P. L. BLYSTONE.

MORTAR MIXER.

APPLICATION FILED MAR. 11, 1909.

925,744. Patented June 22, 1909.

FIG_1_

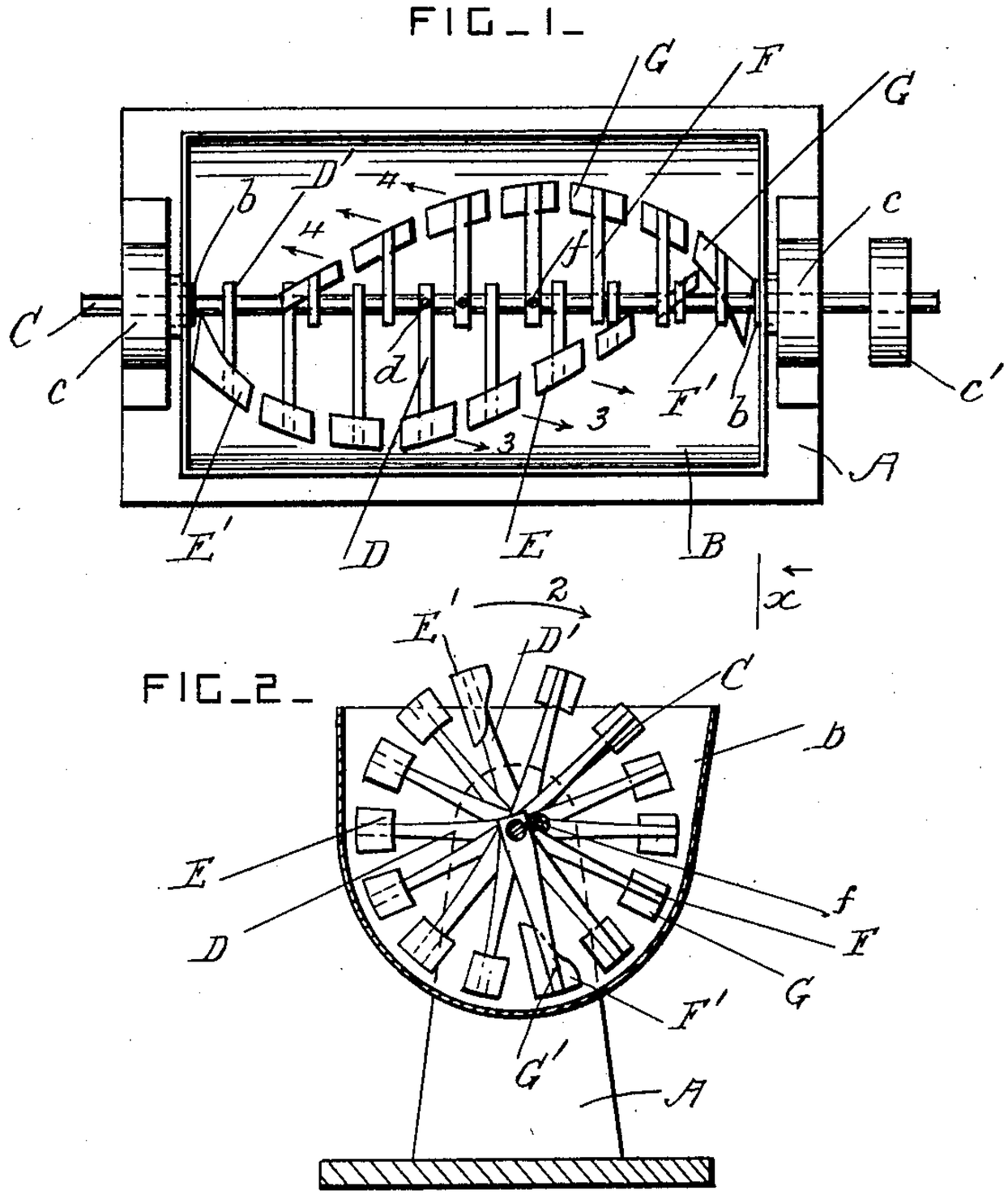

FIG_2_

Witnesses

W. E. Allen.

E. W. Bond

Inventor

Perry L. Blystone,

By Herbert W. J. Jenner.

Attorney.

UNITED STATES PATENT OFFICE.

PERRY L. BLYSTONE, OF CAMBRIDGE SPRINGS, PENNSYLVANIA.

MORTAR-MIXER.

No. 925,744. Specification of Letters Patent. Patented June 22, 1909.

Application filed March 11, 1909. Serial No. 482,747.

To all whom it may concern:

Be it known that I, PERRY L. BLYSTONE, a citizen of the United States, residing at Cambridge Springs, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Mortar-Mixers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for mixing mortar, concrete and other similar substances; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a plan view of the mixer. Fig. 2 is a cross-section, taken on the line *x*—*x* in Fig. 1.

A is a supporting frame of any approved construction.

B is a mixing trough or vessel mounted in the frame A on trunnions *b*. This trough is provided with mechanism for tilting it over to empty out its contents, and for holding it stationary while the machine is at work. This tilting mechanism is not shown in the drawings, as it is of any approved construction.

C is a driving shaft mounted to revolve in the trough and journaled in bearings *c*, or in any other suitable bearings, and provided with a driving wheel *c'* or other suitable driving devices for revolving it.

D are arms secured to the shaft C and arranged radially at suitable distances apart in the form of a spiral. The arms D are adjustable both longitudinally and circumferentially on the shaft, and they are provided with screws *d* or other approved locking-devices for securing them in position. The screws *d* are set-screws which are screwed into the hub portions of the arms, and which engage with the shaft.

E are blades secured to the outer end portions of the arms D and arranged step by step upon a regular spiral curve.

F are arms similar to the arms D. These arms F are secured to the shaft C by screws *f*, and they are provided with blades G at their outer end portions. The arms F are arranged alternately of the arms D, and in the form of a spiral which turns in the opposite direction from the aforesaid spiral, and the blades G are inclined in the opposite direction from the blades E with reference to the axis of the shaft. The spiral formed by one series of blades is similar to a right-hand screwthread of large pitch, and the spiral formed by the other series of blades is similar to a left-hand screwthread.

D' is an end arm for the series of arms D, and it is provided with a scraper-blade E' which works against one end of the trough and which is larger than the blades E.

F' is an end arm for the series of arms F, and it is provided with a large scraper-blade G' which works against the other end of the trough.

The end arms D' and F' project in diametrically opposite directions, and the series of arms D and F project from around the shaft, one series projecting from one half of its periphery and the other series from its other half.

The shaft is driven in the direction of the arrow 2, so that the material in the trough is moved in the direction of the arrows 3 by the blades D and D', and in the direction of the arrows 4 by the blades G and G'. This movement back and forth of the material in different directions at different parts of its mass results in a very thorough mixture of the contents of the trough, and the trough is emptied by tilting it over as often as desired.

What I claim is:

1. In a mixer, the combination, with a mixing vessel, and a single driving shaft journaled therein; of two radial arms which project at diametrically opposite points from the shaft adjacent to the ends of the vessel, said end arms being provided with end blades inclined in opposite directions to the axis of the shaft, a series of radial arms secured around one-half of the periphery of the shaft between the said end arms and provided with blades arranged step by step on a curve of one direction and at an angle corresponding to one end blade, and a second series of radial arms secured around the other half of the periphery of the shaft alternately of the aforesaid arms and provided with blades arranged step by step on a curve of the reverse direction to the aforesaid curve and at an angle corresponding to the other end blade.

2. In a mixer, the combination, with a mixing vessel, and a driving shaft journaled therein; of two radial end arms which project at diametrically opposite points from the shaft, said end arms being provided with

scraper-blades arranged adjacent to the ends of the vessel and inclined in opposite directions to the axis of the shaft, a series of radial arms secured around one half of the periphery of the shaft between the said end arms and provided with blades arranged step by step on a curve of one direction and at an angle corresponding to one scraper blade, and a second series of radial arms secured around the other half of the periphery of the shaft alternately of the aforesaid arms and provided with blades arranged step by step on a curve of the reverse direction from the aforesaid curve and at an angle corresponding to the other scraper-blade.

In testimony whereof I have affixed my signature in the presence of two witnesses.

PERRY L. BLYSTONE.

Witnesses:

J. A. BOLARD,

A. H. DRAKE.