(No Model.)

E. CHATAIN & S. GILETTI.

CONCRETE MIXING MACHINE.

No. 413,820. Patented Oct. 29, 1889.

Fig. 1

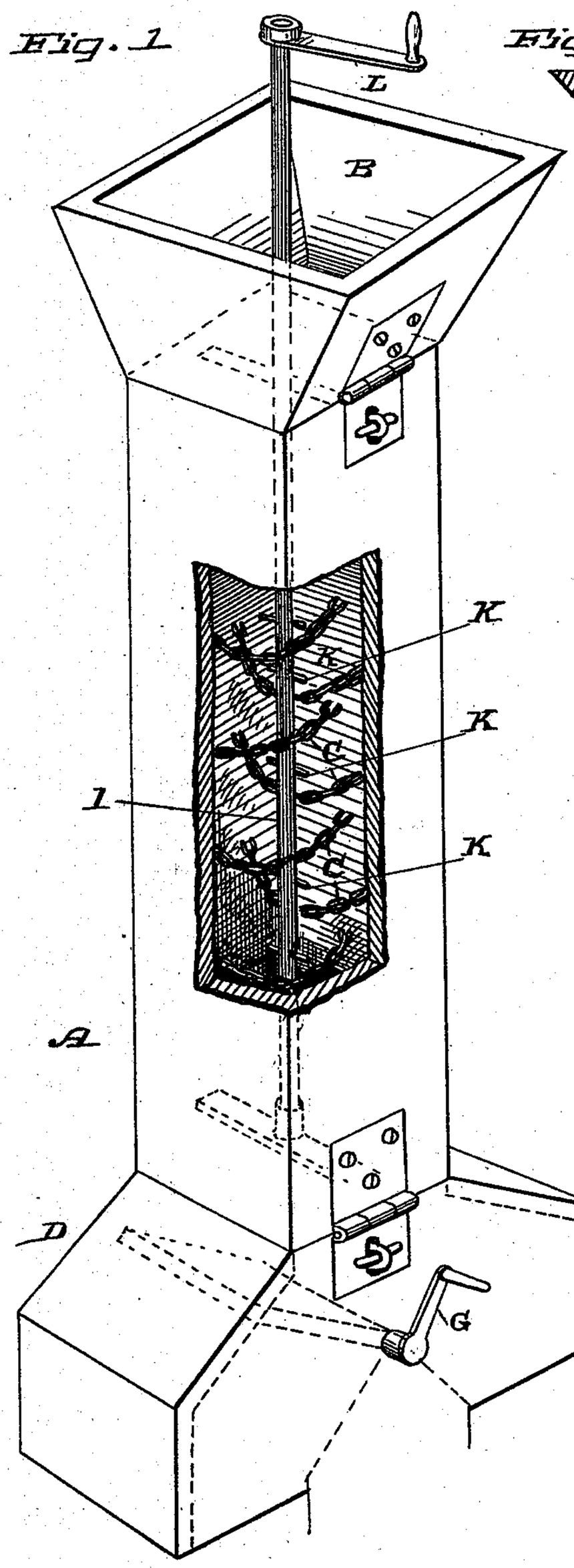
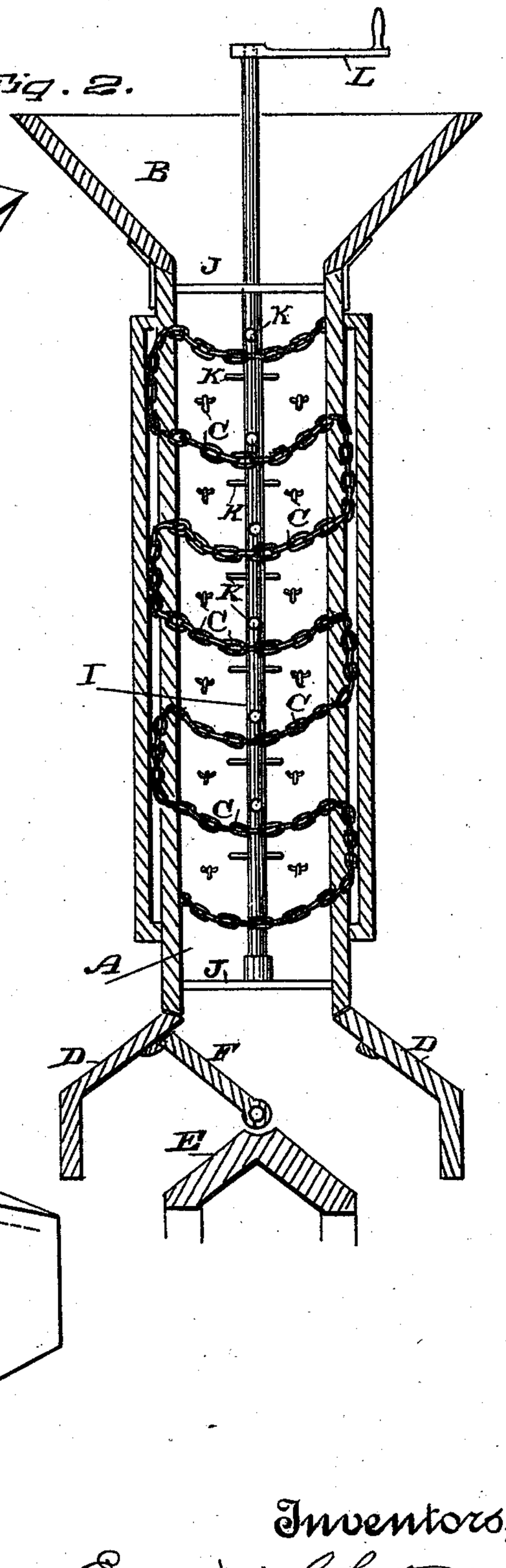


Fig. 2.



Witnesses,
Geo. H. Strong.
L. Strong

Inventors,
Evariste Chatain
Secondo Giletti
By Dewey & Co.
Attys

UNITED STATES PATENT OFFICE.

EVARISTE CHATAIN AND SECONDO GILETTI, OF SAN FRANCISCO, CALIFORNIA.

CONCRETE-MIXING MACHINE.

SPECIFICATION forming part of Letters Patent No. 413,820, dated October 29, 1889.

Application filed June 7, 1889. Serial No. 313,531. (No model.)

To all whom it may concern:

Be it known that we, EVARISTE CHATAIN and SECONDO GILETTI, of the city and county of San Francisco, State of California, have invented an Improvement in Concrete-Mixing Machines; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to an apparatus for mixing materials for the formation of concrete.

It consists of a vertical tube with a receiving-hopper at the upper end, and a series of transversely-arranged swinging chains, by which the material is mixed as it falls from the top to the bottom of the tube.

Referring to the accompanying drawings for a more complete explanation of our invention, Figure 1 is a perspective view of the device with a portion of the tube broken away to show the interior arrangement. Fig. 2 is a vertical section through the device.

A is a tube, which is made of any convenient or suitable length and proportionate diameter to suit the work to be done. Upon the upper end of this tube is fitted a hopper with diverging sides to more conveniently receive the material which is to be treated. Within the tube are fixed the chains C C. These chains are made of links of sufficient size and strength, and have their ends fixed in opposite sides of the tube, two or more of these chains being fixed across the tube in one direction, then another set a little below and at right angles with the first, and so on to the bottom. The chains are hung loosely enough so that they will have considerable flexibility and motion from side to side within the tube. They are thus arranged at short intervals, extending from the top to the bottom of the tube, whatever its length may be. At the bottom of the tube is arranged a housing D and a central roof-shaped portion E, having fixed upon its apex a swinging gate F. This gate is provided with a crank G upon the outside, by which it may be turned to one side or the other at will. This device forms two separate passages from the bottom of the tube, inclined in opposite directions, as shown in the drawings. The material from the tube may be discharged into either one or the other of these passages by simply turning the gate F so as to close the opposite passage and divert the material into the one which has been left open.

The operation of the device will be as follows: The material, consisting of coarse rock, sand, and cement in the proper proportions for mixing concrete, is brought in barrows, or by other suitable or convenient means, to the hopper at the upper end of the tube, and is dumped into this hopper. As it falls through the tube, it strikes the transverse chains, setting them in motion and interrupting the fall of the material, and thus mixing it and thoroughly stirring it up by the simple act of falling through the tube and upon the swinging chains, so that when it reaches the bottom it is in condition to be used at once, being thoroughly mixed. At the bottom and underneath each of the diverging passages formed by the housing and gate are the receptacles, either barrows or carts, and one of the passages is employed until the receptacle beneath this discharge has been filled, when the gate may be reversed and another receptacle filled beneath the other passage, thus alternating as long as the material is supplied.

In order to prevent any temporary clogging which might occur within the tube, we have shown a vertical shaft I, having its upper and lower ends journaled in transverse bars J at the top and bottom, and having a series of pins K projecting a short distance horizontally above and below the chains C. A crank L is fixed to this shaft at some convenient point in its length, and projects outwardly through a slot in the side of the tube, or at the lower end, if more convenient and preferable, so as to be within reach of the operator, and by this crank the vertical shaft, with its pins may be rotated, so as to stir up and loosen any material which may have become choked within the tube. The loosely-suspended chains hanging across the interior of the tube are caused to swing from side to side by the impact of the material falling through the tube by gravitation, and thus interrupting it in its fall, the whole mass is thoroughly and equally mixed without further attention or labor.

It will be manifest that jointed bars might be employed in place of the chains, the effect being similar.

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

1. The device for mixing the materials for concrete, consisting of the vertical tube having the suspended chains fixed transversely within it, substantially as described.

2. A concrete-mixing device consisting of the vertical tube, a series of loosely-suspended chains fixed transversely across it at intervals from top to bottom, the vertical shaft with transverse arms and an operating-crank, and the discharge-passages and controlling-gate at the bottom of the tube, substantially as described.

In witness whereof we have hereunto set our hands.

EVARISTE CHATAIN.
SECONDO GILETTI.

Witnesses:
S. H. NOURSE,
H. C. LEE.