

(No Model.)

E. L. RANSOME.  
CONCRETE MIXING MILL.

No. 512,663.

Patented Jan. 9, 1894.

Fig. 1.

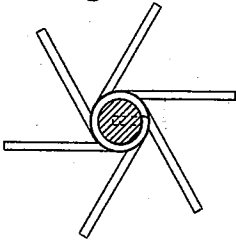


Fig. 2.

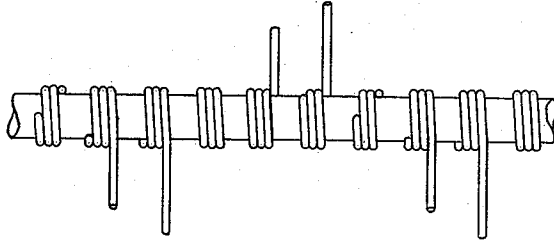


Fig. 3.

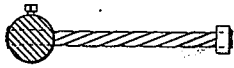


Fig. 4.

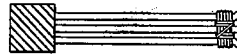
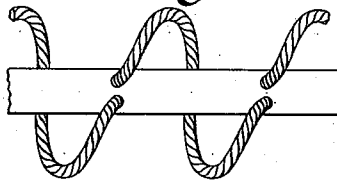


Fig. 5.



Fig. 6.



Witnesses  
Geo. Kelley.  
Harry P. Ingerson.

Inventor

Ernest Leslie Ransome

# UNITED STATES PATENT OFFICE.

ERNEST LESLIE RANSOME, OF OAKLAND, CALIFORNIA.

## CONCRETE-MIXING MILL.

SPECIFICATION forming part of Letters Patent No. 512,663, dated January 9, 1894.

Application filed March 28, 1893. Serial No. 468,050. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST LESLIE RANSOME, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented a new and useful Arm for Concrete-Mixing Mills, of which the following is a specification.

My invention relates to an improvement in that class of mixing mills in which the concrete is mixed in a trough by blades attached to a revolving shaft.

Hitherto no blade has been introduced that does not occasionally become so caught by a stone wedging in between it and the trough as to either pull up or break the mill, and the object of my improvement is to furnish a blade or arm that will yield sufficiently to pass or slide along with a wedge shaped stone, no matter how they may be relatively placed or caught against the trough. I attain this object by substituting for the ordinary blades a spring arm, by preference made up of two or more pieces of steel or equivalent substance attached together sufficiently to combine and unite their strength in stirring up the concrete while not so rigidly fastened as to prevent such play between the several parts of

the arm, as will insure sufficient elasticity to the arm to enable it to pass or slide along under any circumstances. For instance, in place of the ordinary blade, I use a spiral spring as shown in Figs. 1 and 2 of the accompanying drawings, or I attach a piece of steel rope, as shown in Fig. 3, to the shaft, or in lieu of the rope I bind or fasten together a number of steel strips or rods or wires, as shown in Figs. 4 and 5. In some cases, in place of a single arm, loops may be formed by attaching both ends of the arm to the shaft as in Fig. 6. In any case, when desired they can be so placed upon the shaft that together they form more or less of a spiral conveyer in the usual way.

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

In a mixing machine a revolving shaft in combination with an elastic mixing arm consisting of two or more pieces of steel fastened together substantially as described.

ERNEST LESLIE RANSOME.

Witnesses:

F. LESLIE RANSOME,  
HARRY F. INGERSON.