No. 829,561. PATENTED AUG. 28, 1906.

C. S. WERT.

CONCRETE MIXER.

APPLICATION FILED MAR. 2, 1905.

2 SHEETS—SHEET 1.

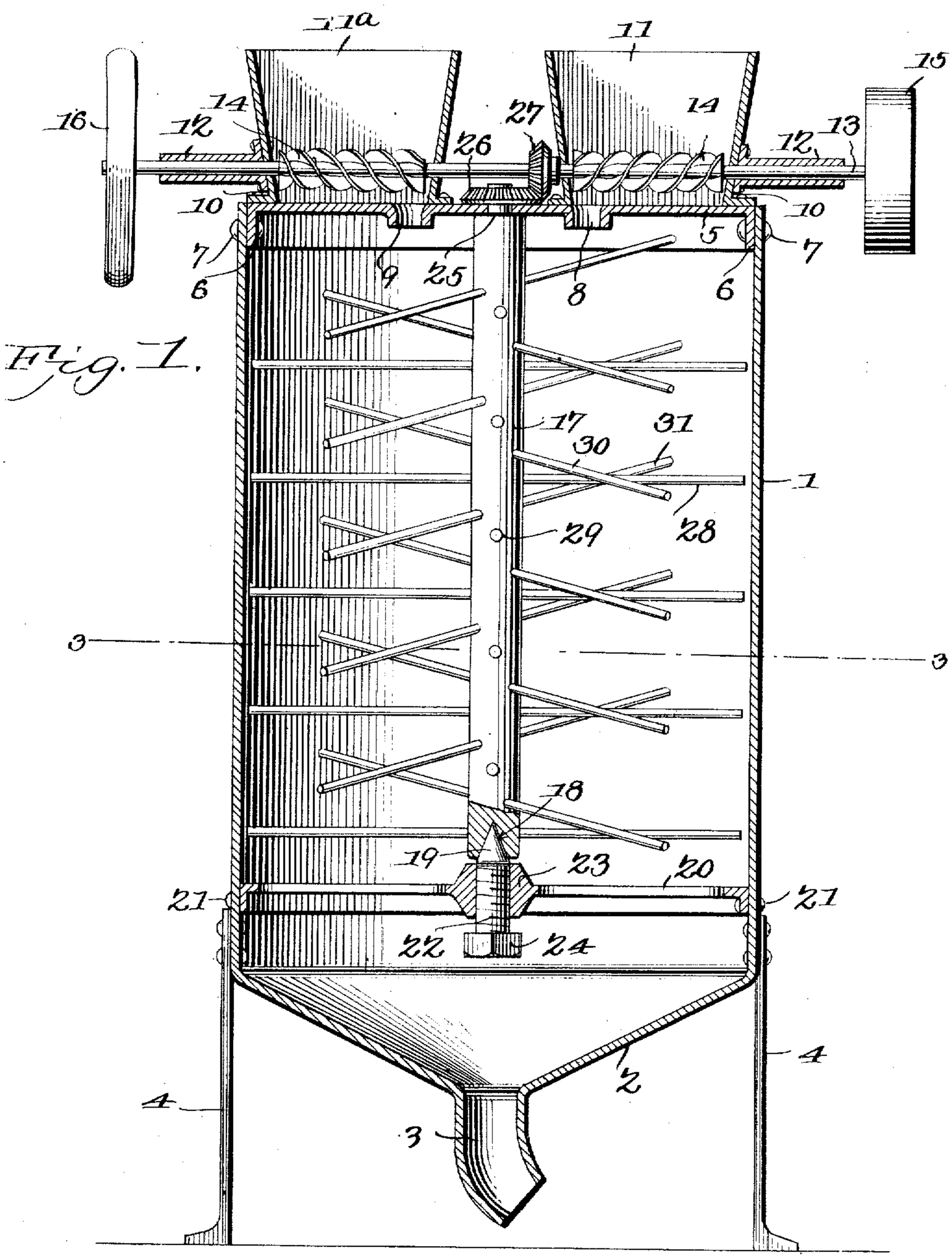

Fig. 1.

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2 SHEETS—SHEET 2

Fig. 2.

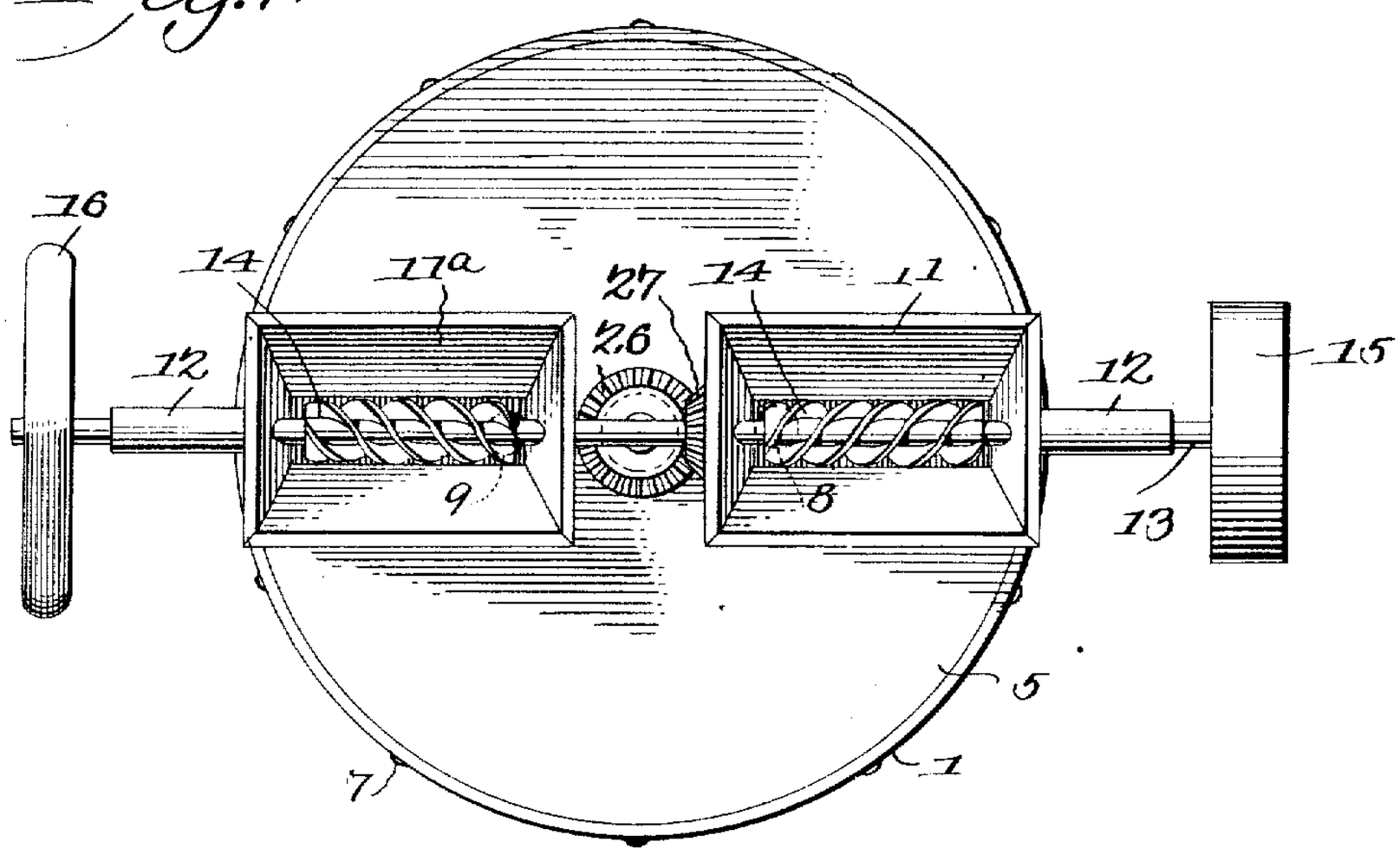
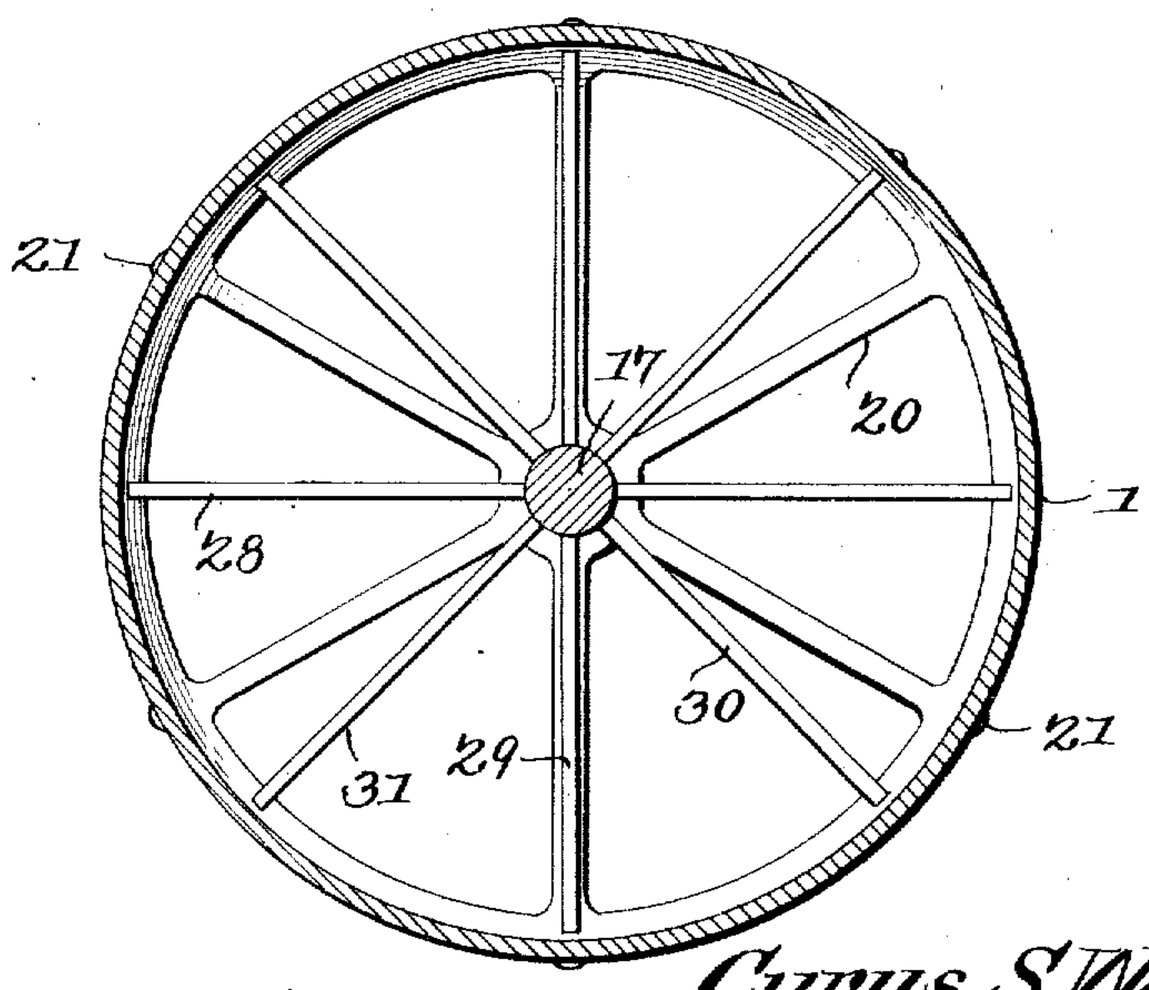


Fig. 3.



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UNITED STATES PATENT OFFICE.

CYRUS S. WERT, OF KENDALLVILLE, INDIANA.

CONCRETE-MIXER.

No. 829,561. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed March 2, 1905. Serial No. 248,137.

To all whom it may concern:

Be it known that I, CYRUS S. WERT, a citizen of the United States, residing at Kendallville, in the county of Noble and State of Indiana, have invented a new and useful Concrete-Mixer, of which the following is a specification.

This invention relates to concrete-mixers.

The object of the invention is in a ready, rapid, thoroughly-feasible, and practical manner to effect mixing of sand and cement in such manner as that the resulting product will be of uniform color, thereby obviating the presentation of varicolored articles, such as would result where the ingredients are not initially and thoroughly incorporated.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a concrete-mixer, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in vertical longitudinal section of a concrete-mixer embodying one form of the invention. Fig. 2 is a top plan view. Fig. 3 is a horizontal sectional view taken on the line 3 3, Fig. 1.

As will be noted by reference to the drawings, the apparatus shown in each of Figs. 1 to 3 is of the vertical type, and in each there is a feature common to both—namely, that there is a cylinder provided within which is arranged a shaft carrying radially and obliquely disposed mixing-arms which operate to agitate and stir up the sand and cement as it passes through the apparatus and thereby cause a thorough admixture before discharging.

Referring to the drawings, 1 designates a cylinder which may be of any size and is provided with a hopper-shaped bottom 2, terminating in a centrally-disposed discharge-mouth 3. In this form of the invention the cylinder is stationary and is supported upon suitable legs 4, bolted or otherwise secured to the cylinder.

The upper end of the cylinder is closed by a head 5, which in this instance is shown as provided with a circumferential flange 6, through which and the cylinder pass bolts or rivets 7 for holding the parts properly assembled. At a point near the center of the head and preferably in alinement with each other are two feed-spouts 8 and 9, and supported by the head, as by being riveted thereto at 10, are two hoppers 11 and 11^a, which, as shown in Fig. 2, are rectangular in outline. Each of the hoppers has secured to its outer side a bearing 12, in which is journaled a shaft 13, carrying two screw conveyers 14, the flights of one conveyer being pitched to the right and those of the other to the left. This shaft carries on one end a pulley 15, around which will pass a belt driven from a suitable source of power and upon the other shaft is mounted a fly-wheel 16. Where the shaft is driven from power, as by means of a belt, the fly-wheel may be omitted; but where the shaft is to be driven by hand-power a fly-wheel will be employed and the pulley 15 will be removed and be supplemented by a crank.

Mounted centrally and vertically of the cylinder is a shaft 17, the lower end of which is provided with a cone-socket 18, with which engages a cone-shaped bearing 19, carried by a grid 20, secured interiorly of the cylinder, as by bolts 21. The cone-bearing forms a part of a bolt 22, which is threaded in a hub or enlargement 23 at the center of the grid and has its lower end provided with a head 24, by which it may be adjusted to compensate for any wear of the socket. The upper end of the shaft is reduced, as at 25, and projects upward through the head and has secured to it exteriorly of the head a bevel-gear 26, which meshes with a similar gear 27, carried by the shaft 13. The shaft 17 is provided at spaced intervals in its length with four series of orifices, two of which extend at right angles to the vertical axis of the shaft and the other two series obliquely to the axis at opposite angles, and these four series of openings are engaged, respectively, by mixing-arms 28, 29, 30, and 31, the first two named series of arms being disposed at right angles to the vertical axis of the shaft and the last two at oppositely-disposed angles relatively thereto. These arms may be of any preferred contour in cross-section and are herein shown as circular, are terminally disconnected, and extend approximately to the walls of the cylinder, thereby to insure the positive mixing of the concrete ingredients supplied to the hoppers.

In the operation of this invention cement will be supplied, say, to the hopper 11, and the sand to the hopper 11^a, whence these ingredients will be forced by the respective conveyers to the feed-spouts 9, down through

which they will escape onto the mixing-arms. As the shaft 17 is driven at a relatively high rate of speed it will be seen that the materials will be thoroughly mixed and agitated, and by the time they have reached the hopper 2 they will be perfectly incorporated. From the hopper they pass out through the discharge-spout 3 to the place of use.

Having thus described the invention, what is claimed is—

In a concrete-mixer, the combination with a casing, a head secured thereto and provided near its center with feed-spouts, hoppers carried by the head, a driven shaft journaled in the hoppers and carrying right and left hand threaded conveyers that feed toward the spouts, a vertical shaft arranged within the casing and driven from the worm-shaft, and radially and obliquely disposed mixing-arms carried by the vertical shaft.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CYRUS S. WERT.

Witnesses:
DANIEL ROUSH,
AUGUST KURTZ