

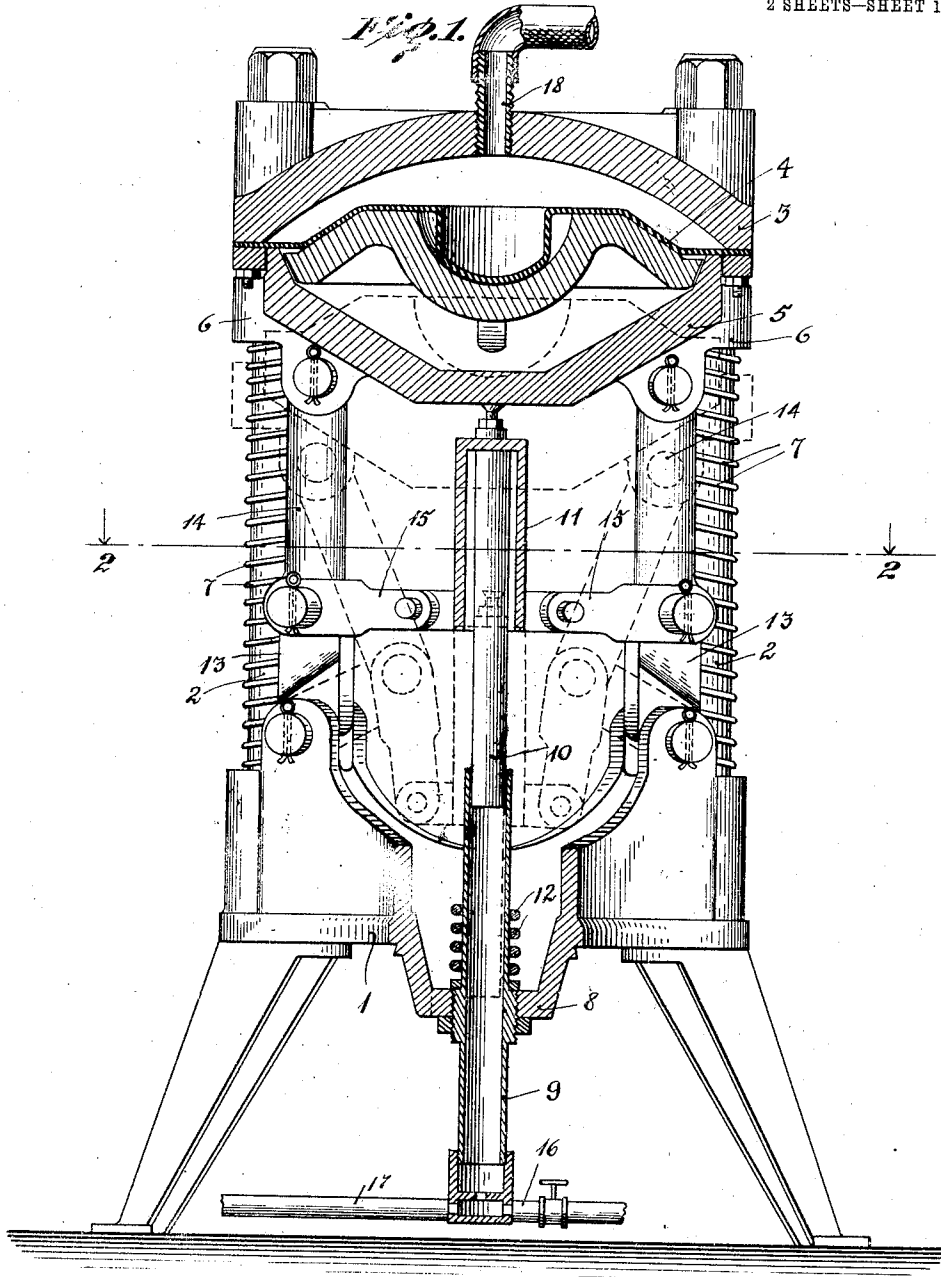
M. A. CUMING.
PRESS.

APPLICATION FILED APR. 20, 1912.

1,037,841.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.



Witnesses:
W. S. Ashley
J. J. Donohue

Inventor
Mark A. Cuming
By his Attorney
Max V. Ordman

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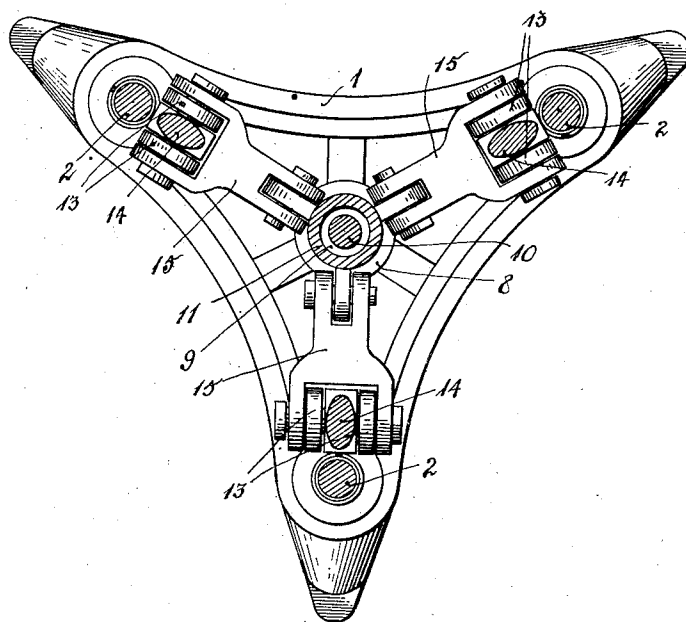
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

MARI A. CUMING, OF NEW YORK, N. Y.

PRESS.

1,037,841.

Specification of Letters Patent. Patented Sept. 3, 1912.

Application filed April 20, 1912. Serial No. 692,110.

To all whom it may concern

Be it known that I, MARI A. CUMING, a citizen of the United States of America, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Presses, of which the following is a specification.

The present invention relates to presses and more particularly to hat presses of the kind described and shown in my Letters Patent Nos. 167,506; 187,740; and 226,041 granted to me September 7, 1875; June 13, 1876 and March 30, 1880 respectively.

The object of my invention is to provide a construction that, besides taking less work and space, will be of a simpler nature and more effective in operation.

With this object in view the invention consists in the combination with a movable die holding member or mold, of a cylinder motor, a member connected to the reciprocating part of said motor and systems of toggle joints between said member and said die holding member whereby the latter will be forced against the dome with a constantly increasing pressure.

The invention also consists in the arrangement and construction of certain parts that hereinafter will be fully described, shown and set forth in the appended claims.

In the present example I shall describe and show my invention as applied to hat presses, although I wish it expressly understood that the same is not to be restricted for hat presses, but may be applied to presses of any other nature where high pressure, together with speed and wide opening, is required.

In the accompanying drawing, which forms a part of this specification and in which similar reference letters denote corresponding parts, Figure 1 shows a vertical section of a press and Fig. 2 a cross section on line 2—2 of Fig. 1.

With reference to the drawing, 1 represents a stand or framework which in the present example is in the form of a tripod but which may be of any other suitable construction and shape. Secured in the stand, and, in the present example, in the three corners of the tripod, are upright guide rods 2 to the upper ends of which is stationarily secured the dome 3 which in well known manner with the diaphragm 4 forms a water receptacle. Below the dome is ar-

ranged a mold 5 which serves as a seat for the die that gives form to the hats. The mold is provided with lugs 6 to receive and slide upon the rods 2 and to rest on spiral springs 7 surrounding said rods.

Below the mold the stand is provided with a suitable bracket 8 in which a vertically and centrally extending cylinder 9 is fixed. Reciprocating in the cylinder is a piston 10 which at its upper end carries a member, as a sleeve 11 or the like. The latter extends downwardly and the inner diameter thereof is so admeasured as to allow it of telescoping with the cylinder when the piston is moved downwardly. A spring 12 resting on the bracket 8 and surrounding the cylinder 9 serves as a resilient rest for the member when the latter arrives at its lowermost position. Hinged to the frame or stand 1 and oppositely to the bottom of the mold are bars 13 and 14 respectively. In the present example there is one pair of such bars for each corner of the stand. The opposite bars of each pair are pivotally connected by a bifurcated connecting rod 15 to the sleeve 11 and thus form a double system of toggle joints, whereby, when the piston is moved upwardly, the mold will be forced against the dome. The telescope arrangement is necessary only to get increased space, when the press is widely opened at the end. In cases when less opening is required, the telescoping member 11 may be dispensed with.

The operation of the piston may be effected either by hand, treadle or by power. When operated by power, steam, compressed air or water may be used. In the present example a hydraulic motor is used, the pressure water being supplied to the cylinder at the bottom end thereof through a supply pipe 16. Suitable valve mechanisms may be used for controlling the water supply and pressure. The supply of water to the water reservoir in the dome may be had from a separate source or there may be a pipe connection 17 between the bottom of the cylinder and the admission nozzle 18 of the dome.

By the above described construction the operation of the press is rendered more effective permitting a high, constantly increasing pressure which distends the rubber diaphragm to full extent of the die so that a minimum quantity of water is needed to obtain the highest pressure. By this means the power required to operate a press of this

construction is but 30% of that required in the ordinary hydraulic hat presses.

I do not wish to restrict myself to the particular details shown and described as the construction may be easily modified by those skilled in the art without deviating from the principle of my invention.

What I claim and desire to secure by Letters Patent is:

10 1. In a press, the combination with the movable die carrying member, of a cylinder motor, a member carried by the reciprocating part of said cylinder motor and capable of telescoping with the stationary part
15 thereof and toggle joints connecting said two members.

2. In a hat press, a mold for holding a die, a hydraulic motor, a member connected to the reciprocating part of said motor and
20 capable of telescoping with the stationary part thereof and systems of toggle joints connecting said mold to said member.

3. In a hat press, a mold for holding a die, a hydraulic motor arranged below the
25 same, a member carried by the piston and

capable of telescoping with the cylinder of the motor and toggle joints connecting said member to said mold.

4. In a hat press, a frame, a mold movably supported thereon, a hydraulic motor
30 comprising a vertical cylinder fixed to said stand, and a piston, a member carried by the said piston and capable of telescoping with said cylinder and toggle joints connecting
35 said mold to said member.

5. In a hat press, a frame, vertical guides secured thereto, a spring actuated mold movably engaged by said guides, a hydraulic motor comprising a vertical central cylinder fixed to said stand, and a piston, a member carried by said piston and capable of
40 telescoping with said cylinder and toggle joints connecting said mold to said member.

In testimony whereof I affix my signature in presence of two witnesses.

MARI A. CUMING.

Witnesses:

JAMES H. GOGGIN,
MAX D. ORDMANN.