

A. M. HANCE.
 MULTIPLE PLUNGER CASE.
 APPLICATION FILED APR. 21, 1910.

965,138.

Patented July 19, 1910.

FIG. I

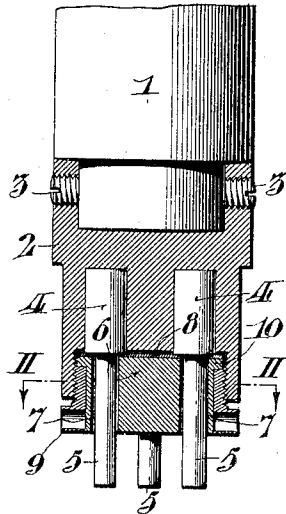


FIG. II

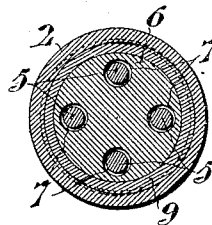
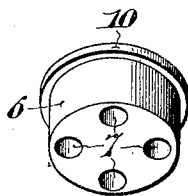


FIG. III



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ANTHONY M. HANCE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HANCE BROTHERS & WHITE, OF PHILADELPHIA, PENNSYLVANIA, COPARTNERS.

MULTIPLE-PLUNGER CASE.

965,138.

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To all whom it may concern:

Be it known that I, ANTHONY M. HANCE, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Multiple-Plunger Cases, whereof the following is a specification, reference being had to the accompanying drawings.

The invention relates to new and useful improvements in multiple plunger cases, within which a plurality of plungers are immovably held, so that the same may be simultaneously reciprocated and cooperate with a die for the compression of tablets or pills, or for use in a machine of any character in which multiple plungers are simultaneously reciprocated.

It is essential that all the plungers may be relatively removable and releasable individually from the plunger head, and it is essential also that said plungers shall be held in the head with the utmost rigidity for the reason that the slightest relative movement between any one of the plungers and the plunger head, may interfere with the proper alinement of the plungers and their engagement with the respective die with which the plunger cooperates.

The present invention has for an object to provide means for simultaneously clamping each of the plungers in the plunger head, and at the same time to provide means for engaging the heads of the plungers, which means may yield in any inequalities that may exist in the plunger heads.

In the accompanying drawings, Figure I, is a vertical section of a multiple plunger case embodying my invention. Fig. II, is a horizontal section of the same along the line II, II, in Fig. I. Fig. III, is a detailed perspective view of the clamping head.

The member 1, is the usual reciprocating member and carries at its lower end the plunger case 2. Said plunger case is provided with a recess, which engages the lower end of the reciprocating member, and may be secured thereto in any desired way, as by set screws 3. Said plunger case 2, is suitably bored out to accurately receive enlarged heads 4, of the plungers 5. The seats thus formed in the plunger case for the heads of the individual plungers are slightly less in length than each of the heads of said plungers, so that the shoulders of the plunger heads when they are properly seated,

will project slightly beyond the lower face of the seating piece or plunger case proper. Said plunger case is provided with a recess at the end thereof, and within said recess is located the clamping head 6. Said clamping head is formed with a plurality of apertures 7, which apertures are of sufficient size to receive freely the largest size of plungers adapted to be used in the plunger case. By making the apertures of the size above noted, I am able to use plungers of different sizes, at the same time.

The clamping head 6, is preferably made of any suitable rigid material. Interposed between the clamping head 6, and the shoulders of the heads of the plungers 4, is a yielding washer 8, which is also apertured so as to receive the plungers. Said washer may be made of any suitable soft metal, such as copper or lead. As a means for securing the clamping head to the seating piece or plunger case, I have provided a threaded ring 9, which is adapted to be screwed into the recess formed in the lower end of the plunger case, and engage a flange 10, formed on the clamping head 6. By turning in the threaded ring 9, the clamping head is pressed against the washer of soft metal, which in turn is pressed against the shoulders of each of the plungers yielding to any inequalities in the heads of said plungers, and each of the plungers will be firmly and rigidly held in its socket. The clamping head 6, as will be noted, surrounds each one of the plungers, and will cause the seating pressure to be applied against the shoulder of each plunger, and thus firmly hold said plungers in place.

Having thus described my invention, I claim:—

1. The combination of a plurality of headed plungers; a plunger case provided with seats within which the heads of the plungers are received; a clamping head common to each of said headed plungers; a washer of comparatively soft metal interposed between said clamping head and the heads of said plungers; and means for securing the clamping head to the plunger case for compressing said washer of soft metal against the heads of each of said plungers.

2. The combination of a plurality of headed plungers; a plunger case provided with seats within which the heads of the plungers are received; a clamping head having aper-

tures permitting the flanges to pass through the same; a washer of comparatively soft metal interposed between said clamping head and the heads of the plungers; and a threaded ring engaging said plunger case and said clamping head, whereby the washer of soft material may be compressed against the heads of the plungers and clamp said plungers within their seats.

10 3. The combination of a plurality of headed plungers; a plunger case provided with seats within which the heads of the plungers are received; means for securing the headed plungers in their seats including a clamping

head having a plurality of apertures which receive the plungers, each of said apertures being of the size to receive the largest size plungers, whereby different size plungers may be used at the same time in said plunger case.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this twentieth day of April 1910.

ANTHONY M. HANCE.

Witnesses:

JAMES H. BELL,
E. L. FULLERTON.