To all whom it may concern:  

Be it known that I, PETER C. FORRESTER, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented a certain new and useful Improvement in Sand-Brick Machines, of which the following is a specification.

My invention relates to sand brick machines, and has for its object particularly new and useful improvements in the devices for mixing and supplying the material to the machine proper.

My invention is illustrated in the accompanying drawings, wherein Figure 1 is a sectional view of the apparatus as a whole showing certain parts in elevation; Fig. 2 is a section on line 2-2 of Fig. 1, and Fig. 3 is an end view of a portion of these devices.

Like parts are indicated by the same letter in all the figures.

A is the casing preferably removable during the operation of the machine, but concealing its operating parts.

A is the hopper through which the material is supplied to the machine.

A is a projecting, continuous-motion, driven shaft of the brick machine. A is a pulley thereon, driving the belt A.

A is a projecting stud on the upper plunger of the brick machine projecting through the slot A in the casing.

A is a rope having the ring A to engage the stud. The rope A is attached at its upper end to one end of the arm B which is loosely mounted on the shaft C and carries a dog B to engage a ratchet wheel B which is tight on the shaft. The arm is pulled upwardly by means of the weight B on the cord B which passes over the pulley B. The parts are so proportioned that in the case illustrated by each downward motion of the arm B the shaft C is rotated one-sixth of its circumference. On this shaft are mounted a series of discharge devices C, C, C. Each consists of the casing illustrated and the internal discharge device consisting of the segments C, C formed by radial projections on the shaft C within the casing. The casing is open above at C beneath the several hoppers C, C and C, and below at C above the trough D. The several hoppers contain suitable material as for example hopper C may contain coloring matter, C lime, C sand.

The devices of the several parts are made as desired, and they are so related that as each of the discharge devices is rotated one-sixth of the way around it discharges into the trough D a certain amount of material, the three substances being in sufficient quantity to furnish material, along with the water supply hereafter to be referred to, to make one set of brick, as, for example, four bricks. In the trough D is a conveyor D which moves and to a certain degree mixes the materials and carries them in the direction indicated by the arrow until they are discharged at the point D into the trough E. This latter trough has a stirring, mixing and conveying device E which moves the mixed material in the direction indicated by the arrow to the end of the trough E and the discharge opening E whence such material is discharged into the hopper.

The shaft D of the conveyor D is provided with a pulley or sprocket wheel D which is driven by the belt A and it is geared by means of the gears D, D to the shaft D of the conveyor E so that the two rotate together. Since the belt A is driven from a continuous motion shaft of the brick machine proper, these two conveyers will be in motion so long as the brick machine is in motion, and since the shaft C is intermittently partially rotated through the operation of the rope A from a reciprocating portion of the brick machine proper, the shaft C will be rotated far enough to discharge at each reciprocation a proper quantity of material into the trough D.

After the materials have been mixed and conveyed to near the point of discharge into the hopper A it is necessary to supply a suitable quantity of water. This water is supplied from the tank F into which water is supplied through the supply pipe F being maintained at a fixed level by the floating valve F. At one edge of this tank and opening from below the top thereof, is the chute F which leads to the pipe F which discharges at the point F near the conveyor trough E. Mounted on the rope F at the upper end of the chute F is a rocking dipper proportioned and weighted so that it
tends to stay in the position indicated in Fig. 1. In this position its inner end is slightly below the level of water in the tank so that the dipper contains a quantity of water below the water level line F. The dipper may be provided with the weight F. To keep the water from flowing out between the sides of the dipper and the edge of the end of the tank, a canvas valve F is provided. A rope G is attached to the outer end of the dipper and to the arm B, so that every time the shaft C is rotated one-sixth way round, the dipper full of water is taken out of the tank, poured into the chute and discharged thence through the pipe into the end of the conveyer E. It will be understood that these several parts are intended to be here shown as it were diagrammatically and that most of them can be greatly varied in size, proportions and relations without departing from the spirit of my invention.

I have conceived of many other forms and types of these several parts not here of course fully illustrated, but suggested at least in general terms what has been shown and described.

The use and operation of my invention are easily understood. The brick machine being in operation, the rope from some one of its reciprocating parts is alternately moved so as to rotate the shaft C one-sixth way around and this results in discharging a sufficient quantity of the several materials required into the trough D. This material here is moved forward and discharged into one end of the mixer D where it is mixed and moved forward passing at some suitable point under a supply of water which is intermittently discharged in sufficient quantity to furnish moisture for one set of bricks. As shown the supply pipe is opened directly into the trough with this water can be delivered in any desired manner and over any desired part of the trough.

I claim:

1. In combination with a brick forming device having a reciprocating part, a mixing device, a water tank, a tilting dipper associated with the water tank and adapted to discharge water into the mixing device in measured quantities, and connections from the reciprocating part to the dipper whereby the same is intermittently tilted.

2. In brick making apparatus, the combination of a brick forming device having a reciprocating part, with a series of hoppers for the dry ingredients, measuring devices in said hoppers, a rotatable shaft connected with said measuring devices, a mixing and conveying device into which the material is discharged from said hoppers, a water tank, a tilting dipper associated with the water tank, a trough to receive the water from the dipper, a connection from the trough to the measuring and conveying device, and connections from the reciprocating part of the brick forming device to said rotating shaft and said dipper for intermittently rotating said shaft and tilting said dipper.

3. In brick making apparatus, the combination of a brick forming device having a reciprocating part, with a series of measuring devices for measuring the dry ingredient, a common driving shaft to operate the same, a water tank, a water measuring device associated therewith, a connection between the reciprocating part and the water measuring device comprising a pivoted arm, a ratchet device on the driving shaft for the measuring device, and a pawl on such pivoted arm.

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Witnesses:
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