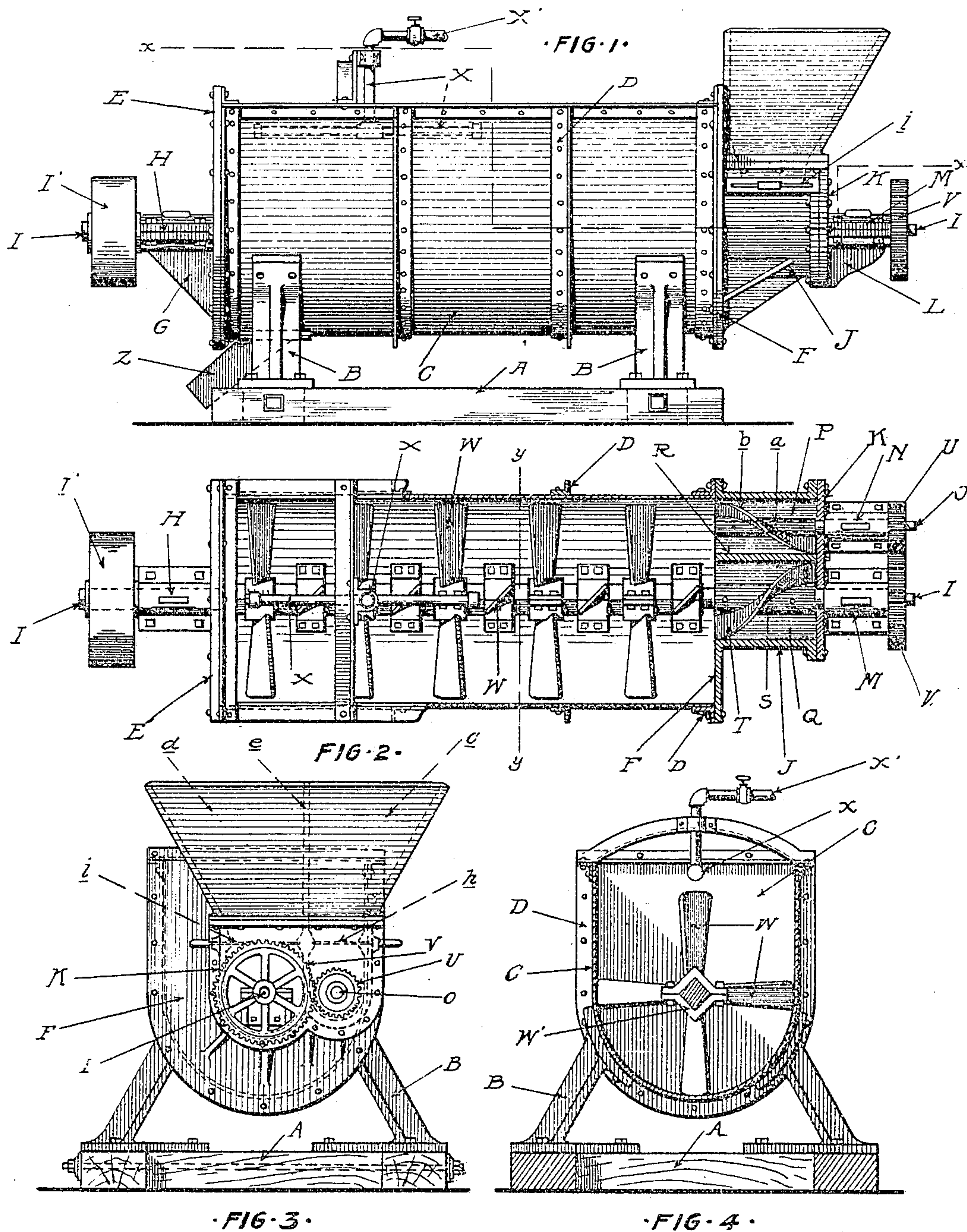


No. 787,071.

PATENTED APR. 11, 1905.

C. BRENT.
CEMENT MIXER.

APPLICATION FILED MAY 16, 1904. RENEWED FEB. 27, 1905.



WITNESSES

Geo. H. Graves
 Jas. P. Barry

INVENTOR

CHARLES BRENT.

BY

James Whittington
ATT'Y.

UNITED STATES PATENT OFFICE.

CHARLES BRENT, OF RAT PORTAGE, CANADA, ASSIGNOR OF TWO-THIRDS TO ARCHIBALD CAMPBELL AND ARCHIBALD MacLAREN, OF DETROIT, MICHIGAN.

CEMENT-MIXER.

SPECIFICATION forming part of Letters Patent No. 787,071, dated April 11, 1905.

Application filed May 16, 1904. Renewed February 27, 1905. Serial No. 247,556.

To all whom it may concern:

Be it known that I, CHARLES BRENT, a subject of the King of Great Britain, residing at Rat Portage, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Cement-Mixers, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to useful improvements in cement-mixers, particularly in the construction, arrangement, and combination of parts, as more fully hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my improved mixer. Fig. 2 is a horizontal section on line *xx*, Fig. 1. Fig. 3 is an end elevation looking from the right-hand end of Fig. 1; and Fig. 4 is a vertical cross-section upon line *yy*, Fig. 2.

A is the base, having the standards B, in which is supported the casing C, which I have shown of U-shaped sheet metal reinforced by the U-shaped bands D.

E and F are the end plates for the casing, being bolted onto the flanges on the end bands D. The end plate E has preferably cast integral with it a bracket G, in which is the central horizontal bearing H for the shaft I, on which I have shown drive-pulley I'. The end plate F has cast, preferably integral with it, a casing J, forming feed-chambers, and to the outer end of this feed-chamber casing is secured an end plate K, having cast integral with it, preferably, brackets L, upon which are provided the bearings M and N, the bearing M being in line with the bearing H and forming a support for the other end of the shaft I.

In the bearing N is the stub-shaft O, supported in the bearing and projecting both sides thereof, its inner end having secured to it a sleeve *a*, having thereon a worm-flange *b*. This worm-flange is in a feed-chamber P in the extension J, and the feed-chamber P is separated from the chamber Q by a partition R. The chamber Q is arranged about the axis of the shaft I, and on the shaft I within the chamber Q is a sleeve S, having a worm-

flange or a worm T thereon. The shafts I and O project beyond the bearings M and N, respectively, and upon these two shafts are the gear-wheels U and V. These two gear-wheels are detachably secured to the projecting ends of the shafts, so that they may be readily removed and other intermeshing gears of different ratios be placed thereon.

At the top of the extension J, I arrange the two hoppers *c* and *d*, the lower ends separated by the partition *e*, the hopper *c* being adapted to deliver material to the chamber P and the hopper *d* being adapted to deliver its material to the chamber Q.

The shaft I in its middle portion is squared, as shown in Fig. 4, and upon the squared portion of the shaft are secured the blades W, these blades being preferably cast integral with the clamping-plates W', which are bolted on the shaft, as plainly shown in Fig. 4.

In the top of the casing I provide a perforated feed-pipe X, which is supplied by water from any suitable source through the supply-pipe X'.

At the lower end of the hoppers *c* and *d* I arrange cut-off gates *h* and *i*.

The parts being thus constructed they are intended to operate as follows: The cement is put in the hopper *c* and the sand in the hopper *d*, the gates *h* and *i* being open. Motion is imparted to the shaft I through the pulley I', and this will rotate the blades W with the shaft and also the worm T on the sleeve S in the sand-chamber Q. Through the gears V and U the shaft O will be rotated and the worm *b* in the cement-chamber P will likewise be rotated, and thus the sand and cement will be fed into the casing C and will be fed therethrough by the blades W, at the same time being thoroughly mixed. After the sand and cement have been thoroughly mixed in the first part of the mixing-chamber the water will be turned on and the cement will be moistened and more thoroughly mixed in the second half of the casing and will finally be discharged through the discharge-spout Z at the lower end. When it is desired to change the speed of the worms in the sand and cement chambers, I simply detach the

gears U and V and supply their places with others of different proportionate size.

By arranging one worm directly on the main shaft of the machine, which carries the
5 beaters and acts as the drive-shaft, and by making the gears detachable I not only simplify the machine, but am enabled very readily to change the speed at which the material is fed into the mixing-chamber.

10 The construction described is cheap and simple to manufacture and is very efficient in producing the desired mixture.

What I claim as my invention is—

1. The combination of a mixing-chamber,
15 the end plate F at one end, the sand-chamber Q and the cement-chamber P secured to said end plate, the shaft I extending centrally through the mixing-chamber and centrally through the sand-chamber, bearings at the
20 end of said shaft, a bearing at the end of the cement-chamber, shaft O in said bearing, the worm *b* on said shaft in said chamber, the worm T on the main shaft in the sand-cham-

ber, the beaters or blades W on the main shaft within the mixing-chamber and the inter- 25 meshing gears on the shafts I and O, for the purpose described.

2. The combination of a casing, the main shaft extending therethrough, bearings H and N to which said shaft is journaled at its ends, 30 the blades on the shaft within the casing, the sand-chamber Q between the bearing N and the casing, the worm T on the main shaft in the sand-chamber, the cement-chamber P beside the sand-chamber, the bearing N at the 35 end thereof, stub-shaft O in said bearing, the worm *b* on the stub-shaft in the cement-chamber, and the detachable intermeshing gears U and V on the main shaft and the stub-shaft, for the purpose described. 40

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

CHARLES BRENT.

Witnesses:

JAS. P. BARRY,
H. C. SMITH.