J. J. GRUENFELD, JR. & P. KIRCHER.

MOLD FORM.

APPLICATION FILED MAY 28, 1918.

1,300,381.

Patented Apr. 15, 1919.

2 SHEETS—SHEET 1.

FIG. 2.

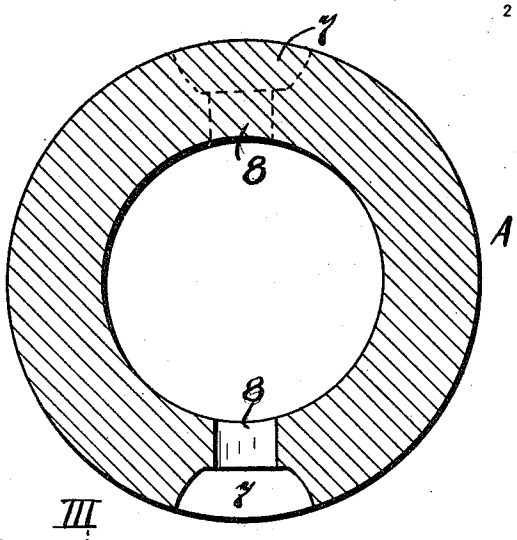
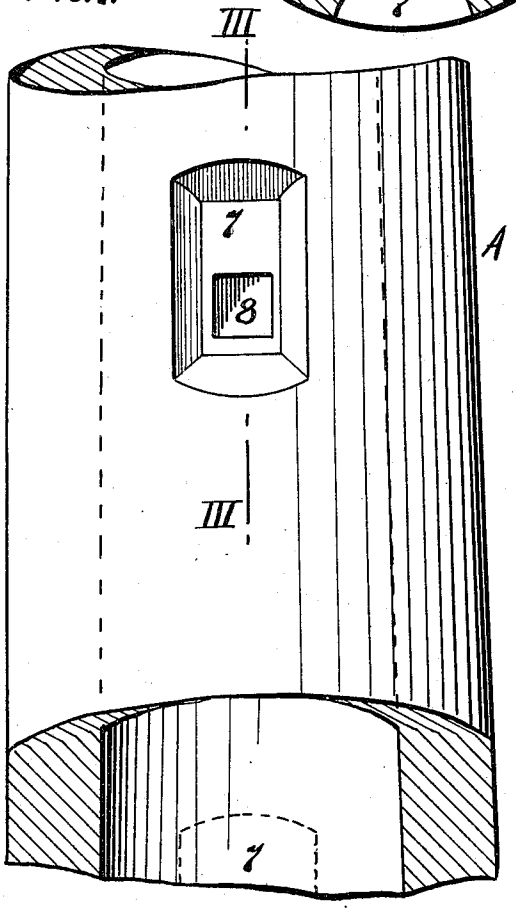


FIG. 1.



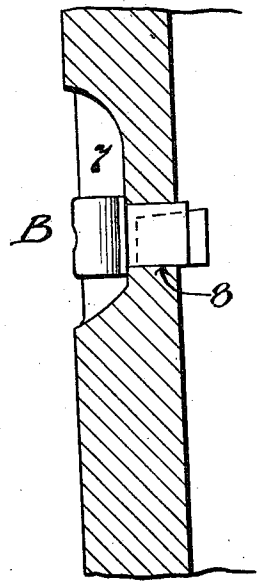


FIG. 3.

WITNESS:

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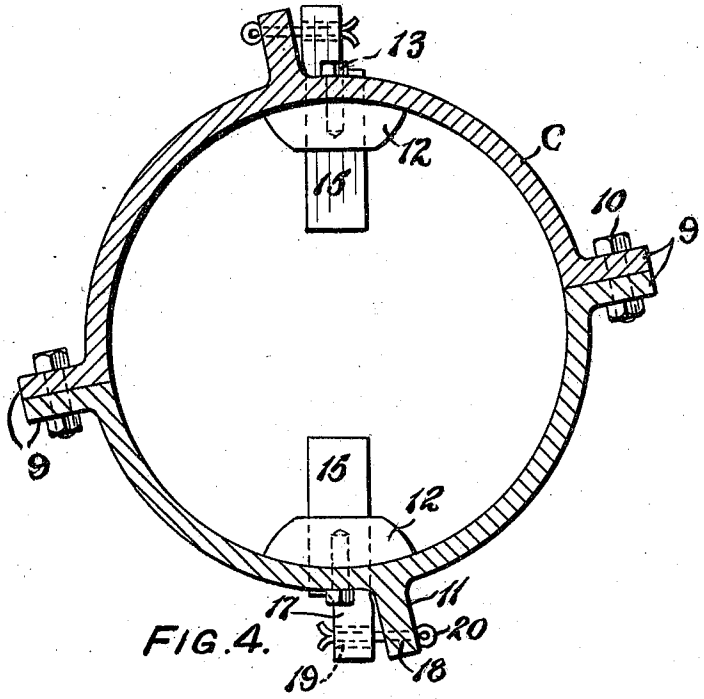

FIG. 4.

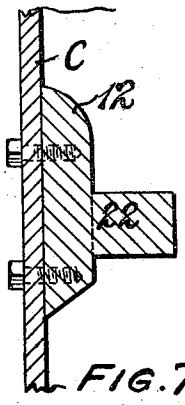

FIG. 7.

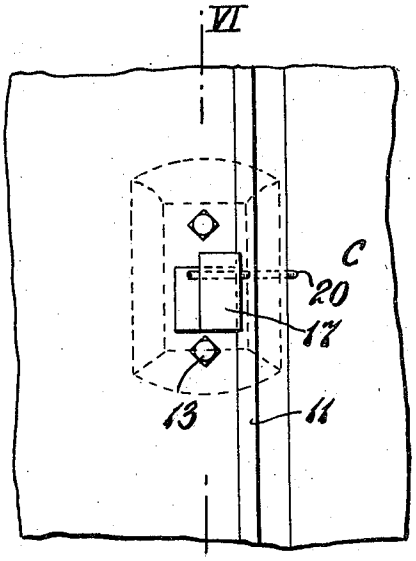

FIG. 5.

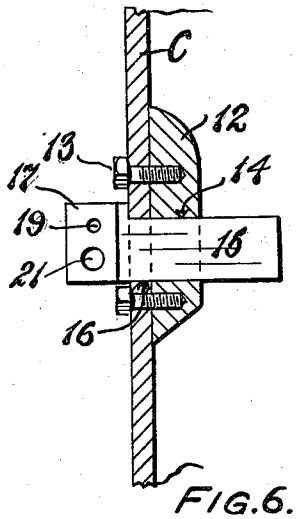

FIG. 6.

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UNITED STATES PATENT OFFICE.

JULIUS J. GRUENFELD, JR., AND PAUL KIRCHER, OF CHICAGO, ILLINOIS, ASSIGNORS TO MASSEY CONCRETE PRODUCTS CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF VIRGINIA.

MOLD-FORM.

1,300,381. Specification of Letters Patent. **Patented Apr. 15, 1919.**

Application filed May 28, 1918. Serial No. 235,803.

To all whom it may concern:

Be it known that we, JULIUS J. GRUENFELD, Jr., and PAUL KIRCHER, both citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mold-Forms, of which the following is a specification.

This invention relates to a mold form for use in the making of concrete and other cementitious poles, and has particular reference to means for forming step receiving recesses adapted to receive steps of the same general character as that described and claimed in our co-pending application Serial Number 235,802, filed May 21, 1918.

Our invention has for one of its primary objects the provision of a simple mold form of the character described which can be readily stripped from the completed pole without injury to or defacement of the fresh concrete. Our invention also contemplates a mold form the parts of which may be quickly assembled or taken apart and which are firmly held in position during the forming of the pole, particularly where the pole is made by a rotary process.

The foregoing, together with such other objects as may hereinafter appear or are incident to our invention, we attain by means of a construction which we have illustrated in preferred form in the accompanying drawings, wherein:—

Figure 1 is a side elevation of a portion of a pole showing the step receiving parts thereof; Fig. 2 is a cross-section of the pole shown in Fig. 1; Fig. 3 is a section taken on the line III—III of Fig. 1 with a step in position; Fig. 4 is a cross-section through the mold with the step recess forming portions in position; Fig. 5 is a side elevation of Fig. 4; Fig. 6 is a section taken on the line VI—VI of Fig. 5; and Fig. 7 illustrates a modification of our invention.

Referring now to the drawings, the pole, which may be of the hollow or solid type, is indicated by the reference letter A, such pole having arranged on alternate sides a plurality of recesses 7 and apertures 8 in which the steps indicated as a whole at B in Fig. 3 are received. Such steps form no part of the present invention being described and claimed in the afore-mentioned application for Letters Patent. The top and side walls or edges of the recesses are curved or rounded and the bottom walls or edges thereof are sloped, as indicated in the drawings, so that the recesses will be self-draining. The apertures 8, which are preferably rectangular, are located at a point below the middle of the recesses, in order to facilitate the insertion of the lineman's spurs into the steps which are to be introduced and fastened in the apertures 8.

The mold C for making the poles is preferably divided longitudinaly in a plurality of parts, such parts being provided with flanges 9 adapted to be secured together at intervals by means of suitable bolts 10. The sections or parts of the mold may be provided intermediate their ends with stiffening ribs 11. Secured to the inner surface of the mold and on alternate sides thereof are a plurality of cores 12 which are shaped to form the recesses 7 above described. The cores are secured to the mold form by means of the screws or studs 13 and each core is provided with an aperture 14 extending therethrough adapted to receive a plug 15 the end of which projects beyond the core so as to form the apertures 8. The cores 12 are mounted so that the apertures 14 therein, come opposite similar apertures 16, formed in the mold wall, and the plug 15 is provided with a head or shoulder 17 which is adapted to take against the outer surface of the mold form and limit the inward movement of the plugs. The cores and plugs are so located that when the parts are assembled the head 17 of the plugs will lie adjacent to the ribs 11 which are utilized as a means for preventing the plugs from shifting out of position. In order to accomplish this result the ribs are provided with apertures 18 and the heads 17 of the plugs are provided with similar apertures 19 adapted to receive the cotter pins 20. This fastening means is particularly useful where the poles are formed by the rotary process as the cotter pins prevent the plugs from working out under the action of the centrifugal force developed. In order to remove the plugs we provide apertures 21 in the heads 17 adapted to receive a suitable form of tool.

The operation is as follows, assuming that the parts are assembled as shown in Fig. 4 and that the pole A has been formed by the rotary or other method: Upon completion of the pole the cotter pins 20 are first withdrawn and then the plugs 15 are with-

drawn. The plugs may be thus withdrawn without defacing or injuring the fresh concrete as they will strip through the apertures 14 in the cores 12. After the removal of the plugs the sections of the mold may be readily stripped.

In the modification shown in Fig. 7 the plugs 22, instead of being removable as in the arrangement already described, constitute a permanent part of the cores 12.

We claim:

1. A mold form for making concrete poles comprising a shell having on its inner surface a plurality of cores arranged on alternate sides and adapted to form recesses in the face of the pole, and removable plugs mounted in the cores, the inner ends of which are adapted to project inwardly beyond the cores.

2. A mold form for making concrete poles comprising a shell and a plurality of removable plugs mounted therein alternately on opposite sides in such manner that the said plugs have one end projecting inwardly into the shell, and the other end outwardly therefrom, and means for detachably securing said outer ends to the shell.

3. A mold form for making concrete poles comprising in combination a shell, a plurality of cores on the inner face of said shell, arranged on alternate sides thereof, said shell and cores being apertured, and removable plugs adapted to be inserted in said apertures, the ends whereof are adapted to project inwardly beyond the cores.

4. A mold for making concrete poles comprising in combination a shell having a plurality of apertures alternately arranged on opposite sides, said shell being provided with projections adjacent said apertures, a plurality of plugs adapted to be removably inserted in said apertures, the ends whereof project inwardly within the shell, and means for securing said plugs to said projections.

In testimony whereof, we have hereunto signed our names.

JULIUS J. GRUENFELD, JR.
PAUL KIRCHER.