No. 793,425. PATENTED JUNE 27, 1905.

J. K. DIMMICK.

APPARATUS FOR FORMING PIPE MOLDS.

APPLICATION FILED MAR. 10, 1904.

Fig. 1

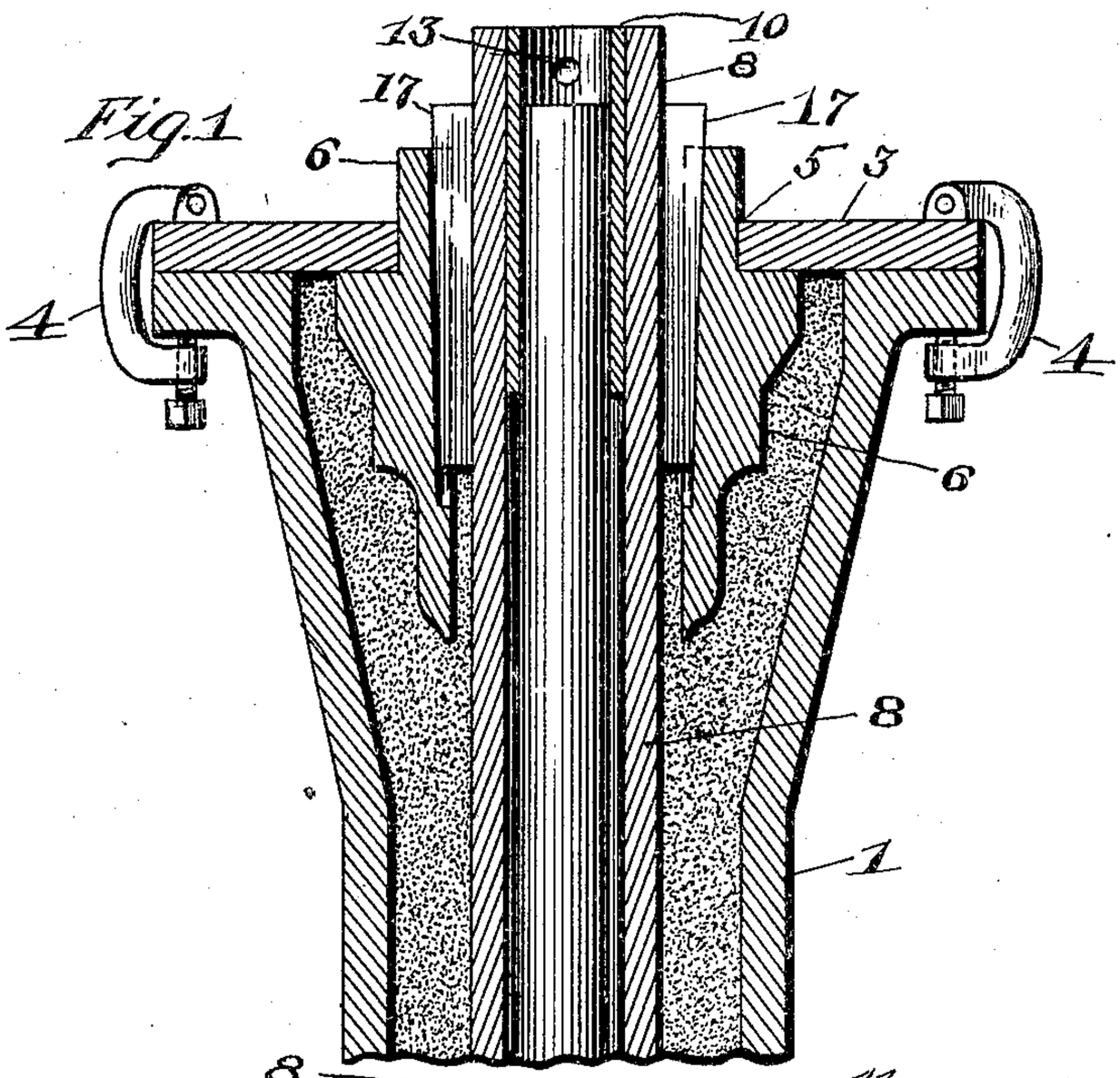


Fig. 2

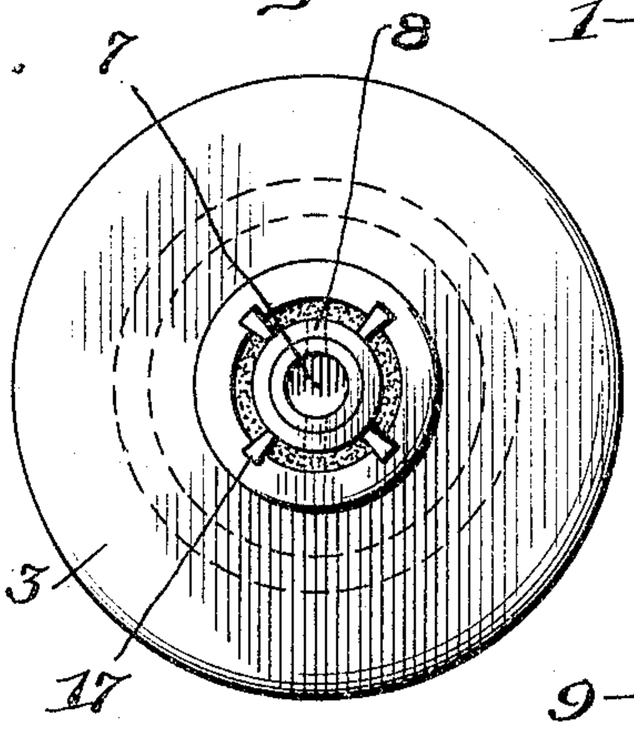
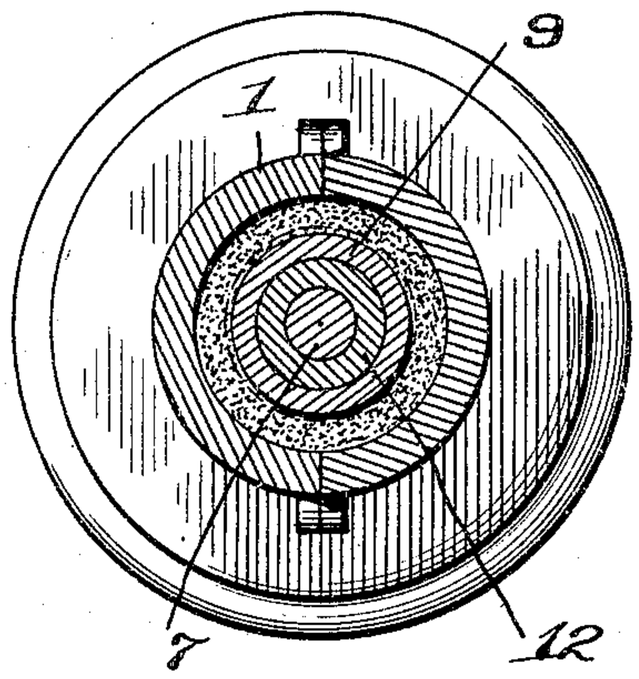


Fig. 3



WITNESSES:

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No. 793,425. Patented June 27, 1905.

UNITED STATES PATENT OFFICE.

JACOB K. DIMMICK, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR FORMING PIPE-MOLDS.

SPECIFICATION forming part of Letters Patent No. 793,425, dated June 27, 1905.

Application filed March 10, 1904. Serial No. 197,560.

To all whom it may concern:

Be it known that I, JACOB K. DIMMICK, a citizen of the United States, and a resident of the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Forming Pipe-Molds, of which the following is a full, clear, and complete disclosure.

My invention relates to certain improvements in that class of pipe-molds in which the molding-sand is rammed or compressed by drawing through the same a tapering former or pattern; and the object thereof is to improve the construction, so that said pattern operates more easily, efficiently, and accurately, while at the same time less space is required for manipulation than heretofore.

Briefly, my invention comprises a pattern or former which is longitudinally movable within the pipe-mold and is provided with an accurately and firmly placed guide which holds said form in position within the mold or flask during the entire operation of the pattern or form.

For a full, clear, and exact description of one form of my invention reference may be had to the following specification and to the accompanying drawings, forming a part thereof, in which—

Figure 1 is a vertical longitudinal sectional view of a flask having my improved former or pattern in position therein; Fig. 2, a top plan view of the same on a slightly-reduced scale; and Fig. 3, a transverse sectional view, on a slightly-reduced scale, taken substantially on the line 3 3 of Fig. 1.

The device of this application is an improvement over those of my prior patents with No. 317,101, issued May 5, 1885, and No. 683,255, issued September 24, 1901, and also is a modified form of the device disclosed and claimed in my copending application, filed March 10, 1904, Serial No. 197,559. This form of my invention attains certain other advantages similar to those of the device of my copending application and are hereinafter to be clearly pointed out and claimed.

Referring to the drawings, the numeral 1 indicates a cylindrical flask which is preferably made in two longitudinal sections hinged together at one of their meeting edges and secured by means of removable clamps at the other, so that it may be readily opened when it is desired to remove the mold after casting. This construction is well known in this art, and hence does not need specific description.

The numeral 2 indicates a base or standard upon which the flask rests during the forming and casting operations and to which the flask is secured by well-known or suitable clamps.

3 indicates a top plate, which is also secured to the upper end of the flask by means of removable clamps, such as indicated at 4. The plate 3 has a central circular aperture 5, which is adapted to receive and hold in place the upper end of the bell-pattern 6, which gives the mold the shape of the upper enlarged end of the pipe.

The parts just described are substantially those set forth in my prior patent, No. 683,255, issued September 24, 1901, and operate in substantially the same way.

The improvement herein contained is comprised in providing a former or rammer which has a central cylindrical longitudinal guide 7, which is provided at its lower end with a tapering portion 8′, adapted to be seated in a socket or recess in the base 2, which accurately centers and holds said guide in position. About the guide 7 I place a cylindrical sleeve 8, which has at its lower end an enlarged tapering portion 9. The sleeve 8 is preferably made somewhat larger than the guide 7 and may be centered thereon by means of bushings 10, 11, and 12. These bushings are provided principally to permit accuracy in turning the interior of the sleeve 8, it not being necessary to have the bearing-surfaces between the guide 7 and the sleeve 8 extend for the entire length of said parts. The upper end of the sleeve 8 is provided with suitable means, such as holes 13, with which a hook or other device may be engaged for giving a longitudinal pull to said sleeve. The lower end of the cylindrical guide 7 is preferably provided with a slot-and-pin device 14 for holding the same within the recess in the base 2.

The upper cylindrical portion of the sleeve 8 is held in position centrally in the flask 1 by

means of wedges or tapering pins 17, which are adapted to engage corresponding grooves in the bell-pattern 6, said pattern having a sufficient internal diameter to allow the lower tapering end of the sleeve 8 to be easily drawn therethrough.

In the use of my device for forming the molds preparatory to casting the pipes the cylindrical guide 7, having the sleeve 8 placed about the same, is first seated within the mold with its lower tapering end 8 within the recess or opening in the base 2. Molding-sand is then placed about said sleeve within the flask, so that the said flask is substantially filled by the same. The bell-pattern 6 is then placed in position by being forced downwardly about the sleeve 8, and the wedges 17 are then inserted between said sleeve 8 and the bell-pattern 6, after which the molding-sand between the bell-pattern and the flask is then rammed to the required density in the usual manner. The cover 3 and guide 7 are then placed in position upon the end of the flask 1 and about the upper cylindrical portion of the bell-pattern 6. When in these positions, the parts are ready to have the former or pattern withdrawn. This is accomplished by attaching the hook to a crane or other suitable draft means to the upper end of the sleeve 8 by inserting a hook or similar device in the holes 13. This will cause the sleeve 8 to be drawn upwardly about the cylindrical guide 7, which will at the same time cause the lower tapering portion 9 of the sleeve 8 to compress the molding-sand between the interior of the flask and said sleeve to the required density, the proportion between the diameter of the main portion of the sleeve 8 and the diameter of the larger portion of the sleeve 8 beyond the tapering portion 9 being in direct proportion to the amount of compression or ramming desired to be given to the molding-sand. When the tapering portion of the sleeve 8 enters the opening in the bell-pattern 6, the same will come in contact with the wedges or pins 17, and as the motion is continued said pins will be ejected from said pattern, and the sleeve 8 may therefore be entirely removed. The bell-pattern and guide 7 are then removed and the core placed in position in place of the sleeve 8 and the guide 7. For the bell 3 a suitable cover or top having a gate therein is substituted, and the pipe is then cast in the well-known manner.

I do not wish to be limited to the exact details and arrangement of parts herein set forth, for changes may be made herein without departing from the spirit and scope of my invention; but

What I claim, and desire to protect by Letters Patent of the United States, is—

1. In combination with a flask, a removable guide therein, a sleeve, having a tapering portion, carried by said guide, and means adjacent the end of said sleeve for laterally holding same in position, being removable as the lower end of said sleeve contacts therewith.

2. In combination with a flask, a central, longitudinal guide, removably fixed therein, a sleeve, having an enlarged tapering portion at its lower end, carried by said guide, removable means for holding said sleeve laterally in position at its upper end and adapted to be removed by the enlarged portion of said sleeve.

3. In combination with a flask, a central, longitudinal guide, removably fixed therein, a sleeve, having an enlarged tapering portion at its lower end, carried by said guide, and removable pins for holding said sleeve in position laterally at its upper end.

4. In combination with a flask, a bell-pattern, a central, longitudinal guide, removably fixed in said flask, a sleeve, having an enlarged tapering portion at its lower end, carried by said guide, and removable devices between said sleeve and bell-pattern adapted to be removed as the tapering portion of said sleeve passes through said bell-pattern.

5. In combination with a flask, a central, longitudinal guide, removably fixed therein, a sleeve, having an enlarged tapering portion at its lower end, carried by said guide, a bell-pattern adapted to surround said sleeve, and removable pins adapted to be inserted between said bell-pattern and sleeve, and be removed as the enlarged portion of said sleeve passes through said bell-pattern.

In witness whereof I have hereunto set my hand this 8th day of March, 1904.

JACOB K. DIMMICK.

Witnesses:

ELEANOR T. MCCALL,

EDW. W. VAILL, Jr.