

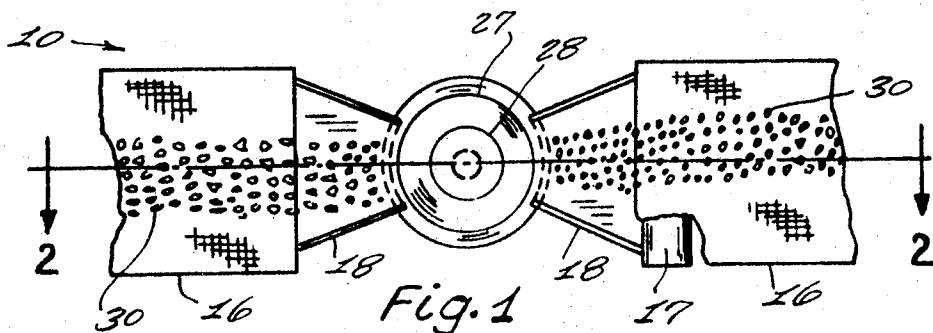
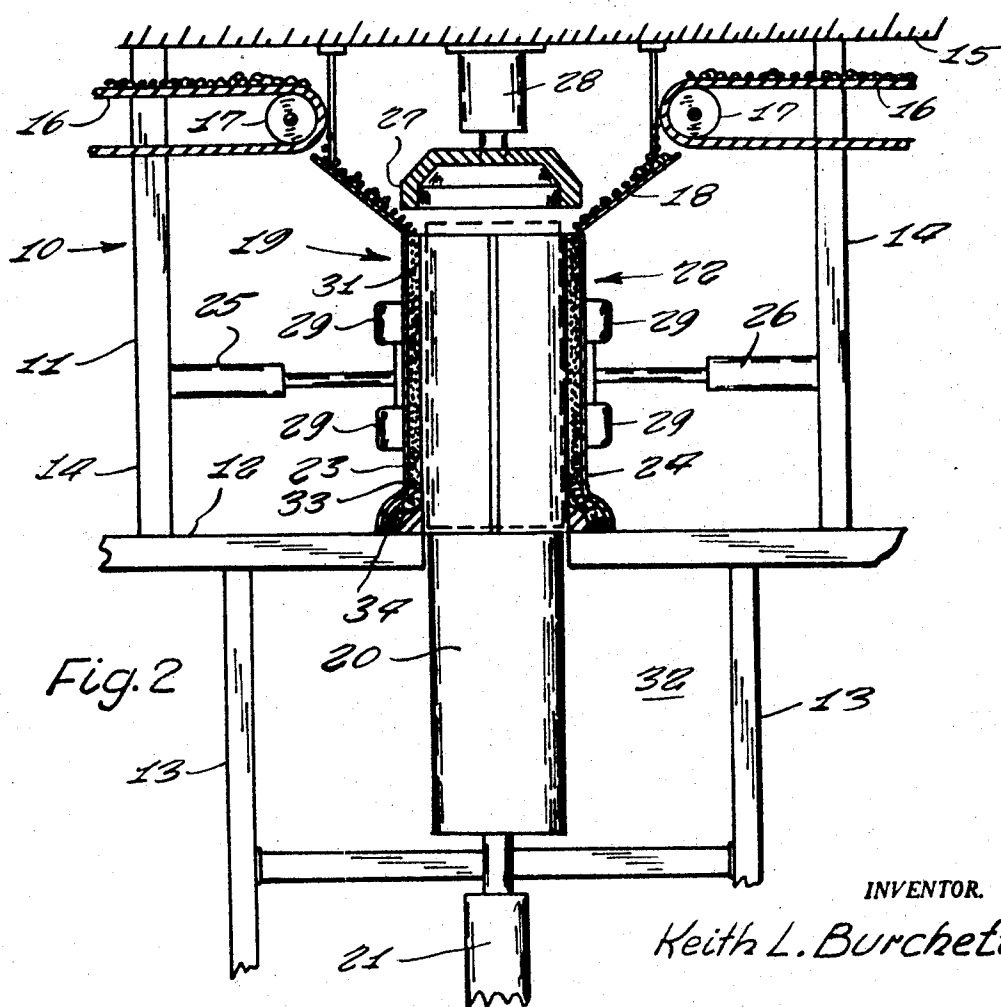
Aug. 5, 1969

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3,458,908

HYDRAULIC CONCRETE PIPEMAKING MACHINES

Filed March 22, 1967



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3,458,908 HYDRAULIC CONCRETE PIPEMAKING MACHINES

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Filed Mar. 22, 1967, Ser. No. 625,106
Int. Cl. B28b 21/16, 21/18
U.S. Cl. 25—31

3 Claims

ABSTRACT OF THE DISCLOSURE

A machine for making concrete pipe by employing a hydraulic pressure, the machine including conveyors for delivering concrete to a charging hopper placed above a pipe form assembly which includes an inside form, and outside form comprised of two halves and a press, the forms and press being hydraulically operated to mold the concrete into a pipe.

This invention relates generally to machinery for making concrete pipe. More specifically it relates to concrete pipe producing machines which employ hydraulic pressure.

A principal object of the present invention is to provide a machine for making concrete pipe by employing hydraulic pressure to move the components of a form into and out of a molding position, so as to remove a formed concrete pipe out of the machine after being produced.

Another object of the present invention is to provide a machine to make concrete pipe by hydraulic pressure.

Yet another object of the present invention is to provide a machine to make concrete pipe by hydraulic pressure and wherein the forms will be heavy enough to withstand the pressure from a top press to compact the concrete to any desired density.

Yet another object of the present invention is to provide a machine to make concrete pipe, and wherein the pipe may be oval, tapered, rectangular, square or round as preferred by the manufacturer.

Other objects of the present invention are to provide a machine to make concrete pipe with hydraulic pressure, which is simple in design, inexpensive to manufacture, rugged in construction, easy to use and efficient in operation.

These and other objects will be readily evident upon a study of the following specifications and the accompanying drawing wherein:

FIGURE 1 is a top plan view of the present invention, and

FIGURE 2 is a fragmentary sectional view taken along the line 2—2 of FIGURE 1.

Referring now to the drawing detail, the reference number 10 represents a machine to make concrete pipe with hydraulic pressure wherein there is a frame 11 which includes a platform 12 supported upon a plurality of vertical uprights 13, the platform 12 supporting there above a plurality of upright beams 14 which support an overhead beam 15 as shown in FIGURE 2 of the drawing. A plurality of conveyor belts 16 are each drawn across a roller 17 adjacent to the upper end of a charging hopper 18 which is located above a form assembly 19, centrally located upon the frame 11.

The form assembly 19 includes an inside form 20 of cylindrical configuration, and which is vertically movable by a hydraulic cylinder 21 between a molding and retracted position as shown, the assembly 19 further includes an outside form 22 comprised of two halves 23

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and 24 each of which is horizontally movable by means of hydraulic cylinders 25 and 26 respectively. A press 27 is located above the form assembly 19 and is movable downward by means of a hydraulic cylinder 28 secured to the underside of the overhead beam 15.

A plurality of vibrators 29 are mounted upon the sides of the outside form for the purpose of shaking down the concrete to prevent any air-spaces in the concrete pipe being formed.

In operative use concrete 30 is carried upon conveyors 16 and delivered to the hopper 18 into which the concrete drops, this concrete then being delivered to the hopper into a cylindrical configuration space 31 formed between the inside form 20 and the outside form 22 when the forms are in a molding position. As the concrete drops from the hopper into the molding space between the forms, the vibrators speed up this operation. After a proper amount of concrete is delivered into the space between the forms the press 27 descends and packs the same to form the pipe. After the concrete is packed the press 27 is raised to a filling position and the inside mold 20 is retracted downward into the pit area 32 while the side molds 23 and 24 of the outside mold 22 are withdrawn sidewardly outward. Thus all the molds and the press are moved hydraulically inward and outward. After the finished pipe is thus exposed by the retracted molds, the pipe 33 can be handled by lifting the same under the bell ring 34 and moving it to a place where it may be cured.

It is to be noted that the press would be set at a proper height in operation so to let the required amount of concrete into the pipe forming space, between the forms. It is to be further noted that hydraulic rams placed under the base ring could be used to force the base ring up at the same time the top press was pushed down. This would possibly create a better compactness at the bottom of the pipe, and is worthy of consideration.

Thus it has been shown a novel way to make concrete pipe with hydraulic pressure.

While various changes are made in the detailed construction it is to be understood that such changes will be in the spirit and scope of the present invention as is defined by the appended claims.

I claim:

1. In a machine to make concrete pipe, the combination of a frame, said frame supporting a plurality of hydraulic cylinders, said hydraulic cylinders having hydraulic rams carrying members of a form assembly and press to mold a concrete pipe, said frame including a platform above a pit, a plurality of upright beams supported upon said platform and an overhead beam upon the upper end of said upright beams, said platform having an opening therein for a vertically moving inside form, moving from said pit upward to a molding position, said upright beams supporting said hydraulic rams carrying component halves of an outside form, and said overhead beam supports a hydraulic cylinder having a ram carrying a press downwardly into operative position.

2. The combination as set forth in claim 1, wherein a plurality of conveyors are located above said form assembly, a charging hopper at the ends of said conveyors, said hopper being located above said form assembly for discharging concrete from said conveyors into a space between said outside and inside forms to form said concrete pipe.

3. The combination as set forth in claim 2, wherein

said outside form carries a plurality of vibrators to speed the movement of concrete between said forms.

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U.S. Cl. X.R.

249—144