

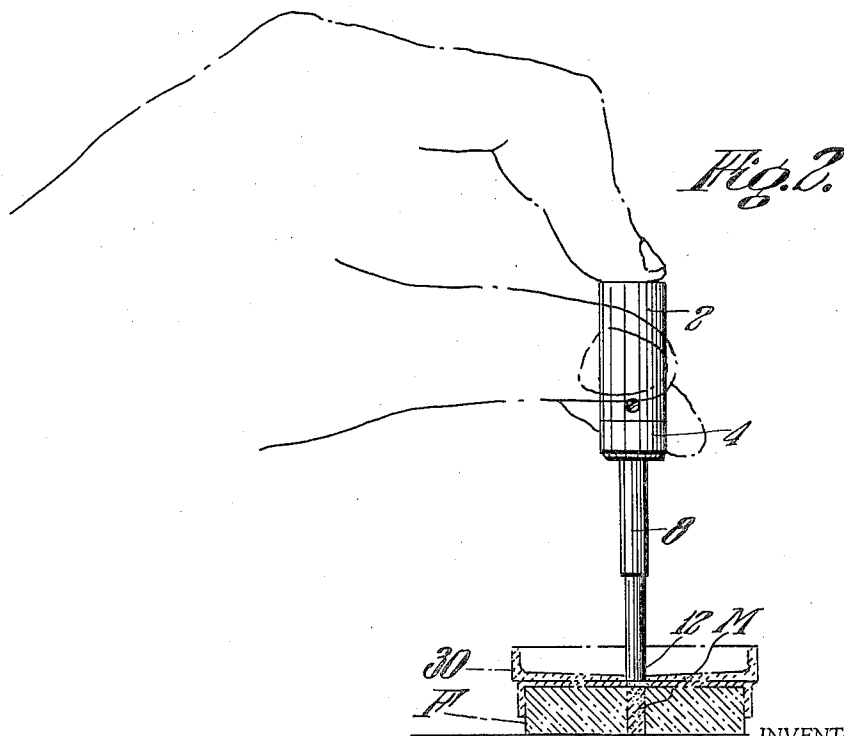
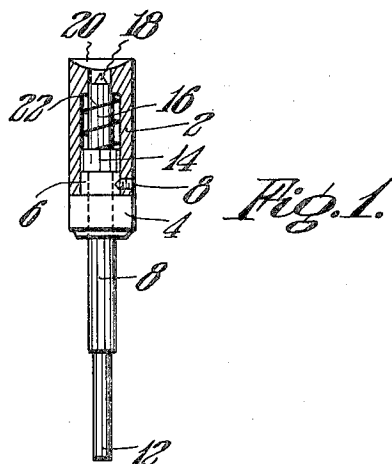
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LOADING TOOL

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LOADING TOOL

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5 Claims. (Cl. 86—30)

This invention relates to improvements in tools for tamping or filling openings, holes, recesses, grooves and the like with granular and like materials.

The principal objects of the invention are directed to the provision of a tool adapted for filling an opening or the like with granular material so that it has a predetermined degree of compactness or hardness.

The tool of the invention is adapted for broad application where it is desired to fill or pack openings, holes, recesses and the like with granular and like materials but for descriptive purposes it will be described in connection with the filling or loading of openings or holes of fuze parts with powder or other explosive materials.

It is common with fuze parts to fill the openings thereof with granular substances such as powder and this is usually accomplished by the use of a tool held in the hand and of substantially the same size as the opening to be filled, to pack or force the material into the opening.

It is difficult to pack the correct amount of material in the hole or to pack it with the desired density or degree of hardness with the result that the packing is either too dense or not dense enough and as a consequence the material does not function as desired.

According to this invention, there is provided a tool which due to its novel construction functions to facilitate the desired results and is accomplished by means to insure the correct pressure applied to the material and which, when exceeded, warns the operator so as to not exceed the desired pressure.

Various changes and modifications may be made in the form of the invention in order to adapt it for various uses and it is desired to be limited, if at all, by the appended claims rather than by the following description.

In the drawing:

Fig. 1 is a sectional elevational view through the tool of the invention; and

Fig. 2 is an elevational view of the tool shown in Fig. 1 to illustrate one manner of using the same.

Referring now to the drawing in detail, the invention will be fully described.

A barrel or body 2 is provided that has a central bore, as shown. A cap 4 has an upper reduced part 6 receivable in the lower portion of the bore and some means, such as a screw 8, in engagement with the body is provided that impinges the part 6 to hold the cap in assembled relation with the barrel.

A plunger 10 is slidable in the cap 4 and its lower end 12 is formed for acting on material to be tamped or packed in a hole, recess, groove or the like, and obviously may take any form desired.

A collar 14 fixed on the plunger is disposed within the bore of the body and an upper part 16 of the plunger is slidable in a reduced part of the bore of the barrel, as shown.

A point 18 is provided on the upper end of part 16 and normally when the collar 14 is against part 6 of the cap 4 the pointed end is disposed below the upper cup-shaped end 20 of the barrel 2.

A compression spring 22 is disposed around the part 16 of the plunger between the collar 14 and upper end of the larger bore of the barrel to urge the plunger 8 downwardly relative to the barrel so that the collar 14 brings up against the upper end of part 6.

The spring resists upward movement of the plunger relative to the barrel but by pressing on the barrel sufficiently to overcome the resistance of the spring the upper pointed end of the plunger protrudes beyond the end of the body.

While the tool may be used in various ways and for various purposes, its use for purposes of disclosure will be explained with reference to Fig. 2.

A fuze part is represented by F which has a hole, as shown, that is to be filled with powder P. It is convenient to use a funnel or cup-shaped member 30 for overlying the fuze part F and it has a hole, as shown, for registering with that of the fuze part. The funnel may contain a supply of powder which is to be fed therefrom into the hole of the fuze part.

The body of the tool may be conveniently embraced between the thumb and middle finger of the hand, with the forefinger on the upper cup-shaped end of the barrel part, all as shown.

With powder in the hole of the fuze part and the end of the plunger thereover, the forefinger presses on the barrel which through the spring 22 acts on the plunger 8 so that it presses on the powder.

This pressing on the barrel packs or tamps the powder in the hole. When the degree of compactness or density is such that the pressure of the finger on the barrel overcomes the resistance of the spring the barrel then moves downwardly relative to the plunger so that the point 18 impinges the finger whereby the operator is warned against further pressure on the barrel.

The spring may be varied within wide limits so that relative movements of the barrel and

plunger will occur under different degrees of pressure applied to the barrel. It will be possible by employing a spring of certain characteristics to obtain a certain pressure and thereby a certain degree of compactness of the powder or other material.

As has been stated, the tool may be used for many and various purposes and it may be changed and modified within wide limits to adapt it for the purpose desired without departing from the spirit and scope of the invention.

What it is desired to obtain and secure by Letters Patent of the United States is:

1. A tool of the class described comprising in combination, a barrel having a bore therein, a plunger having an upper end slidable in said bore and a lower end for pressing on material, a spring in said bore resisting movements of said plunger relative to the barrel in one direction, and a pointed part on the upper end of the plunger in the upper end of the bore normally below the upper end of the barrel adapted when the plunger is moved in an opposite direction relative to the barrel to protrude beyond the end thereof.

2. A tool of the class described comprising in combination, a barrel having a bore therethrough, a plunger having an upper end slidable in said bore and a lower end for pressing on material, a spring in said bore urging the plunger relative to the barrel in one direction, means limiting movement of said plunger in said one direction, a pointed part on the upper end of said plunger in said bore normally disposed in said bore below the upper end of the barrel adapted to protrude beyond said end when the plunger is moved relative to the barrel in an opposite direction.

3. A tool of the class described comprising in combination, a plunger having a lower end for applying pressure to material, a barrel having a bore slidably receiving the upper end of the plunger with said bore extending through the upper end thereof, spring means in said bore urging said barrel and plunger apart, and a point on the upper end of the plunger in said bore below the upper end of the barrel, all adapted

and arranged whereby as said barrel is moved downwardly relative to the spindle against the action of the spring means the point may protrude beyond the upper end of the barrel.

4. A tool of the class described comprising in combination, a barrel for engagement by the fingers of the hand having a bore therethrough, a plunger having its upper end reciprocable in said bore and a lower portion extending from the lower end of the barrel for pressing on material, a collar on said plunger in said bore spring means in said bore resisting downward movements of the barrel relative to the plunger, and a point on the upper end of the plunger in the upper end of the bore disposed normally below the upper end of the barrel, all adapted and arranged whereby as the barrel is moved downwardly of the plunger to overcome the resistance of the spring the point protrudes above the upper end of the barrel, said spring means including a compression spring around said plunger disposed between an end of said bore and a collar on said plunger.

5. A tool of the class described comprising in combination, a barrel for engagement by the fingers of the hand having a bore therethrough, a plunger having its upper end reciprocable in said bore and a lower portion extending from the lower end of the barrel for pressing on material, a collar on said plunger in said bore spring means in said bore resisting downward movements of the barrel relative to the plunger, and a point on the upper end of the plunger in the upper end of the bore disposed normally below the upper end of the barrel, all adapted and arranged whereby as the barrel is moved downwardly of the plunger to overcome the resistance of the spring point protrudes above the upper end of the barrel, said spring means including a compression spring around said plunger disposed between an end of said bore and a collar on said plunger, a cap secured to the lower end of the barrel slidably receiving the plunger against which the collar on said plunger abuts to limit movements of the barrel and plunger by said spring means.

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