W. J. PEDERSEN.

CONCRETE FORM.

APPLICATION FILED SEPT. 20, 1920.

1,407,569.

Patented Feb. 21, 1922.

Fig. 1.

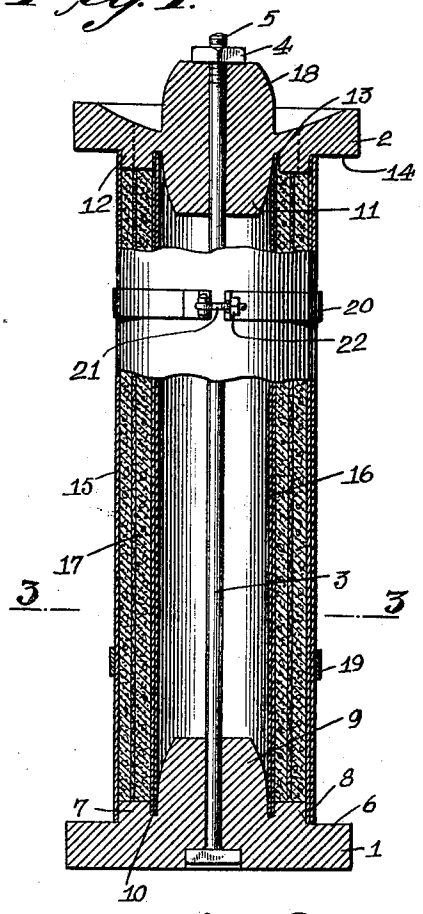


Fig. 2.

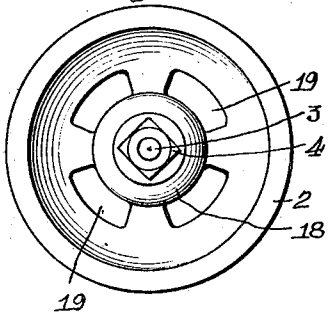


Fig. 3

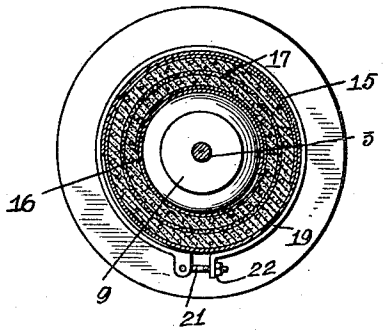
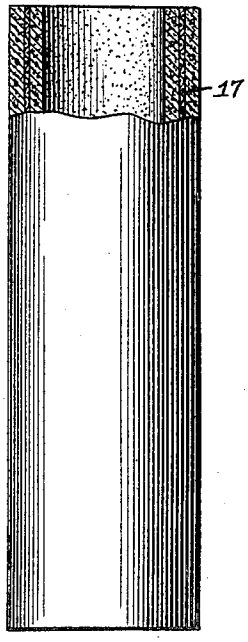


Fig. 4.



WITNESSES

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CONCRETE FORM.

1,407,569. Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed September 20, 1920. Serial No. 411,654.

To all whom it may concern:

Be it known that I, WALDEMAR JULIUS PEDERSEN, a citizen of the United States, and a resident of Floral Park, in the county of Nassau and State of New York, have invented a new and Improved Concrete Form, of which the following is a full, clear, and exact description.

This invention relates to concrete forms, and has particular reference to forms used in making building columns.

An object of the invention concerns the provision of a concrete form or mold so constructed that columns may be simply and quickly formed with a minimum expenditure of time and labor on the part of the workmen.

Another object resides in the provision of means whereby the necessity for long experience or skill on the part of the laborer is not required to build columns using this invention.

A further object of the invention resides in the provision of means whereby after the columns are formed they may be readily removed from the form or mold without impairing their surfaces.

A still further object resides in the provision of the particular construction and arrangement of parts as will be hereinafter described and claimed and shown in the accompanying drawings.

In the art which concerns the manufacture of building material, such as posts or columns, from concrete, cement, plaster, or other similar material, it has generally been necessary for the workmen performing these operations to have considerable experience and great skill in the manufacture of such structures. Moreover, the forms previously used required the expenditure of considerable time and labor in their assembly and manipulation. In order to overcome these disadvantages in the use of forms for making concrete structures, I have provided a simple form for manufacturing posts and columns which, briefly and in general terms, comprises an upper and a lower form head which may be adjustably connected together. These heads are provided with suitable projections on adjacent faces adapted to receive inner and outer mold forms which are made of resilient material and between which inner and outer forms the material of which the column is to be built is poured. Reenforcing material, such as rods or wire mesh, may be inserted within the mold in a very simple and ready manner. Means are provided also whereby the curved forms, comprising the inner portion of the mold, may be very easily assembled in place with respect to the upper and lower heads above mentioned. Furthermore, one of the heads is provided with means whereby the material may be poured therethrough.

Further features and advantages of the device will be apparent from the description and claims taken in connection with the drawings.

The invention is illustrated in the drawings, of which—

Figure 1 is a vertical longitudinal section through the form or mold;

Figure 2 is a plan view of the form;

Figure 3 is a horizontal transverse section taken on the line 3—3 of Figure 1; and

Figure 4 is an elevation partly in section showing the completed column or post.

As shown in the drawings, the form or mold comprises a lower head portion 1 and an upper head portion 2, which are adapted, as shown, to be connected together by means of a bolt or rod 3 having an adjustable nut 4 on a threaded nut portion 5 thereof. The inner face 6 of head portion 1 is provided with a raised annular portion 7 which forms on its outer face a circular flange 8. A tapered plug 9 projects inwardly from the central portion of the face 6 of the head portion 1. Adjacent the base of this tapered plug a groove 10 is formed between the base of the plug 9 and the inner edge of the raised annular portion 7. In an exactly similar manner the head portion 2 is provided with a tapered plug member 11, a flange 12, and a grooved portion 13 on its inner face 14. The head portions 1 and 2 are disposed with faces 6 and 7 adjacent each other.

A sheet of flexible material 15, such as sheet tin, copper or other suitable substance, is adapted to extend between the inner faces 6 and 14 of the head portions 1 and 2 and to surround and bear against the flange portions 8 and 12, respectively, of the head portions 1 and 2. This sheet 15 forms the outer member of the mold proper. A similar sheet of flexible material 16 is formed into a cylindrical sheet and its opposite edges rest in the grooved portions 10 and 13 in the head portions 1 and 2, respectively. The space between the sheet 15 and

the sheet 16 forms the portion into which the cement, concrete or other substance is to be poured. A curved sheet 17 of any re-enforcing agent, such as a wire mesh or fabric, may be placed within the mold between the sheets 15 and 16 in any desired manner. The upper head portion 2 is provided with an outwardly extending plug portion 18 through which the bolt or rod 3 extends and against the outer face of which the adjustable nut 4 bears. The surface of the upper head portion 2 in a plurality of places around the plug portion 18 is pierced by apertures such as 19, shown in Figure 2, through which the cementitious material is poured into the mold space between sheets 15 and 16.

With respect to the curved portions 10 and 13, it will be noticed that the tapers of the plug members 9 and 11 are so formed as to gradually increase in diameter until the lower portion of the tapers adjacent the above-mentioned grooves are substantially of the same diameter as the grooves themselves. This particular formation is for a purpose which will be hereinafter apparent in considering the operation of the device.

In the operation of this device, in forming columns or posts, the lower head portion 1 is placed on any suitable support with the bolt or rod 3 projecting upwardly therethrough. The inner sheet of flexible material 16 is then rolled into a cylindrical shape having a diameter in size intermediate the diameter of the groove 10 and the diameter of the outer tapered end of the plug 9. This curved end of the sheet 16 is then placed over the tapered plug 9 and slowly forced downward along the taper, whereby the effect of this taper is to gradually expand the sheet 16 into the proper diameter, and by thus forcing the sheet 16 downwardly it is gradually and easily introduced into the groove 10. The tapered plug 9, therefore, forms a simple and positive means whereby a curved edge of the sheet can be readily introduced into the groove. It will be apparent to any one familiar with this sort of device that it is a very difficult matter to insert the edge of a sheet of flexible material into a groove which is circular in form.

Having inserted the lower end of the sheet 16 into the groove 10, the upper head portion 2 is placed on the upper end of bolt or rod 3 and the upper edge of the sheet 16 is similarly inserted in the groove 13. The nut 4 is then threaded on to the bolt 3 to tighten the union between the head portions and the sheet 16. The sheet of re-enforcing material 17, which is of wire mesh or other suitable material, is then placed around the sheet 16 and spaced therefrom the desired distance. This sheet 17 rests upon the top surface of the raised annular portion 7. The outer sheet 15 is then rolled tightly around the flange portions 8 and 12 and fastened in this position by means of a metallic band 20, which may be placed around the sheet 15 at a suitable number of points. This band is provided on one end with a pivoted lever 21 having its outer end threaded and adapted to receive a nut 22. The outer end of this lever 21 is adapted to swing into a slotted portion in the other end of the band 20 and to be tightened therein by the operation of the nut 22. The mold is now in condition to receive the cementitious material, which is thereupon poured into the mold through the apertures 19 in the head portion 2 above mentioned. After the cementitious material has set a desired period of time, the mold can be dismantled in a very simple manner.

By unscrewing the nut 22, the lever 21 can be swung back, thus releasing the band 20 of the outer sheet 15. The sheet 15 being of flexible and semi-resilient material, and having been tightly rolled into position, at this time tends to open up or expand like a spring; and this action, which is similar to the action of one plate sliding on another, causes the sheet 15 to move away from the outer surface of the cementitious material without causing any particular damage thereto. The nut 4 is then unscrewed and the heads 1 and 2 are removed. To remove the inner sheet 16, one end of the upper edge is gripped and moved in a direction parallel to itself, as in winding a spring. This results in decreasing the diameter of the sheet 15 and removes the surface of the sheet from the inner face of the cementitious material by a sliding action similar to the one above mentioned. This also results in the removal of the sheet from the cementitious surface with substantially no damage to the surface thereof.

It is readily perceived, therefore, that my device is capable of simple and ready assembly and can be readily and easily dismantled and in such manner as to result in no disfiguration of the surface of the cementitious material. The flexible sheets can be formed and inserted into place with a maximum of ease, and the whole operation can be performed by one not necessarily having any great experience or high degree of skill in this particular line of work.

It is understood, of course, that the dimensions of the head portions 1 and 2 and the dimensions of the flanges and grooves thereon, which have been above mentioned, can be varied to suit the desired dimensions of the post or column which is to be made by means of this device.

What I claim is:—

1. A concrete form comprising a head portion having a groove therein, a sheet of flexible material, and means on said head por-

tion to guide the edge of the sheet into the groove.

2. A concrete form comprising a head portion having a groove therein, a sheet of flexible material, and means on said head portion adjacent the groove to guide the edge of the sheet into the groove.

3. A concrete form comprising a head portion having a groove therein, a sheet of flexible material, a tapered plug on said head portion adjacent the groove to guide the edges of the sheet into the groove.

4. A concrete form comprising a head portion having a circular groove therein, a sheet of flexible material adapted to be rolled into the form of a cylinder, and a tapered plug on said head portion adjacent and within the groove to guide the edge of the sheet into the groove.

5. A concrete form comprising two head portions, a curved sheet of flexible material extending therebetween, and means on said head portions and integral therewith to engage said sheet and hold it in position.

6. A concrete form comprising two head portions, a cylindrical sheet of flexible material extending therebetween, and means on said head portions and integral therewith to engage said sheet and retain it in position.

7. A concrete form comprising two head portions having grooves therein, a cylindrical sheet of flexible material extending therebetween, and means extending between the head portions to hold them rigidly in position.

8. A concrete form comprising two head portions having circular grooves therein, a cylindrical sheet of flexible material extending therebetween, and a tapered plug on each of said head portions and disposed within said grooves to engage the edges of the cylindrical sheet and guide them into the grooves.

9. A device comprising a surface having a closed curved groove therein, a tapered plug on said surface within and adjacent said groove and adapted to guide the edges of a sheet of material into said groove.

10. A device comprising a surface having a closed circular groove therein, a tapered plug on said surface within and adjacent said groove and adapted to guide the edges of a sheet of material into said groove.

11. A concrete form comprising a plurality of head portions having grooves therein, a cylindrical sheet of flexible material engaging the groove along its edges, an annular flange in each of said head portions of greater diameter than the groove, a second sheet of flexible material embracing and bearing against the outer edge of said flanges at its opposite ends, and means embracing the sheet to hold it against the flanges.

12. A concrete form comprising a plurality of head portions having circular grooves therein, a cylindrical sheet engaging along its opposite edges with said grooves, means on each of said head portions adapted to guide the edges of said sheet into the grooves, an annular flange on said head portions, said flanges being of greater diameter than the grooves, a second sheet of flexible material extending between the head portions and bearing against the outer edge of each flange at its opposite edges, and fastening means embracing said second sheet of flexible material to hold it against the flanges.

13. A concrete form comprising a plurality of head portions having circular grooves therein, a cylindrical sheet engaging along its opposite edges with said grooves, means on each of said head portions adapted to guide the edges of said sheet into the grooves, an annular flange on said head portions, said flanges being of greater diameter than the grooves, a second sheet of flexible material extending between the head portions and bearing against the outer edge of each flange at its opposite edges, fastening means embracing said second sheet of flexible material to hold it against the flanges, and means extending between said head portions to retain them rigidly with respect to the flexible sheets.

WALDEMAR JULIUS PEDERSEN.