No. 723,243. PATENTED MAR. 24, 1903.

C. R. COOK.

ROTARY CONCRETE FLUME MACHINE.

APPLICATION FILED JUNE 23, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

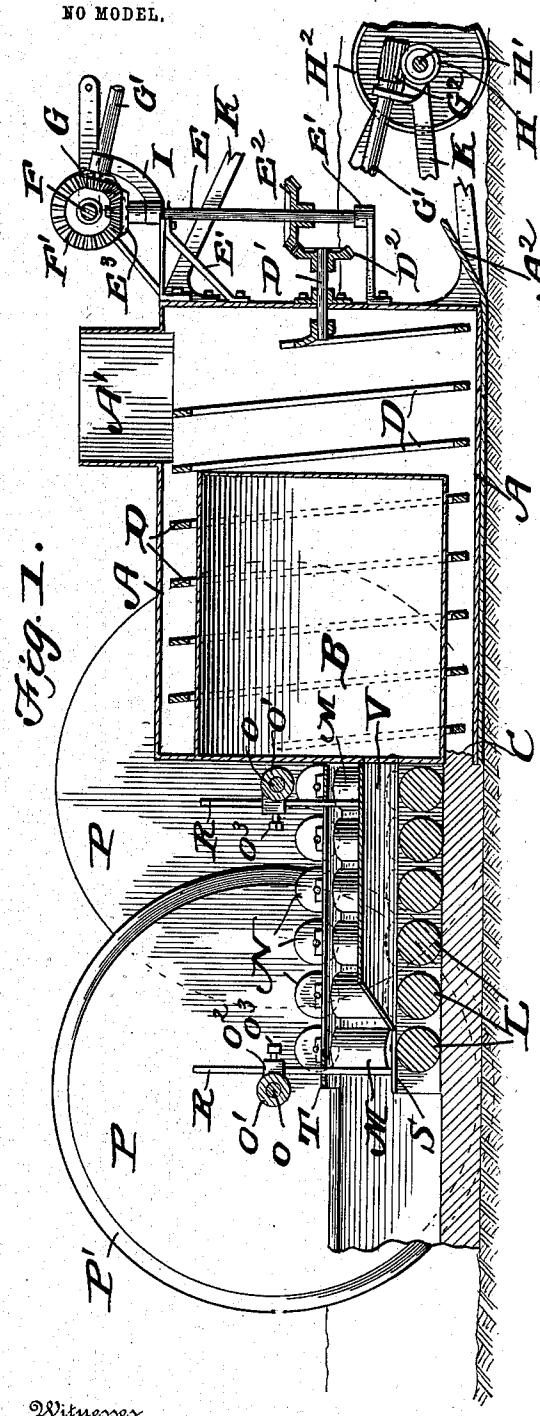


Fig. 1.

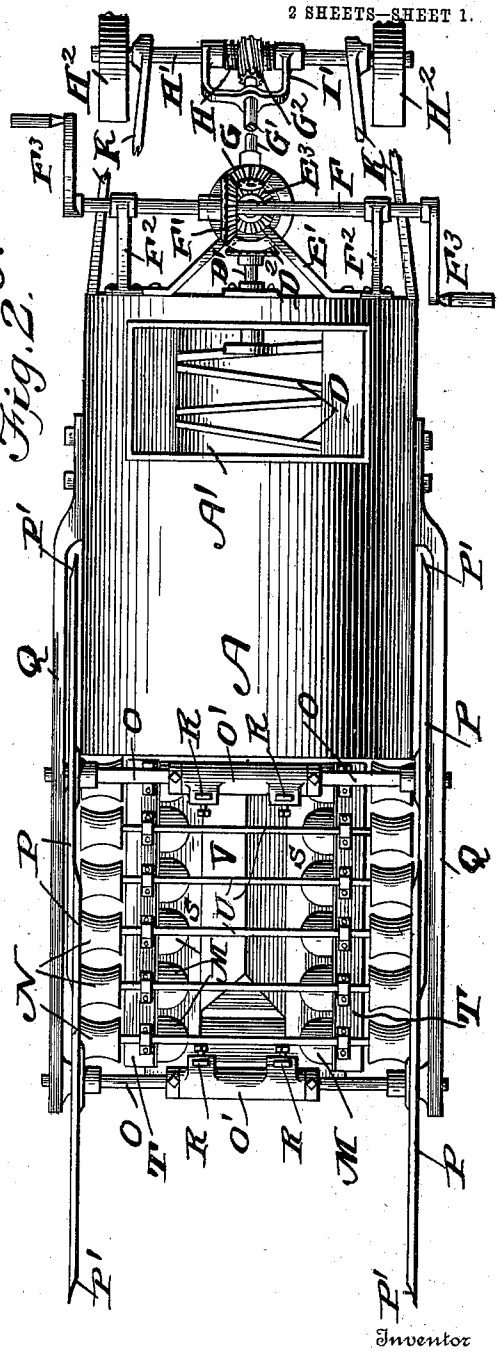


Fig. 2.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3

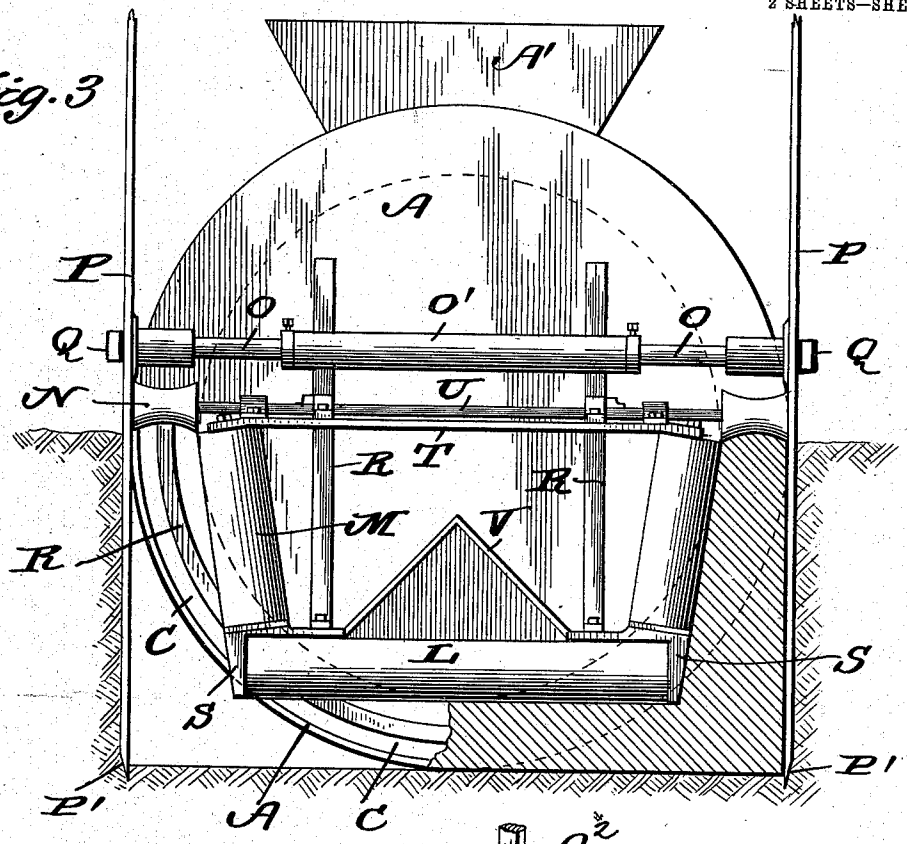
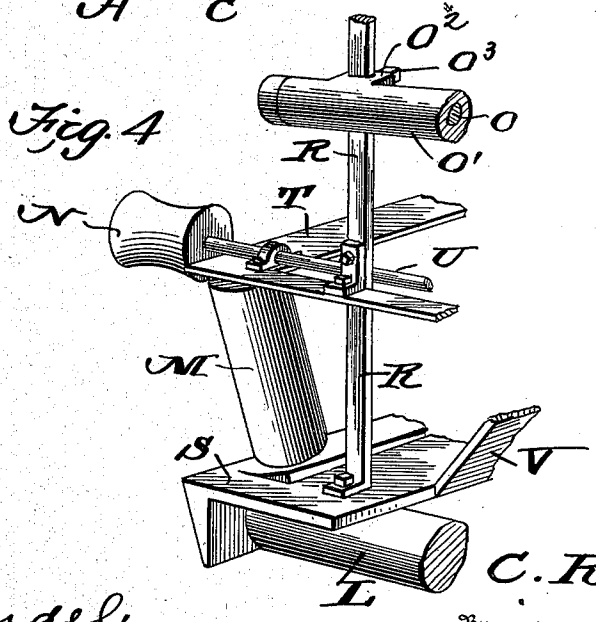


Fig. 4



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UNITED STATES PATENT OFFICE.

CHARLES RUSSELL COOK, OF ETHANAC, CALIFORNIA.

ROTARY CONCRETE-FLUME MACHINE.

SPECIFICATION forming part of Letters Patent No. 723,243, dated March 24, 1903.

Application filed June 23, 1902. Serial No. 112,923. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RUSSELL COOK, a citizen of the United States, residing at Ethanac, in the county of Riverside and State of California, have invented a new and nseful Rotary Concrete-Flume Machine, of which the following is a specification.

This invention is an improved machine for making and laying concrete flumes, the object being to provide a simple and efficient machine which can be moved along within a trench and simultaneously lay and pack concrete upon the bottom and against the sides of the said trench, thereby providing a concrete flume.

With this object in view the invention consists in the novel features of construction, combination, and arrangement, all of which will be fully described hereinafter, and pointed out in the claims.

In the drawings forming part of the specification, Figure 1 is a longitudinal sectional view of a machine constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is an end view, a portion of the concrete flume being shown in section. Fig. 4 is a detail perspective view illustrating the manner of adjusting the rollers.

In carrying out my invention I employ a cylindrical hopper A, having a feed-opening A′ produced in the top thereof adjacent to one end, said hopper being adapted to receive concrete or other material from which the flume is to be formed, said material being introduced in the opening A′. A closed drum or cylinder B is arranged within the hopper A and secured to the inner side of the rear end, and the said rear end of the hopper has an opening C produced therein, said opening being produced in the lower half of the said rear end and in the space between the drum B and the cylindrical sides of the hopper A, said opening C being arranged for the purpose of discharging the concrete into the trench or ditch, and in order to accomplish this I arrange a spiral blade D within the hopper, the main portion of said spiral blade surrounding the drum or cylinder B and working in the annular space between the said drum and hopper. The rotation of this spiral blade causes the concrete or other material to be fed rearwardly through the opening C, and the spiral blade D is operated by a shaft D′, projecting through the forward end of the cylindrical hopper and carrying a beveled gear D^2, which meshes with the beveled gear E^2, mounted upon the shaft E, journaled in brackets E′, attached to the front end of the cylindrical hopper, the said shaft E carrying a beveled gear E^3 at its upper end, which is arranged to mesh with the beveled gear F′, mounted upon a shaft F, journaled in brackets F^2 and provided with operating crank-handles F^3. By turning the crank-handles F^3 the spiral blade is rotated. The concrete or other material is forced through the semicircular opening C at the rear end of the hopper. A beveled gear G also meshes with the beveled gear E^3, said beveled gear G being mounted upon the rear end of a shaft G′, the forward end of said shaft carrying a worm-wheel G^2, which meshes with the worm H, mounted upon the front axle H′, which carries the ground-wheels H^2. The upper end of the shaft G′ is journaled in the bracket I, while the lower and forward end is journaled in the bracket I′, carried by the front axle H′. The front axle H′ is journaled between the forward ends of the forwardly-projecting bars K, which are rigidly connected at their rear ends to the cylindrical hopper A. By means of this construction as the handles are revolved to feed the concrete from the hopper the machine will be moved forwardly in the trench or ditch, thereby enabling the machine to spread the concrete or other material upon the bottom and along the sides of the ditch or trench as the said machine is moved forwardly, and in order to securely pack the concrete upon the bottom and against the sides of the ditch or trench I employ the bottom rollers L, side rollers M, and top rollers N. These rollers are journaled within and upon a frame supported by the axles O of the wheels P, said axles being journaled between the rearwardly-extending beams Q, attached at their forward ends to the sides of the cylindrical hopper A. The edges of the wheel P are beveled, as shown at P′, and overlap each other, the purpose of said wheels being to provide a smooth bare surface against which the concrete can be packed, and it will be noted that the said wheels extend from the rear end of the cylindrical hopper A to a point

considerable in the rear thereof. Each axle O has a sleeve O' arranged thereon, each sleeve having a guide O^2, through which works the upright bars R, said upright bars R supporting the angle-beams S at their lower ends and between which the bottom rollers L are journaled. The bars R also support the horizontal frame T, and between the horizontal frame T and the angle-beams S the side rollers M are journaled, said rollers being preferably arranged at a slight angle, as most clearly shown in Fig. 3, and journaled upon the top of the frame T are the shafts U, carrying the top rollers N, said rollers being preferably grooved in order to impart a round finish to the upper edges of the flume. A suitable shield V connects the angle-beams S and prevents dirt or other material falling upon the concrete while being packed by the machine. The frame carrying the rollers is adjustable vertically by means of the set-screws O^3, so that the concrete can be packed to any desirable extent.

It will thus be seen that I provide an exceedingly simple and highly efficient machine for distributing concrete or other material eveuly along the bottom and sides of a ditch or trench and simultaneously packing said material upon the bottom and against the sides, thereby providing a concrete flume as the machine is moved along in the ditch or trench.

A suitable fender A^2 is arranged at the forward end of the cylindrical hopper to prevent the forward movement of the hopper in case any obstruction is encountered.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the hopper, of means for moving same forwardly, a feeding device arranged within the hopper for projecting material through an opening produced in the rear of the hopper, and a series of rollers arranged at the rear of the hopper and adapted to pack the material fed therefrom, substantially as specified.

2. The combination with the hopper, of a spiral feeding-blade arranged therein, a propelling device arranged in advance of the hopper, means for simultaneously operating the propelling device, and spiral feeding-blade, and the rollers arranged at the rear of the hopper adapted to pack the material fed therefrom, substantially as specified.

3. The combination with the hopper having a closed drum or cylinder arranged therein, and also having a semicircular opening in the rear end of said hopper, of a spiral feeding-blade arranged within the hopper and surrounding the closed drum or cylinder and adapted to feed the material through the semicircular opening, and the propelling means connected to the hopper and operatively connected to the spiral blade, substantially as described.

4. The combination with a hopper, having a semicircular opening in the rear end thereof, of the beams extending rearwardly from the hopper, the solid wheels arranged between the beams and connected to the said hopper, the supporting-frame adjustably connected to the axles of the said wheels, and pressing-rollers carried by said supporting-frame, substantially as described.

5. The combination with the hopper having the rear opening therein, the wheels mounted upon the said axles provided with beveled edges and overlapping each other, the adjustable frame connected to the said axles, the bottom rollers, the side rollers and the top rollers carried by the said frame, substantially as specified.

CHARLES RUSSELL COOK.

Witnesses:
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