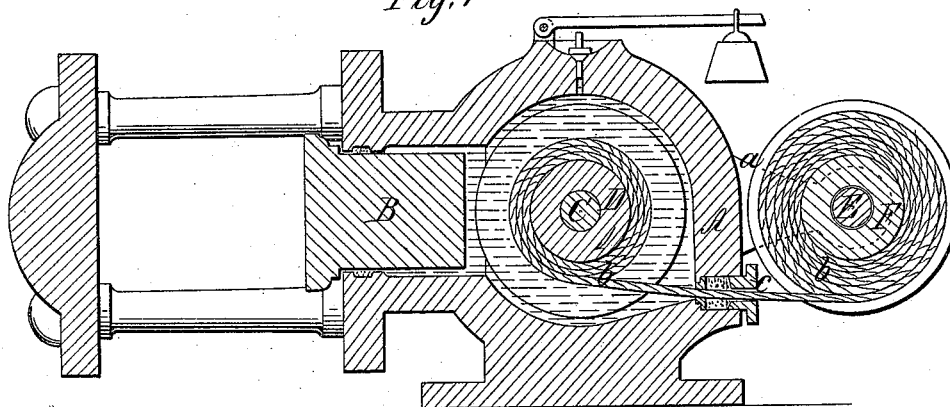
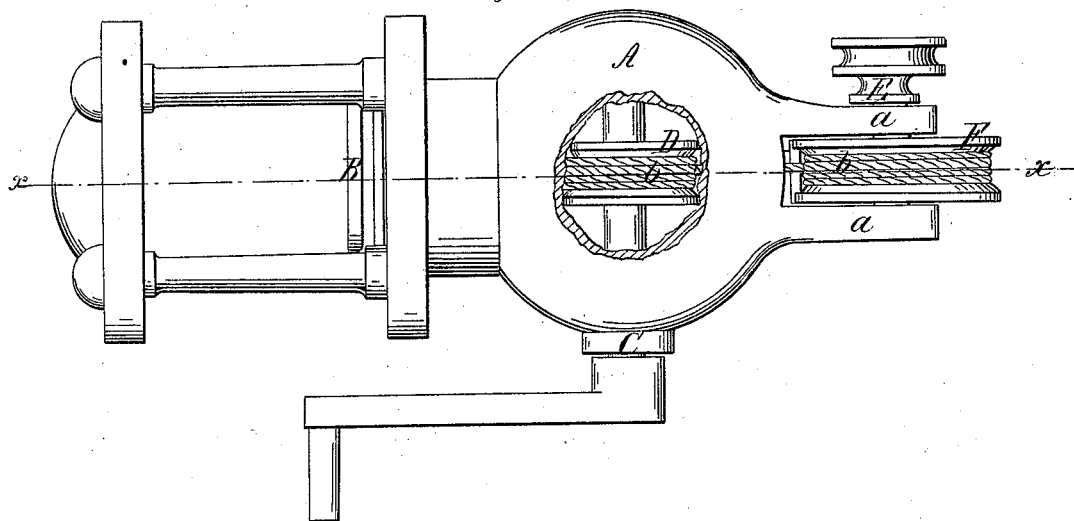


*Desgoffe & Ollivier,*  
*Hydraulic Press,*  
*No 46,315, Patented Feb. 7, 1865.*

*Fig. 1*



*Fig. 2*



*Witnesses,*  
*Wm. Freun*  
*Theo. Tusck*

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*attorneys*

# UNITED STATES PATENT OFFICE.

AUGUSTE DESGOFFE AND ACHILLE OLLIVIER, OF PARIS, FRANCE.

## HYDRAULIC APPARATUS.

Specification forming part of Letters Patent No. **46,315**, dated February 7, 1865.

*To all whom it may concern :*

Be it known that we, AUGUSTE DESGOFFE and ACHILLE OLLIVIER, of Paris, in the Empire of France, have invented a new and Improved Stereohydraulic Apparatus; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of this invention, the line *xx*, Fig. 2, indicating the plane of section. Fig. 2 is a plan or top view of the same, partly in section.

Similar letters of reference indicate like parts.

This invention consists in gradually introducing in a water tight vessel or box, which is filled with water or other non-compressible liquid, and provided with one or more movable sides or pistons, or made expansible with a cord or rope in such a manner that by said cord or rope the liquid in the box or portion of the same is displaced and a powerful pressure is exerted on the sides of the box, which, when movable or expansible, transmit the power thus exerted on their inner surfaces to bodies placed against their outer surfaces, and a powerful pressure can be exerted with comparatively little power and with an apparatus of a simple and cheap construction.

A represents a vessel or box, made of cast-iron or any other suitable material, strong and durable, and perfectly water-tight. This box is provided with a movable side or piston, B, or, if desired, two or more such pistons may be provided, or the entire box may be made of some expansible material, according to the work to be performed by the apparatus.

C is a shaft, which passes transversely through the box A, and mounted on this shaft is a pulley, D, as clearly shown in the drawings. From the outside of the box A project two brackets, *a*, which form the bearings for a shaft, E, and mounted on this shaft is a pulley, F, similar to the pulley D on the shaft C and in line with the same. Both shafts C and E are provided with suitable handles or cranks, by means of which they can be turned in either direction, and a cord or rope, *b*, is fastened with one end to the pulley, D and

with the other end to the pulley F, so that by turning the shafts in the proper direction the rope can be wound up on either of the pulleys.

In order to prevent the escape of liquid from the box A, the rope passes through a stuffing-box, *c*, and a safety-valve, *d*, of any suitable construction, which shows the pressure existing in the box and prevents accidents.

At the beginning of the operation all the rope is wound on the outer pulley, F, the plunger or piston B is in the position shown in the drawings, and the box A is filled with water or other non-compressible liquid.

By turning the shaft C in the direction of the arrow, marked near it in Fig. 1 of the drawings, the rope winds or unwinds from the pulley F and winds on the pulley D, and the liquid in the box A is displaced. A powerful pressure is thus exerted on the inner surface of the piston B, and, if said piston is to be used for compressing certain articles or materials, the operation can be performed with a comparatively small expenditure of power.

It will be noticed that the principle on which our apparatus operates is precisely the same as that of an ordinary hydraulic press, but instead of having a small piston of a short length to which a reciprocating motion must be imparted in order to produce the desired effect, we use a continuous or very extended piston, which is represented by the rope *b*.

By inclosing the pulley F in a water-tight box, with one or more plungers, the apparatus is rendered double-acting, so that while the plunger or plungers of one box are forced out those of the other box recede, and vice versa.

We claim as new and desire to secure by Letters Patent—

The employment or use of a rope, *b*, or its equivalent, in combination with a box, A, provided with one or more plungers or movable sides, or made of some expansible material, substantially as and for the purposes set forth.

A. DESGOFFE.  
A. OLLIVIER.

Witnesses :

LAVUELLY.  
W. G. LA FRANCE.