

E. F. BOLTE.
CONCRETE MIXER.
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1,045,117.

Patented Nov. 26, 1912.

Fig. 2

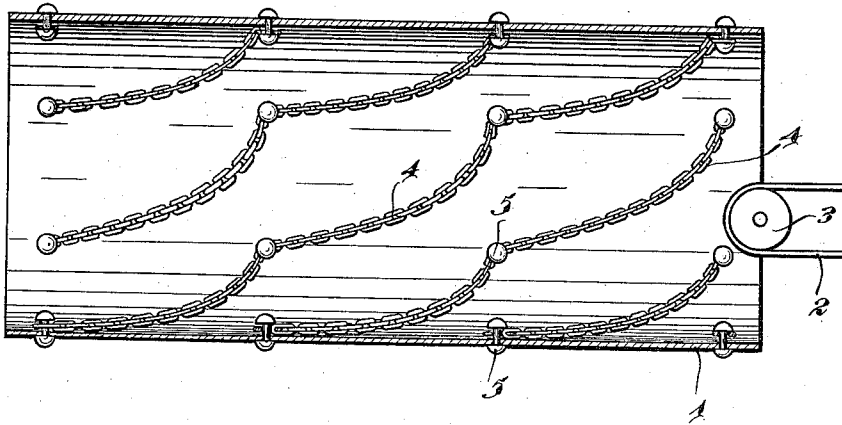
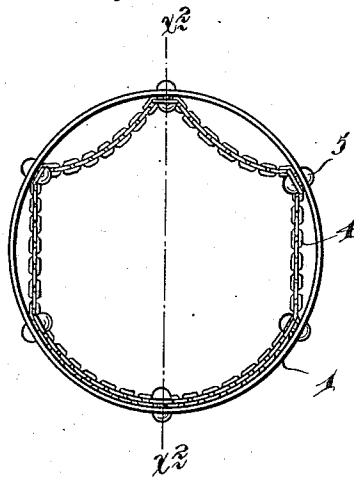


Fig. 1



Witnesses:

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UNITED STATES PATENT OFFICE

EDWARD F. BOLTE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO THEODORE H. BOLTE, OF KEARNEY, NEBRASKA.

CONCRETE-MIXER.

1,045,117.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD F. BOLTE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Concrete-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.

My invention relates to concrete mixers, and generally, to that type wherein approximately horizontal rotary drums are used to mix together cement, sand and gravel or rock.

Generally stated, the invention consists in providing the drum on its interior surface with one or more cables, preferably in the form of chains, connected thereto at certain points, with their main portions free for movements on the inner surface of the drum.

The invention is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is an end elevation showing a drum provided with chains in accordance with my invention; and Fig. 2 is a vertical section taken on the line $x^2 x^2$ of Fig. 1 and diagrammatically illustrating a portion of the carrier for delivering materials to be mixed, into the receiving end of the drum.

The numeral 1 indicates an approximately horizontal rotary drum mounted and driven in any suitable way, not necessary for the purpose of this case to consider.

The numeral 2 indicates a conveyer belt which runs over a roller 3 and over other suitable guiding and driving means. This belt forms no part of the present invention but serves to illustrate a means for delivering cement, sand, and gravel or rock into the receiving end of the drum.

A multiplicity of chains 4 are connected to the interior of the drum, as shown by heavy rivets 5. These several chains have a general spiral arrangement and are attached to the drum at several points, as described, and are given considerable slack between the different points of attachment, so that the loose portions of the chains are adapted to move on the inner surface of the drum

and to and from engagement with the inner surface of the drum. With this arrangement of the chains, when the drum is rotated, the materials to be mixed in the drum will be continuously carried upward on the rising side of the drum and continuously dropped back and continuously worked toward the delivery end of the drum. The chains at the lower portion of the drum, will, by the action of gravity, and further, by the weight of the materials engaged therewith, be tightly pressed against the surface of the drum. As they move upward, the chains will not only raise the material, but will pass through a certain portion of the same and thereby very greatly increase the mixing efficiency of the drum under rotation. The chains at the upper part of the drum will, by gravity, be caused to fall away from the drum.

Under rotation of the drum, the chains, because of their slack and flexibility, partake of various different movements which keep themselves and the surface of the drum clean, and thereby effectually prevent the cement and commingled materials from adhering to the inner surface of the drum. This latter noted function is probably the most important function performed by the chains, but the other functions noted are highly important. In describing the arrangement of the chains or cables on the inner surface of the drums, it has been stated, that there are a plurality thereof, but, of course, a single chain might be run backward and forward to afford a multiplicity of flexible lifting flights, and this would be, in effect, a plurality thereof. Also, a single chain arranged to form a single flight might possibly be found serviceable, and this would be within the scope of my invention.

Chains afford by far the most efficient form of flexible flight and cleaning devices, but any other form of flexible cable, such, for instance, as wire rope, might, in some instances, be employed to advantage, and such an arrangement would also be within the scope of my invention, although not the equivalent of the chains.

What I claim is:

1. In a device of the kind described, a rotary drum having cables attached to the inner surface of the shell of the said drum with sufficient slack between points of at-

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tachment to permit the engagement of the intermediate portions thereof with the shell of said drum, said cables traveling with the shell of said drum, substantially as described.

2. In a device of the kind described, a rotary drum provided on its inner surface with spirally arranged cables attached thereto at different points longitudinally of the drum, and with sufficient slack between points of attachment to permit the engagement of the intermediate portions thereof with the shell of said drum, the said cables serving as lifting flights and scraping the inner surface of the drum.

3. In a device of the kind described, the

combination with an approximately horizontal rotary drum, of chains attached to the inner surface of the shell of said drum at different points longitudinally thereof and with sufficient slack between the points of attachment to permit the engagement of the intermediate portions thereof with the shell of said drum, said chains traveling with the shell of said drum, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD F. BOLTE.

Witnesses:

HARRY D. KILGORE,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
