





# UNITED STATES PATENT OFFICE

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## CEMENT-MIXER.

No. 847,281.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, JAMES A. DEVINE, a citizen of the United States, residing at Zanesfield, in the county of Logan and State of Ohio, have invented a new and useful Improvement in Cement-Mixers, of which the following is a specification.

My invention relates to certain improvements in cement-mixing machines.

Figure 1 is a perspective view of my device with the drum in position for filling. This figure shows the frame cut away or built to allow the drum to revolve backward so chute C can be brought down to the loading-platform M below the axis of the drum, also showing my loading-platform M and box P, that contains a gasoline-engine. Fig. 2 is a front view with the drum in position for unloading.

M designates a platform, which is suitably mounted on wheels both for transportation and so that it will be above the ground, for a reason hereinafter set forth. The said platform has at its front end a suitable housing P for an engine or other motor and at its rear end has a recessed or cut-away portion N, over which the drum or cylinder H is mounted. The said cylinder has its ends closed and its top or side cut away or open and is mounted loosely on an axle D, that is journaled in the frame E. On one end of axle D is a sprocket-wheel I to receive power through a chain from the engine to operate the mixing-shovels *a b c d*. These mixing-shovels are adjustably arranged in series and secured on four sides of the axle within the cylinder and all but one of each series are curved like a plowshare and set at an inclination to turn and push the cement and gravel along as they move forward. One shovel *a* of each series is flat to lift the material up and drop it forward over the axle as it revolves, and these are arranged in progressive steps around the axle, the flat shovels *a* of the several series being in different horizontal rows. Each alternate series of shovels pushes the material in opposite directions endwise while turning it over. The cylinder H is provided at the opposite sides of its cut-away portion with chutes C and O.

The operation of my device is as follows: The cylinder H is revolved until the chute C is on or just above platform M. The gravel is wheeled up onto the platform and dumped

into the cylinder and the cement sprinkled in with it. When the desired amount, usually three wheelbarrows full, are emptied into the cylinder, the machinery is started and the material dry-mixed for one minute. The water is then thrown in without stopping the machinery, and the mass is then mixed for one minute in the wet state. Cylinder H is then revolved backward by hand or otherwise, and then shaft D is rotated until the shovels lift the material out and fill a wheelbarrow beneath the chute O. When the first wheelbarrow is full and the material is lowered in the cylinder, the cylinder is further revolved until the chute O is still further lowered and the shovels fill another wheelbarrow. The cylinder is still further revolved and the shovels scrape the remainder of the material into a wheelbarrow. The cylinder is then revolved forward into position for other wheelbarrows to fill it again. The machine is a batch-mixer; but the process is almost continuous, the shovels revolving all the time, and the only time the machine is not mixing is when the cylinder is being turned back for more material. The revolution of the cylinder can be by hand-lever or other power. The shovels are fastened adjustably to their supporting-beam, so they can be turned to vary the inclination of the shovels to work different grades of gravel.

The advantage of making my mixing-receptacle a cylinder with a small cut-away portion in the top for facility in loading and unloading lies in the fact that when the cylinder is revolved backward for loading until the loading-chute is below the axis and even with the loading-platform M the arc or inward curve of the cylinder's side causes the material dumped into it to drop to the bottom of the cylinder and furnishes no place for lodgment or clogging of the material.

What I claim is—

1. In a concrete-mixer, the combination of a platform with a cut-away portion at one end, a frame on said platform adjacent to said cut-away portion, an oscillating drum loosely mounted in said frame and having an opening in its periphery provided with chutes at opposite edges thereof a shaft journaled in said frame and having within said drum shovels thereon, and means for rotating said shaft independently of said drum, as and for the purpose set forth.

2. In a concrete-mixer a mixing-drum  
with shaft having thereon several series of  
shovels, each series extending around the  
shaft and having a flat shovel, the other  
5 shovels of the series being curved, and the  
shovels of each series being arranged so that  
the flat shovels of the several series are in dif-

ferent horizontal rows, as and for the purpose  
set forth.

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Attest:

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