, in the center of the structure, as illustrated in Fig. 2 of the drawings.

Having thus fully described my improvement in hydraulic jacks, I claim therein as new and desire to secure by Letters Patent—

1. The combination, substantially as herein described, of a reservoir, C, and pump L with each other and with the cylinder E of a hydraulic jack, when the reservoir is secured to the cylinder, substantially in the manner herein set forth.

2. In combination therewith, the cylindrical plunger or piston *e*, cylinder E, arranged and operating substantially in the manner herein set forth.

JOSEPH RYAN.

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