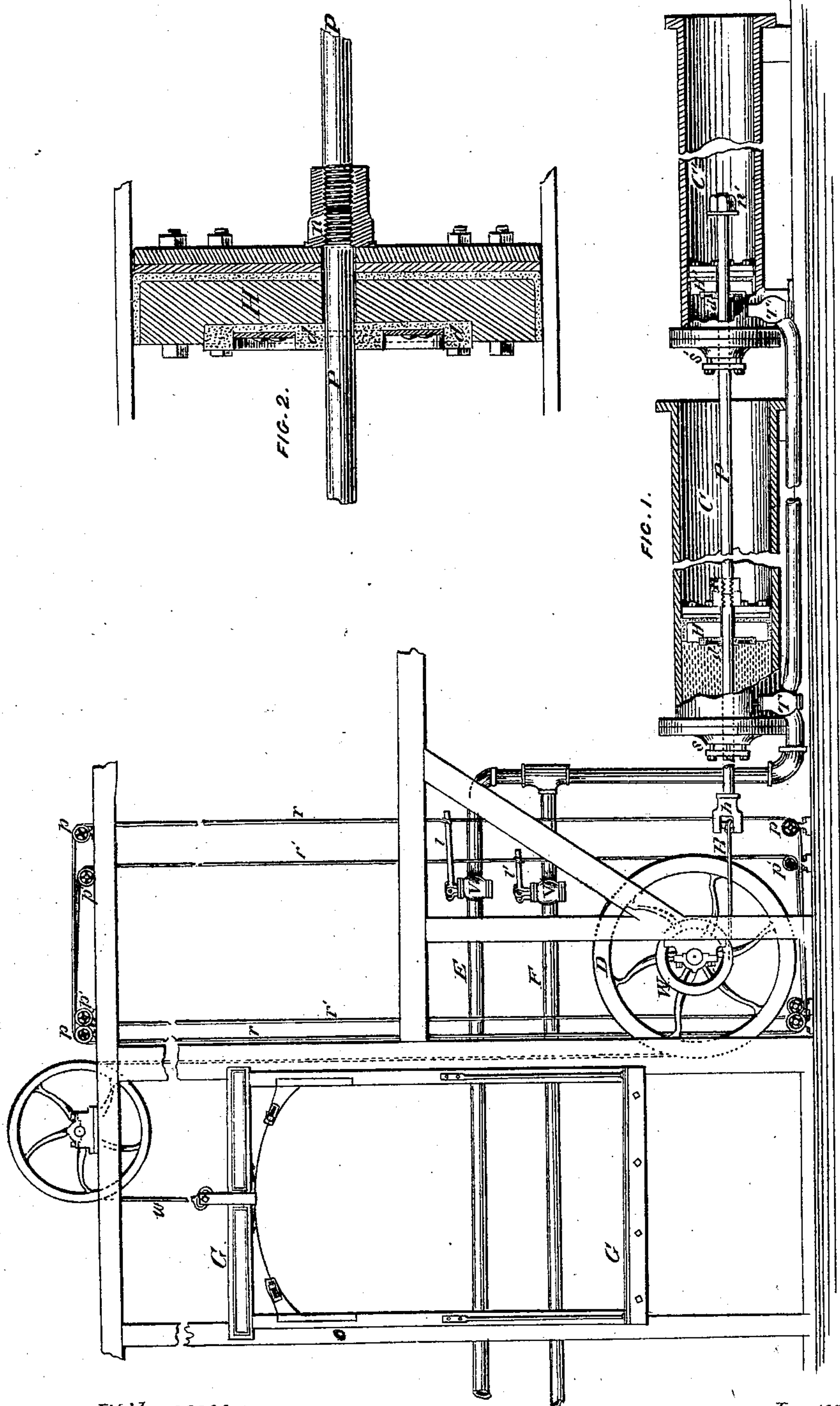


M. L. BASSETT.
Hydraulic-Hoists.

No. 152,209.

Patented June 23, 1874.



Witnesses:
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UNITED STATES PATENT OFFICE.

MARTIN L. BASSETT, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN HYDRAULIC HOISTS.

Specification forming part of Letters Patent No. **152,209**, dated June 23, 1874; application filed April 14, 1874.

To all whom it may concern:

Be it known that I, MARTIN L. BASSETT, of the city and county of San Francisco, State of California, have invented an Improved Hydraulic Hoist, of which the following is a specification:

My invention relates to an improvement in the construction of a hydraulic hoisting apparatus, consisting essentially of two independent cylinders provided with a piston-rod common to both, on which loose piston-heads are arranged in such manner that when one cylinder only is in use very little friction will be experienced in the other by reason of this piston-rod passing loosely through that piston-head which is not at work without moving the same; and when additional power is required for any extraordinary load the force of the water in both cylinders can be instantaneously brought into play, so that one cylinder can be auxiliary to the other, or can act independently, as may be desired, and in effecting such economy in the use of water this combination admits also of the release of either of the piston-heads and part of the piston-rod, in case one of the cylinders should become deranged from any cause, so that the remaining cylinder may be readily set to work as required.

Figure 1 is a longitudinal elevation of a hydraulic hoisting apparatus with the attachments embodying my invention, the cylinders being partly broken away, so as to show the loose piston-heads with pads and piston-rod. Fig. 2 is an enlarged sectional view of a loose piston-head, with leather pad, piston-rod, and connecting-nut, embodying my invention.

With reference to the drawing, C C' are the cylinders, with stuffing-boxes s s', respectively; P, the piston-rod common to both cylinders, and H H' the loose piston-heads. B is an ordinary wire band attached to the piston-rod cross-head h, for actuating the wheel W and drum D', over which latter the wire w w for suspending and operating the cage G is wound. E is the supply-pipe, and F the exhaust or overflow, which are controlled by hand for the ascent or descent of the cage G by means of the ropes r r' passing over the pulleys p p', and attached to the levers l l' of the supply and exhaust valves V V', respectively. The valves T T' admit of the flow of water to and from the cylinders C C', respectively, so that

these cylinders can be used independently or combined. The piston-rod P passes loosely through the piston-heads H H', so that when water is admitted it forces a joint washer and leather pad, d, against the back of the piston-head close to the rod, so as to prevent leakage, and the piston-head, on being forced forward, moves also the piston-rod by means of the nut n or n', attached in front thereto; and for the descent of the cage, on the exhaust being applied, this same nut attachment brings the piston-head back to its original position, but in the cylinder wherein no water has been admitted the piston-rod moves forward and returns, leaving its piston-head at rest, thus producing very little friction. If, then, the load to be raised can be raised by one cylinder, no waste of water will occur by reason of not employing any more power than is absolutely necessary; but when occasionally it is required to raise a heavier load than usual, the admission of water into the other cylinder, (say C',) as an auxiliary, can be regulated to be amply sufficient to meet all requirements, and thus great economy is effected, and this economy is secured in the combination of cylinders as described, so that also, if by any cause one of these cylinders should cease to be in good working order, a disconnection can readily be made, and the other cylinder brought into play in order to perform all the ordinary work required. For, supposing the cylinder C became deranged from any cause, the piston-rod R, being in two parts, can readily be unscrewed from the connecting-nut n, and the cylinder C' will then act freely on its work. If the cylinder C should get out of order, the piston-rod, as before, is unscrewed, the piston-head H withdrawn, the piston-rod again connected, and the cylinder C' will be able to work freely, with the stuffing-boxes s s' acting as bearings for the length of the rod.

I claim as my invention—

The combination, in a hydraulic hoisting apparatus, as described, of the independent cylinders C C', with piston-rod P, common to both, loose piston-heads H H', and leather pads d d', substantially as and for the purposes specified.

Witnesses: MARTIN L. BASSETT.

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