May 25, 1926. 1,586,212

F. L. NEMEC

MEANS FOR RAISING CONCRETE MOLDS

Filed Nov. 14, 1921 2 Sheets-Sheet 1

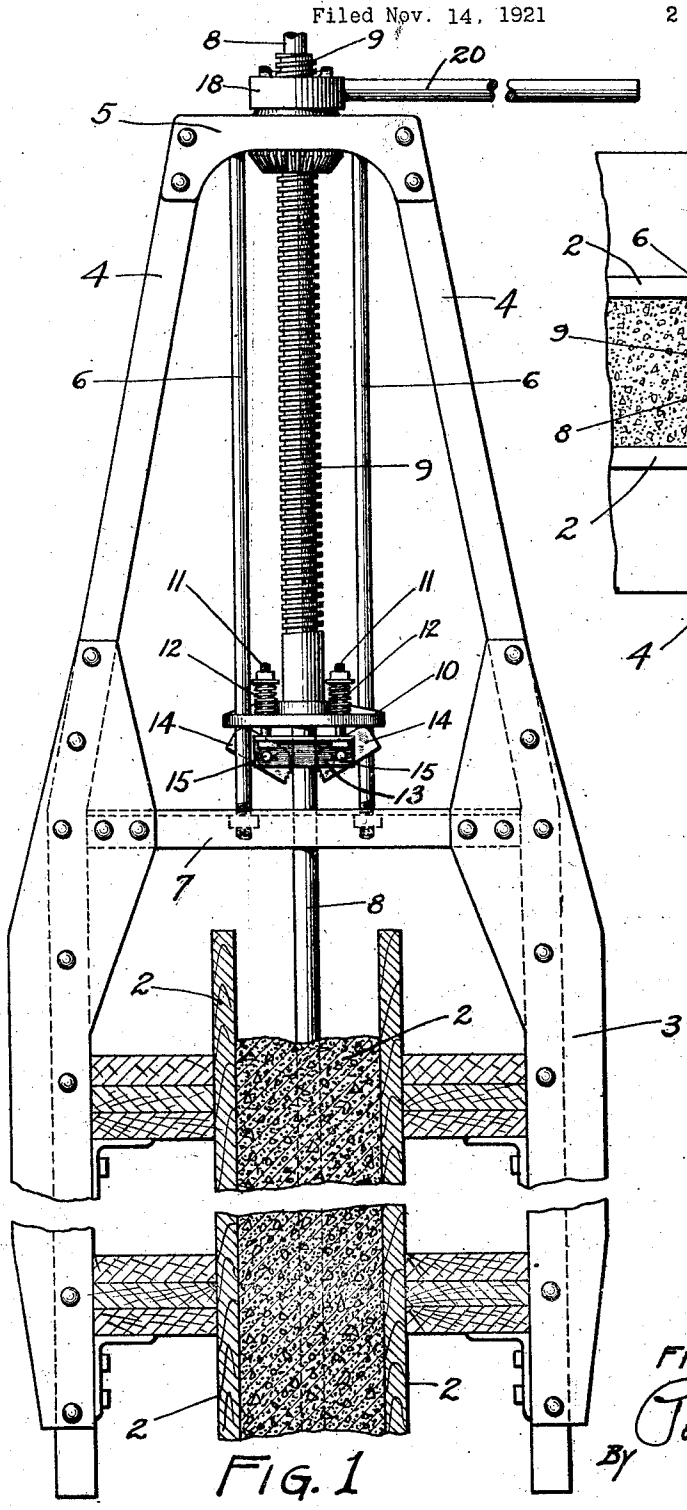


FIG. 1

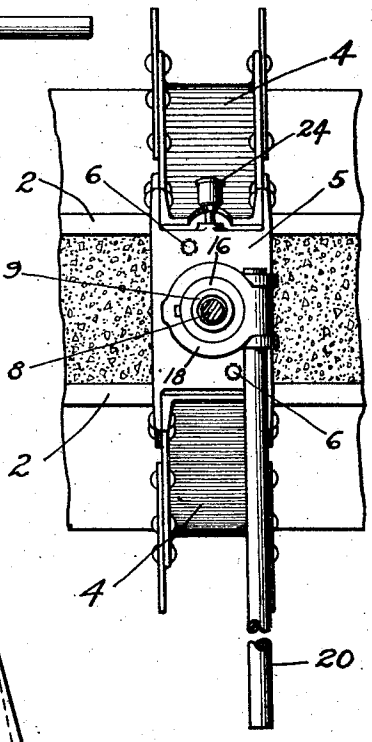


FIG. 2

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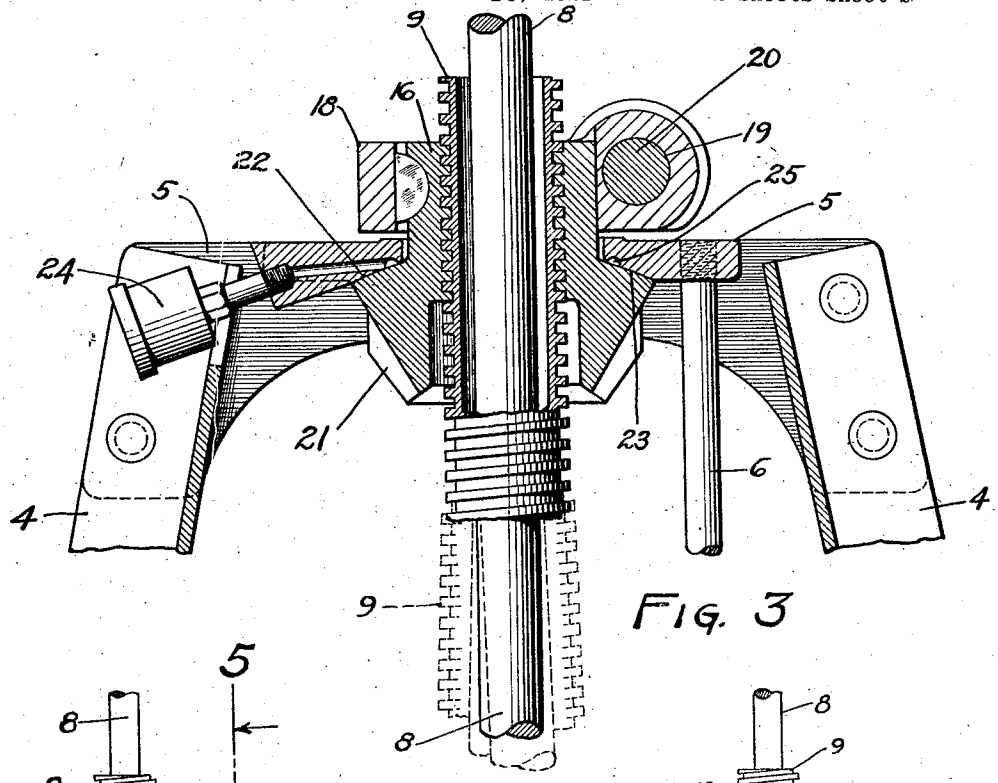


FIG. 3

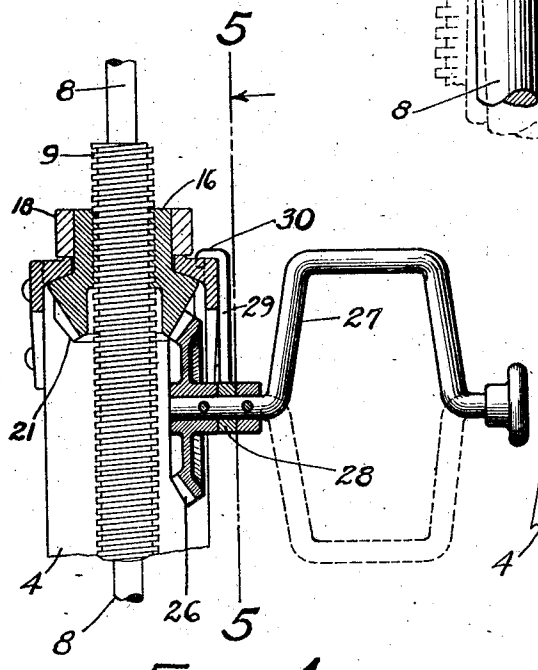


FIG. 4

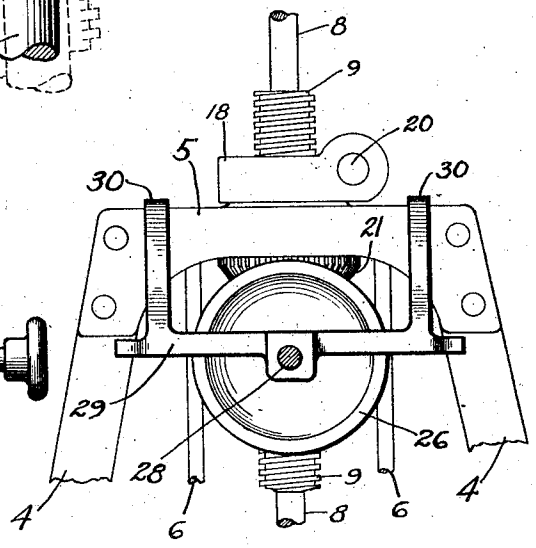


FIG. 5

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UNITED STATES PATENT OFFICE.

FRANK L. NEMEC, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO FEGLES CONSTRUCTION COMPANY, LIMITED, OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF CANADA.

MEANS FOR RAISING CONCRETE MOLDS.

Application filed November 14, 1921. Serial No. 515,121.

My invention relates to means for raising concrete molds and the object of my invention is to provide an operating mechanism for this purpose which will adjust or adapt itself automatically to the position assumed by its connections with the mold during the lifting operation. The rod on which the hollow screw slides sometimes gets out of alinement and twisted slightly so that a fixed bearing would cramp or bind but with my invention the bearing and operating means will adapt themselves to any slight tilt or inclination of the screw and rod and permit the mechanism to be easily operated at any point in the vertical movement of the mold.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification,

Figure 1 is a view, partially in section, of the upper portion of a concrete mold and the raising means therefor,

Figure 2 is a top view of the same,

Figure 3 is a detail view of the upper portion of the raising means, showing the raising mechanism,

Figure 4 is a detail view, showing the device which I prefer to employ for lowering or reversing the direction of movement of the screw on the rod,

Figure 5 is a sectional view on the line 5—5 of Figure 4.

In the drawing, 2 represents the mold for the concrete wall, movable vertically, as the concrete is poured and becomes set, adapting the mold for forming any desired height of wall. 3 represents a frame, mounted on said mold and provided with upwardly projecting rails 4 arranged to converge and having at the upper end a cap 5 secured by suitable means to the rails. Rods 6 are secured at one end in said cap and at their lower ends to a cross bar 7 which connects the rails 4 above the mold. 8 is a reinforcing rod embedded in the concrete and projecting above the same and 9 is a hollow screw adapted to slide on the rod 8 and mounted at its lower end in a plate 10 that is slidable vertically on the rod 6. Bolts 11 are mounted in said plate and depend therethrough and have springs 12 normally holding them in a raised position and on the lower ends of said bolts is an angle plate 13 to which dogs 14 are pivoted by suitable means, such as studs 15. These dogs are positioned to engage the rod 8 and lock the screw 9 on the rod. On the upper end of the screw I provide an internally threaded sleeve nut 16 having a collar 18 secured thereon provided with a socket 19 for an operating lever 20. The lower portion of said sleeve nut has a beveled gear 21 above which is a shoulder 22 that is slightly convex to fit a corresponding surface 23 in the cap 5, forming in effect a ball and socket bearing that is suitably lubricated through the oil cup 24 and a groove 25. This bearing allows the rails 4 and the screw and rod to rock or twist relatively and adjust themselves to the different positions of the work.

For the purpose of raising the screw 9 rapidly and obtaining a new adjustment on the reinforcing rod for raising the mold, I provide a bevel gear 26 mounted on a bit or drill stock 27 which has a bearing 28 in a frame 29 supported by hooks 30 on the cap plate 5. The bevel gear 26 engages the gear 21 and by operating the bit stock, the sleeve and screw will be operated to raise the screw quickly and enable the dogs to engage a fresh surface of the rod and continue the mold raising operation.

I have shown this invention adapted for use in raising a mold, but I do not confine myself to such use, as the device is also adapted for lifting or lowering purposes generally where a fixed upright column is employed, and it is desired to raise or lower a frame or other structure on said column.

I claim as my invention:

1. In combination, an upright column, a hollow screw thereon, means slidably connecting said column and screw, a nut internally threaded to engage said screw and having an inclined annular bearing surface, and a lifting frame having a rocking bearing on said surface.

2. In combination, an upright column, a hollow screw thereon, a clutch for connecting said column with said screw, a nut on said screw having an inclined bearing sur-

face and a gear below said surface, and a lifting frame having a rocking bearing on said surface.

3. In combination, a reinforcing rod, a hollow screw thereon, a clutch connected with said screw for engaging said rod, an internally threaded sleeve nut engaging said screw and a mold frame having a rocking bearing on said sleeve nut, said nut having means for revolving it rapidly to raise said screw.

4. In combination, an upright column, a hollow screw thereon, means slidably connecting said column and said screw, a nut internally threaded to engage said screw and having a bearing surface, a lifting frame suspended on said bearing surface and having freedom of oscillation thereon.

5. In combination, an upright column, a hollow screw thereon, means slidably connecting said column and said screw, a nut internally threaded to engage said screw and having a bearing surface, a lifting frame suspended on said bearing surface and having freedom of oscillation thereon, means for revolving said nut in one direction at a comparatively slow speed to raise said frame, and means for revolving said nut at a faster speed in the other direction to raise said screw on said column.

6. The combination with a reinforcing member, of a hollow screw mounted to slide thereon, means slidably connecting said member and said screw, a nut internally threaded to engage the threads of said screw, an operating means for said nut at the upper end thereof, said nut having a curved bearing surface below said operating means, a mold and means connected with said mold and seated on said curved bearing surface and free to rock thereon to allow said mold to adjust itself to the position of said screw and said reinforcing member.

7. In combination, an upright reinforcing member, a hollow screw encircling said member and movable laterally in relation thereto, a clutch connection between said member and screw, a sleeve-nut internally threaded to engage said screw, means associated with a part of said nut for rotating the nut to move the screw, and gears associated with another part of the sleeve-nut to move the screw.

8. In combination, an upright reinforcing member, a hollow screw encircling said member and having a clutch connection therewith, a sleeve-nut internally threaded to engage said screw, means associated with a part of said nut for rotating the nut to move the screw, and gears associated with another part of the sleeve-nut to move the screw at a faster speed than the other nut rotating means.

9. The combination with a reinforcing member, of a hollow screw mounted to slide thereon, means slidably connecting said member and said screw, a nut internally threaded to engage the threads of said screw, a gear on the lower portion of said nut and means for revolving said gear and nut, said nut having a bearing surface above said gear, a mold, and means connected with said mold and seated on said bearing surface and free to oscillate thereon to allow said mold to adjust itself to the position of said screw and said reinforcing member.

In witness whereof, I have hereunto set my hand this 28th day of October 1921.

FRANK L. NEMEC.