

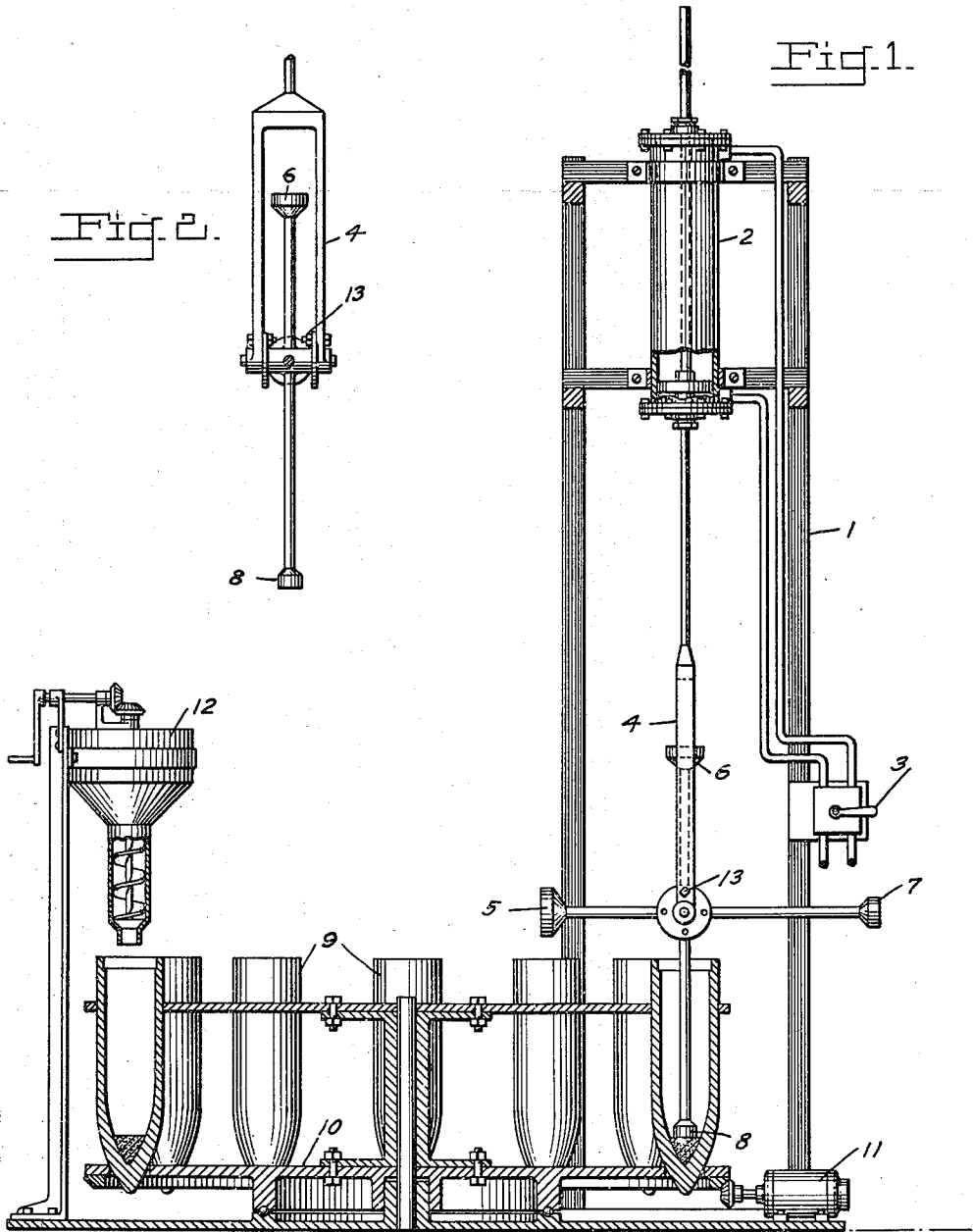
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2,395,898

PRESSING DEVICE

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UNITED STATES PATENT OFFICE

2,395,898

PRESSING DEVICE

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2 Claims. (Cl. 86—20)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to an apparatus and device for pressing powder into containers and the like. While the invention has particular application in the art of loading explosive powders into shell casings, it is not to be understood as limited thereto.

In the loading of shells and bombs, particularly shells of high calibre, such as the 8, 12, 14, and 16 inch shells, and large sized bombs, it is necessary that successive increments of powder be forced into the shell container in successive stages. In instances where the shell has a tapering body, it is obvious that varied size pressing tools, or presser feet as such pressing tools are commonly called in the art, be used to effect the desired close, dense packing and tamping of the explosive powder in the shell. At present, this is accomplished by first utilizing a presser foot of a certain fixed diameter, pressing the powder with this presser foot and subsequently removing the presser foot and inserting another presser foot of somewhat larger diameter to press successive increments of powder into the shells. In some instances this operation may be repeated from 3 to 4 times before the last portion of explosive powder is pressed into the shell body.

The primary object of the present invention is to provide a pressing tool so designed as to overcome the need of changing the pressing tool for each successive pressing and tamping operation.

An important feature of the invention is the saving of time and avoiding of duplication of strategic materials in the loading of explosive shells.

The invention can best be understood from the following description to be read in view of the accompanying drawing in which:

Figure 1 is a front elevational view of the preferred pressing device in use; and

Figure 2 is a side elevational view showing details of the invention.

Referring to the drawing, 1 indicates the frame of a shell loading device having affixed thereon an air cylinder 2. The air cylinder 2, is operated by manipulation of the controls 3, which are conveniently positioned upon frame 1. If required, controls 3 can be placed at some remote point where a barricade is placed in front of the device as a safety means. Extending and operable from air cylinder 2 is a forked shape presser arm 4 which serves as a means for support for a series of presser feet 5, 6, 7, and 8 respectively. Each of the said presser feet are of varying sizes,

both as to length of stroke of operation and of the area of the base of each respective presser foot. Each presser foot is so designed and positioned within the forked arm 4, so as to commit rotation of all of the presser feet with the arm. By this means, successive tappings can be accomplished wherein various diameters of powder are required to be pressed at varied depths.

In the operation of the device the shells 9 to be loaded with powder are positioned on a turntable 10, movement of which is actuated by motor 11. A powder mill 12, located in such a position so as to permit direct feeding of the explosive powder to each shell as it falls in line as the turntable rotates. In practice, the initial increment of powder is poured into the shell body and the appropriate size presser foot is used to press the powder in the shell to its desired density. The next succeeding increment of powder is then deposited into the shell body and the appropriate sized presser foot is then employed to press the second layer of powder to its desired density. This same operation is then repeated in successive stages until the shell is filled to its desired depth with the required amount of explosive powder pressed to its desired density. With each successive increment of powder it is to be understood that the appropriate sized presser foot is employed. Adjustments of bolts 13, which serve to hold each presser foot rigidly in position can be used to arrange for the proper size presser foot to be utilized in each particular pressing step.

While there has been herein described one particular modification of the invention, it is to be understood that changes in shape and design can be made without departing from the spirit and scope of the invention.

I claim:

1. A device for pressing powder into tapering shell bodies comprising a reciprocable presser arm means for reciprocating said arm, and a hub pivoted to said arm and carrying a series of presser feet rotatable with said hub, said presser feet having progressively increasing area of presser surface and having progressively decreasing length.

2. A device for pressing powder into tapering shell bodies comprising a reciprocable presser arm means for reciprocating said arm, a hub pivoted to said arm and carrying a series of presser feet rotatable with said hub, said presser feet having progressively increasing area of presser surface and having progressively decreasing length and means for locking said hub and presser feet assembly against rotation relative to said arm.

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