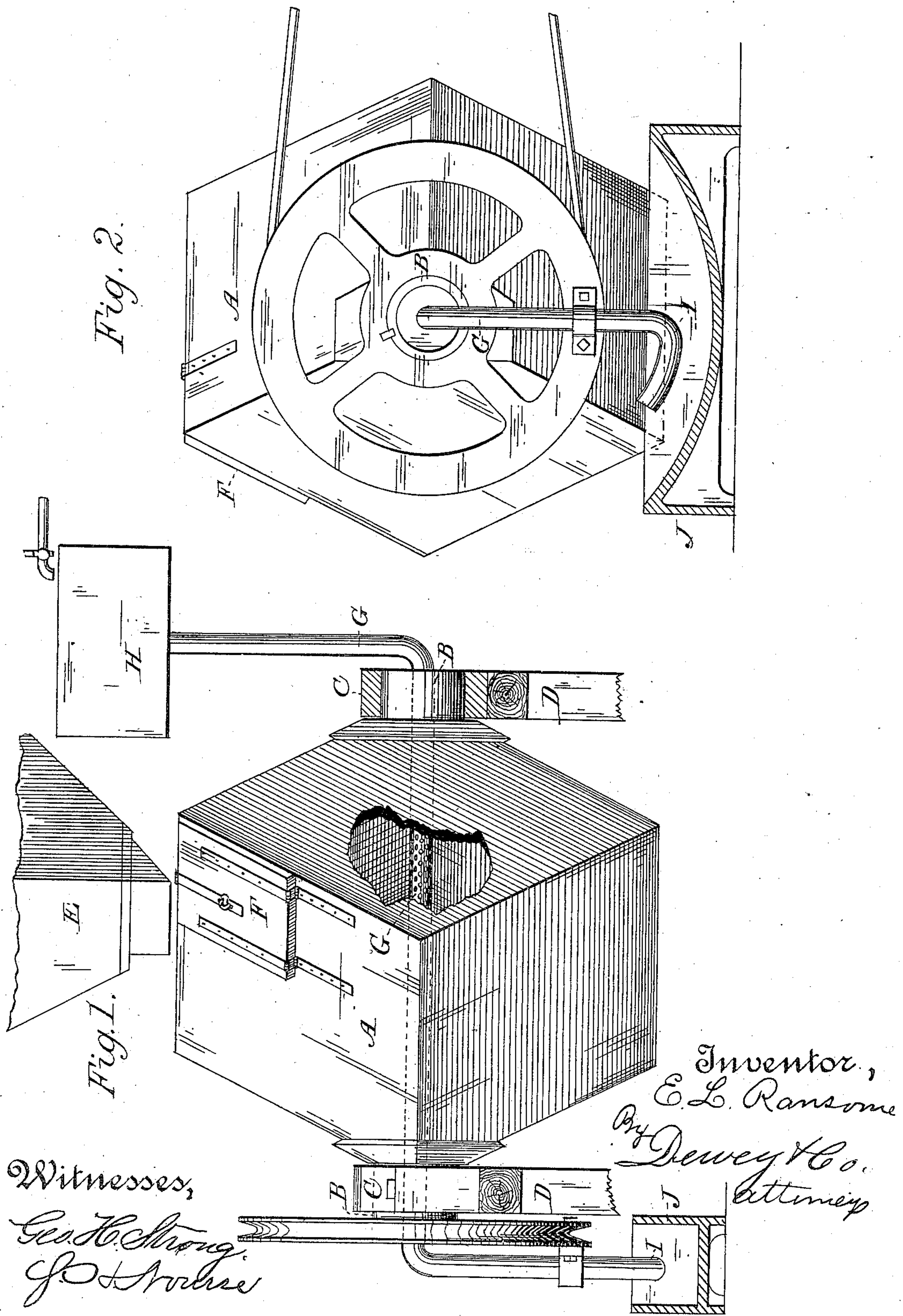


(No Model.)

E. L. RANSOME.  
MANUFACTURE OF CONCRETE.

No. 306,522.

Patented Oct. 14, 1884.





# UNITED STATES PATENT OFFICE.

ERNEST LESLIE RANSOME, OF SAN FRANCISCO, CALIFORNIA.

## MANUFACTURE OF CONCRETE.

SPECIFICATION forming part of Letters Patent No. 306,522, dated October 14, 1884.

Application filed March 7, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST L. RANSOME, of the city and county of San Francisco, and State of California, have invented an Improvement in the Manufacture of Concrete; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in the manufacture of concrete; and it consists of a means for first mixing the materials of which the concrete is formed in a dry state, then adding water gradually while the operation is continued until the mixing is sufficiently intimate and complete.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side elevation of a revolving concrete-mixer, showing a means for introducing water during the operation. Fig. 2 is a view showing a device for introducing water intermittently.

A is the mixing-box, which is in the form of a hollow cube of heavy plank mounted upon a shaft or trunnions B, which are strongly secured to opposite corners of the box and turn in journal-boxes C upon a stout frame, D. Above the center of this box a hopper, E, is supported by suitable frame-work, its discharge-opening being at such a point that an opening, F, in the side of the box may be made to stand directly beneath the hopper when the box is turned to the proper position, and by opening the hopper-gate and the cover of the opening in the box a charge of material suitable for making the concrete may be let into the box, which is then closed and revolved slowly until the dry material within has been pretty well mixed. One or both of the trunnions B may be made hollow, and a pipe, G, extends into and across the box inside. This pipe may be open at the end or perforated with holes through which numerous small jets of water may be discharged. The box being only partially filled with the materials for a charge, the latter will slide down continually as the box revolves, exposing new surfaces to the pipe beneath which it moves. The outer end of the pipe may extend upward to a water-tank, H, with a cock by which a constant regular supply may be introduced, as shown in Fig. 1, in which case the pipe will be fixed, the trunnions turning about its horizontal

part; or the pipe may be fixed to revolve with the mixing-box, and have its outer end turned, as shown at I, Fig. 2. In this case a tank, J, of water or other liquor—such as lime-water—is placed below it at such a point that the curved end will just dip into the water in the tank at each revolution of the mixing-box, and the water taken up by the pipe I will run down into the pipe G as the box revolves, thus discharging a small quantity intermittently into the mass until it is sufficiently moistened and mixed.

It will be manifest that any number of arms to the water-pipe may be employed with their outer ends constructed so as to scoop up water—as two, four, or more, to suit the necessities of the mixing.

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

1. A concrete-mixing apparatus consisting of a box journaled so as to turn upon trunnions fixed at its opposite corners, in combination with a water-supply pipe passing across the box from its trunnions, said pipe being connected with a supply-tank, substantially as herein described.

2. A concrete-mixing apparatus consisting of a box journaled to turn upon trunnions fixed to its opposite corners, a perforated pipe extending across the interior of the box at or near the line of the trunnions, passing through one or both of them, turned at right angles with one or more radial branches, and having curved or scoop-shaped sections at the outer end, in combination with a tank into which the arms dip at the lowest point as the mixer revolves, substantially as herein described.

3. A means for supplying water to the material within a vertically-revolving concrete-mixer, consisting of a pipe extending across the interior of the mixer on a line at or near its axis through which it passes, and is connected with a source of supply, substantially as herein described.

In witness whereof I have hereunto set my hand.

ERNEST LESLIE RANSOME.

Witnesses:

C. D. COLE,  
J. H. BLOOD.