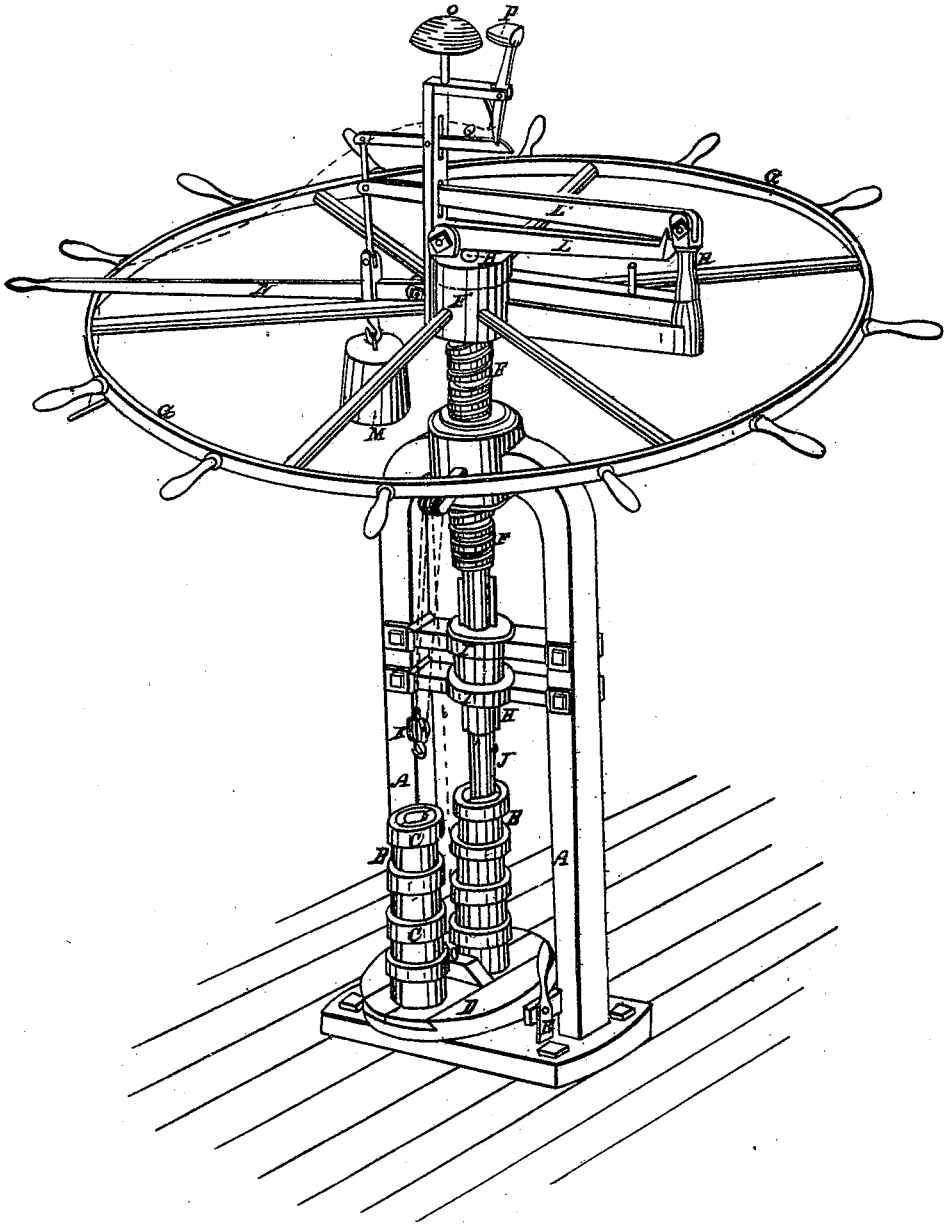
A. C. GOELL.

Loading Cartridges.

No. 1,986. Patented Feb. 18, 1841.



UNITED STATES PATENT OFFICE.

ALVIN C. GOELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN THE PRESS EMPLOYED FOR FILLING WAR-ROCKETS.

Specification forming part of Letters Patent No. **1,986,** dated February 18, 1841.

To all whom it may concern:

Be it known that I, ALVIN C. GOELL, of the city of Washington, in the District of Columbia, have invented certain new and useful improvements in the press for pressing into their cases the materials used in the charging of war-rockets and other missiles or articles requiring a heavy, uniform, and measured pressure, and which improvements are in part applicable to presses for other purposes; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawing I have given a perspective view of my press as used for the charging of rockets.

A A is the frame, which is best made of cast-iron.

B B are two molds, for containing the rockets while they are being pressed. These molds are made of brass or of any composition metal not likely to yield sparks by a blow or by attrition. They are made in two parts, and are held together by stout iron hoops C C.

D is a circular revolving basis upon which these molds rest, and upon which they are held by being received in dovetail grooves or in any other convenient way. The circular plate D turns on a pivot on its lower side, which pivot is so placed that the respective molds will, by causing it to revolve, be brought successively directly under the screw or piston of the press.

E is a spring-catch which arrests the plate D as it is turned round, by causing a bolt to enter holes in its side, so as to retain it in the proper position. By this arrangement one of the molds may be prepared for pressing while the materials in the other are undergoing that operation.

F F is the screw, by the descent of which and of a piston or rod contained in it the pressure is to be made. To the head F′ of this screw is affixed the wheel G, which may be contained in and operated upon in a room immediately above that in which the body of the press is situated. The screw F F is tubular, being bored out through its whole length, to receive a piston or cylindrical rod, H H′. The lower end of this piston slides through a guide-tube, I I, and is furnished with a feather or feathers, to prevent its turning round. Its upper end, H′, rests upon the head F′ of the screw, with which it rises and falls, excepting when the pressure has arrived at a certain amount, when it is arrested and remains stationary, this being occasioned by the resistance of the materials in the mold to further pressure, which resistance is indicated and ascertained by a system of combined levers the action of which will be presently explained.

J is a piston, drift, or rammer, which fits into the rocket-case containing the materials to be pressed, and upon which the piston or rod H H, passing through the screw, is to bear.

K is a tackle-fall for hoisting the drift or rammer J out of one of the molds after the pressure has been made and the other mold has been carried under the screw.

L L′ are compound-levers by means of which the amount of pressure to which the materials in the rocket are to be subjected is to be ascertained and regulated. The lever L has its fulcrum on the head F′ of the screw F F, and when the piston or cylindrical rod H H′ is arrested in its descent along with the tubular screw, said screw continuing to descend, its upper end will press against the under side of said lever at a short but determined distance from its fulcrum. The outer end of the lever L acts upon the lever L′ near to its fulcrum, and from the outer end of this last lever is suspended the weight M, which weight and the effective length of the arms of the respective levers, being given, will enable the operator to determine the amount of pressure made on the piston H, which may be varied at pleasure by increasing or diminishing the amount of the weight M. When required, the weight M may be raised by means of the lever N.

To give due notice when the required pressure is attained, I affix a bell, O, upon the press. The hammer P of this bell is latched into the lever Q, which, being combined with so as to be acted upon by the lever L′, causes the hammer P to strike the bell when the lever L′ is raised. The arm R, which sustains the lever L′, is affixed to the head F′ of the screw, and, along with the general system of levers, &c., revolves with it.

The principle applied to this press for the purpose of ascertaining and determining the pressure to which any article is subjected may be applied to presses for pressing a great variety of substances, and I intend so to apply it, but in so doing must necessarily so modify the arrangement of the respective parts as to

adapt it to the nature of the press and of the article to be pressed by it.

What I claim as constituting my invention in the above-described press, and desire to secure by Letters Patent, is—

1. The manner of combining a system of weighted levers with a screw, by causing a piston or rod to extend through a tubular opening in said screw, the lower end of said piston or rod acting against a follower, rammer, or other device analogous thereto in character and use, and its upper end acting upon a system of compound levers, by which the actual amount of pressure made may be ascertained and determined, substantially in the manner or upon the principle herein fully set forth.

2. The manner of combining two or more molds to be alternately brought under the pressing-screw and piston by the revolution of the basis on which they are situated, so that those not under the press may be prepared for its action during the time of making pressure upon that which is in the proper situation.

ALVIN C. GOELL.

Witnesses:
THOS. P. JONES,
JOS. ANDREWS.