Nov. 16, 1926. 1,607,072

F. J. GREMEL

MOLD FORM FOR PLASTIC MATERIAL

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Fig. 1.

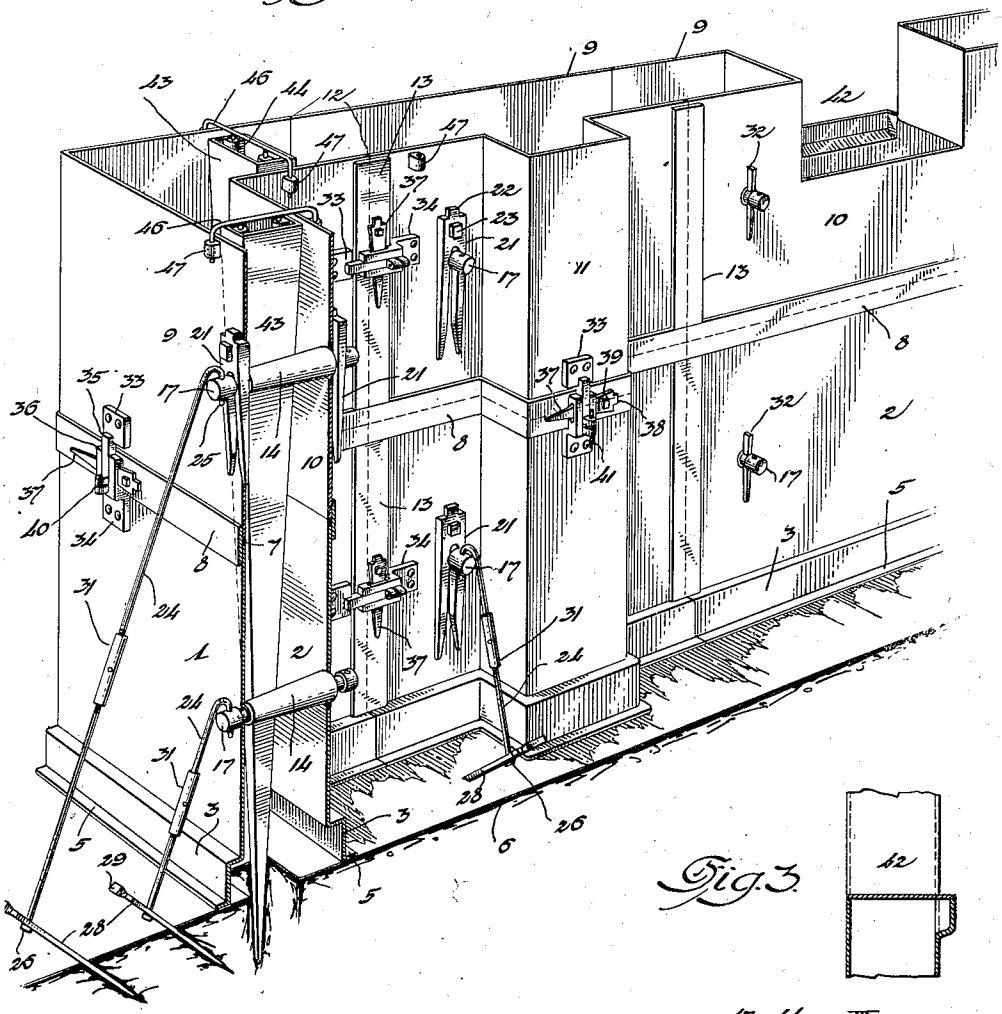


Fig. 3.

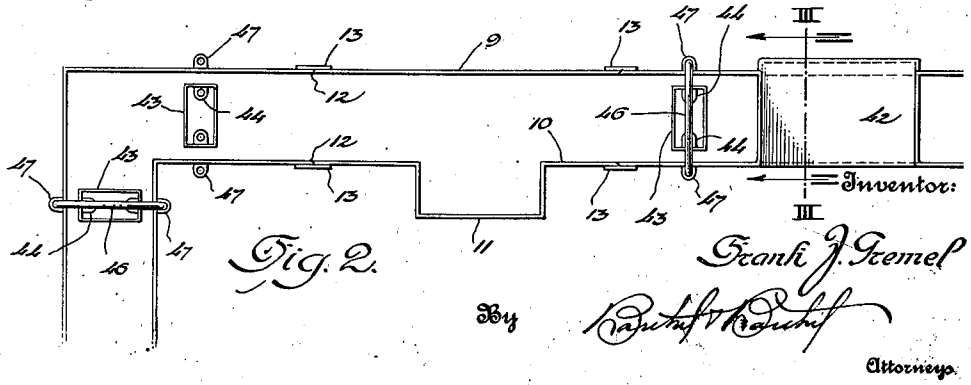


Fig. 2.

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Fig. 4.

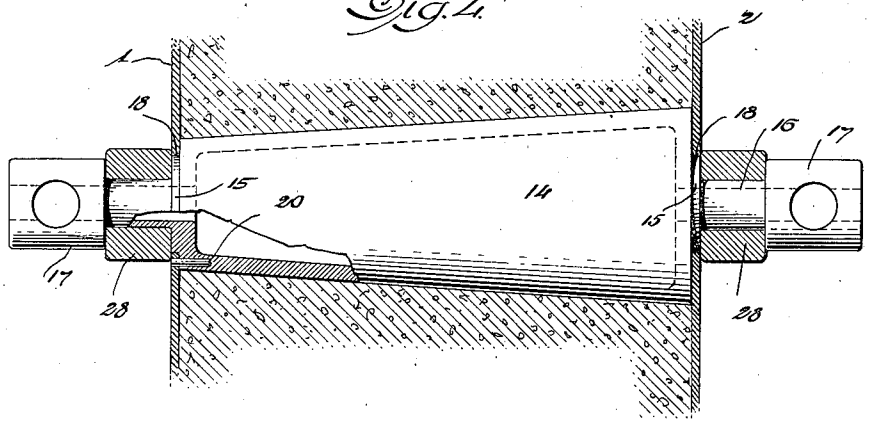


Fig. 5.

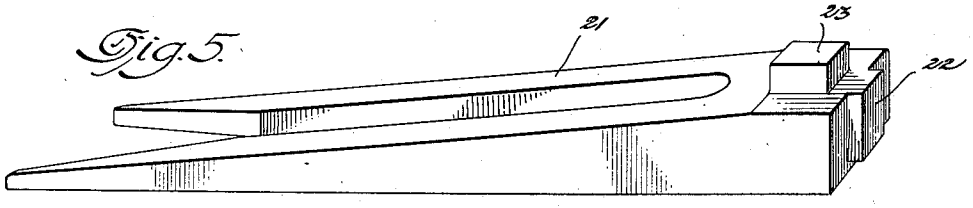


Fig. 6.

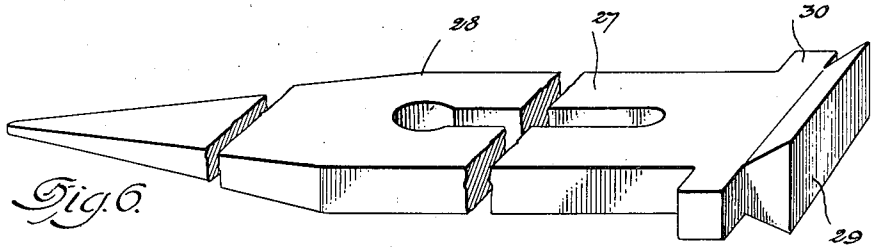
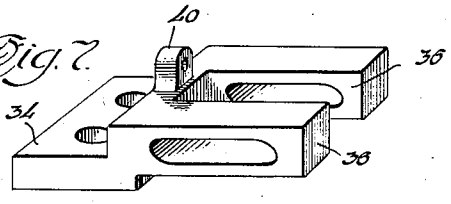


Fig. 7.



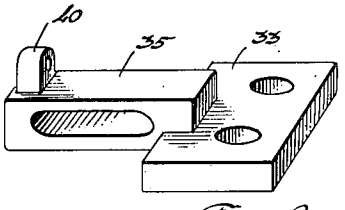


Fig. 8.

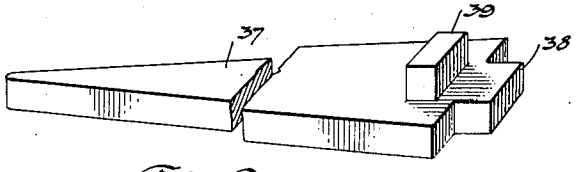


Fig. 9.

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Fig. 10.

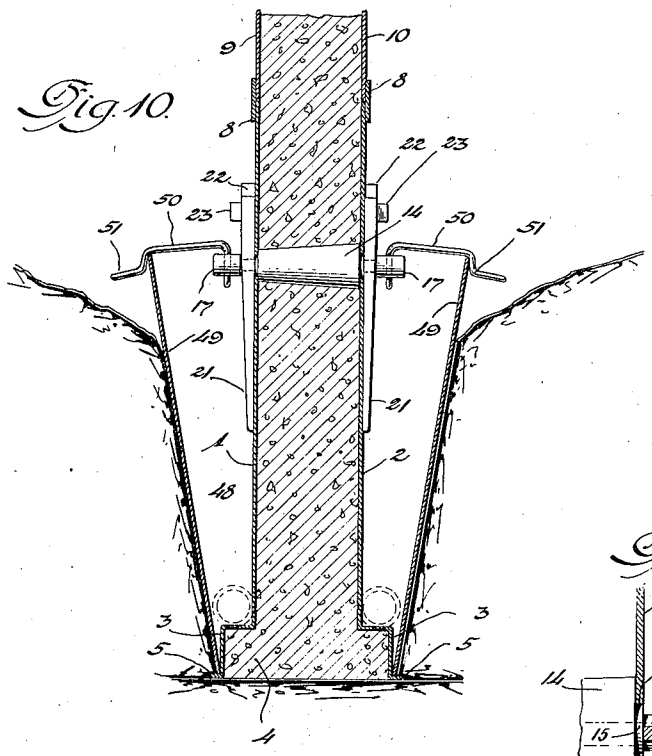
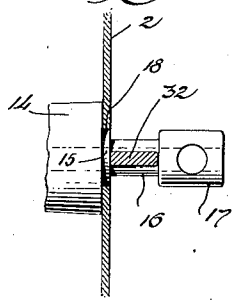


Fig. 13.



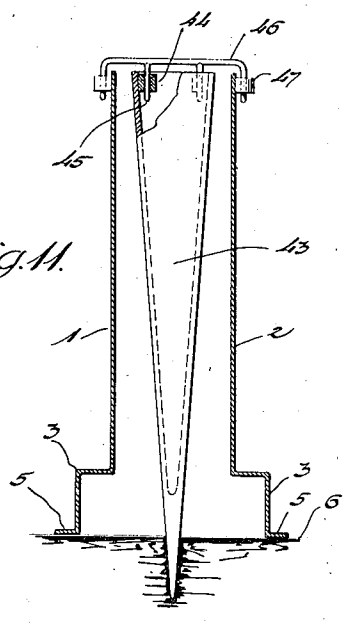


Fig. 11.

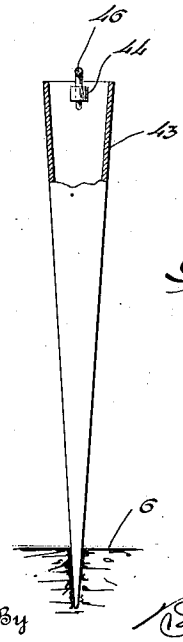


Fig. 12.

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Attorneys.

Patented Nov. 16, 1926.

1,607,072

UNITED STATES PATENT OFFICE.

FRANK J. GREMEL, OF DETROIT, MICHIGAN.

MOLD FORM FOR PLASTIC MATERIAL.

Application filed February 9, 1925. Serial No. 7,878.

This invention relates to mold forms for plastic material and has special reference to outer forms and cores that may be advantageously used in the formation of foundation walls, particularly walls having footings and basement windows.

The primary object of my invention is to provide metallic forms that may be easily and quickly installed to form a mold into which concrete or other plastic material may be poured, tamped and seasoned to form substantial well finished walls, which may be solid or hollow, depending upon the character of the building to be supported by said walls.

Another object of this invention is to provide wall forms and positive and reliable means for connecting said forms to maintain the same in perfect alignment and proper spaced relation so that there may be no bulging or displacement during the placing of concrete in the forms.

A further object of my invention is to provide novel spacing members that may be anchored relative to the ground to brace the forms and hold the same in defined positions.

A still further object of this invention is to provide a core that may be easily positioned in a form and maintained therein during the pouring of concrete to eventually form a vertical passage in a wall.

The above and other objects are attained by construction which will be hereinafter specifically described and then claimed, and reference will now be had to the drawings, wherein—

Figure 1 is a perspective view of forms assembled to provide a mold for the formation of a foundation wall;

Fig. 2 is a plan of the same;

Fig. 3 is a cross sectional view taken on the line III—III of Figure 2;

Fig. 4 is an enlarged cross sectional view of a form connecting device;

Fig. 5 is a perspective view of a forked wedge used in connection with the connecting device;

Fig. 6 is a perspective view of a ground stake;

Figs. 7 and 8 are perspective views of detached connecting members;

Fig. 9 is a perspective view of a key used in connection with the connecting members;

Fig. 10 is a vertical cross sectional view showing the manner of constructing a wall in a trench;

Fig. 11 is a cross sectional view of a mold with a core therein;

Fig. 12 is a side elevation of a core partly in section; and

Fig. 13 is a horizontal sectional view illustrating a modified form of connecting device.

To form a foundation wall of considerable depth, forms are placed in superposed relation, but when a comparatively low wall is to be formed it may be only necessary to use my footing forms, and in either instance the configuration of the forms depends on the nature of the wall to be constructed. In the majority of instances a foundation wall has angular portions, pilasters, abutments, window openings and the like, and in such instances the forms are shaped so that eventually a desired wall is produced.

Considering my forms from the ground up, there are outer and inner forms 1 and 2 which are placed in vertical parallel relation, and said forms have the lower edges thereof offset as at 3 for the formation of a footing 4. The offset portions 3 of the forms have lateral flanges 5 adapted to rest on the ground 6 and support the forms substantially vertical. The upper edges of the forms are beveled, as at 7 and provided with lap strips 8 so that upper wall forms 9 and 10 may be set down on the lower forms 1 and 2 as a continuation thereof, as best shown in Figs. 1 and 10. As before stated, the forms 1, 2, 9 and 10 may be angular for the formation of a corner wall or may be flat for the formation of a straight wall, or may have extended portions 11 for the formation of a pilaster, abutment or the like. Where the vertical edges of the forms are to be joined said edges are beveled, as at 12 and provided with lap strips 13 which are of such dimensions as not to interfere with the horizontal lap strips 8.

For retaining the upper and lower forms in spaced parallel relation, connecting devices are employed at suitable places throughout the formation of a wall so as to prevent bulging or spreading of opposed forms when concrete is poured into the forms. Each connecting device comprises a hollow conical member 14 provided with end shoulders 15, neck portions 16, and aper-

tured heads 17. The outer and inner forms are provided with transverse aligning openings 18 to receive the shoulders 15 at the ends of members 14. To assist in correctly positioning the members 14 and prevent rotation thereof, the ends of said members may have dowel pins 20 to fit in openings provided therefor adjacent the openings 18 of the outer forms 1 and 9.

After the conical members 14 are placed in position, forked wedges 21 are driven down over the neck portions 16 between the forms 1 and 2 and the heads 17, as best shown in Figs. 1 and 4. The wedges 21 are formed with blow heads 22 adapted to be struck when driving the wedges into position, and on the outer faces of said wedges are lugs 23 to facilitate extracting or removing the wedges.

To brace the forms relative to the ground tie rods 24 are employed, said tie rods having hook shaped ends 25 to engage in the apertured heads 17, and the opposite ends of said tie rods are formed with heads 26 to engage in the keyhole shaped openings 27 of stakes 28 which are driven into the ground in a slanting position. The stakes, similar to the wedges 21, have blow heads 29 and extracting lugs 30. The tie rods 24 are of various lengths and are provided with turnbuckles 31 for drawing the rods taut after being anchored.

As shown in Figure 1, the forked wedges 21 alone may be used, especially in connection with the upper forms 9 and 10, and in some instances the neck portions 16 of the conical members 14 may be slotted to accommodate tapering keys 32, as shown in Figs. 1 and 13.

For connecting and holding horizontal and vertical adjoining edges of the various forms, I employ connecting members 33 and 34 which are riveted or otherwise secured to the forms at such places where the meeting edges of the forms may be conveniently connected together. The connecting member 33 has a slotted tongue 35 adapted to fit between slotted tongues 36 of the member 34 and mounted in the slots of such tongues is a tapering key 37 having a blow head 38 and an extracting lug 39. The connecting members 33 and 34 are also provided with apertured lugs 40, and a pin 41 may be placed in said lugs to assist in holding the tongues 35 and 36 in proper alinement, or a suitable wire seal or locking device may connect the lugs 40 to prevent the connecting members from being separated by unauthorized persons. In other words, the various forms may be locked together to prevent disassembling until the poured concrete has thoroughly seasoned.

Some of the upper forms 9 and 10 may be constructed to provide a window opening 42 having a lintel and sill. This is best shown in Figs. 1 to 3 inclusive.

Between the forms that provide the mold walls may be placed, at suitable intervals, removable tapering hollow cores 43 adapted to have the lower ends thereof driven into the ground 6, as best shown in Figs. 11 and 12. The upper open ends of the cores have interior apertured lugs 44, and in these lugs are placed the depending spacing pins 45 of a spacing member 46 which has its ends mounted in apertured lugs 47, carried by the forms 9 and 10 at the upper edges thereof. The cores 43 will therefore be braced within the wall mold and concrete can be safely poured around the same. When the cores are removed there will be vertical passages in the foundation wall which may be used for various purposes.

When the foundation wall is to be constructed in a trench 48, retaining plates 49 may be placed in the sides of the trench with the lower edges of the plates resting on the flanges 5 of the forms 1 and 2, and said plates may bear against the earth forming the side walls of the trench to prevent earth from crumbling in on the offset footing portions of the forms 1 and 2. Short tie rods 50 may be placed in engagement with the heads 17 of the connecting devices, and the outer ends of said tie rods may be offset or hook shaped as at 51 for engagement over the upper edges of the trench plates 49.

When the foundation wall is not of a great depth necessitating the upper forms 9 and 10, the cores 43 may be located between the forms 1 and 10, as shown in Fig. 11.

It is thought that the utility of my foundation wall mold will be apparent without further description, and while in the drawings there are illustrated the preferred embodiments of my invention, it is to be understood that the structural elements are susceptible to such variations and modifications as fall within the scope of the appended claim.

What I claim is:—

A foundation wall mold comprising opposed forms having offset and flanged lower edges for the formation of a footing, a connecting member extending through said forms, and forked wedges mounted on the ends of said member against said forms.

In testimony whereof I affix my signature.

FRANK J. GREMEL.