

E. F. LOISEAU.

Apparatus for Mixing Artificial Fuel.

No. 147,663.

Patented Feb. 17, 1874

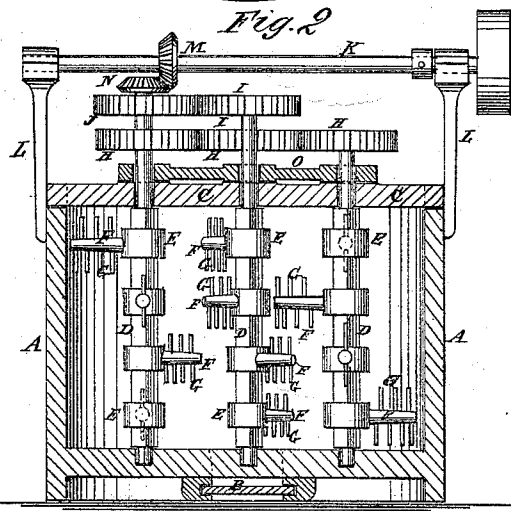
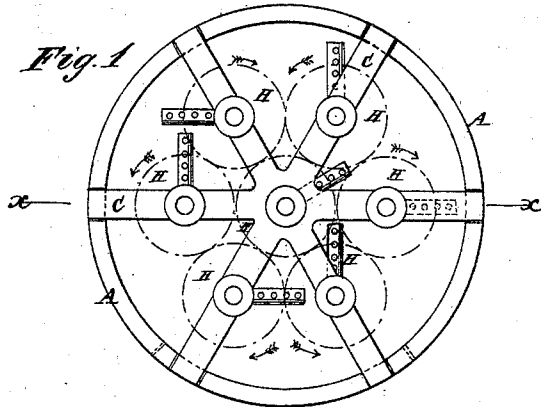


Fig. 3

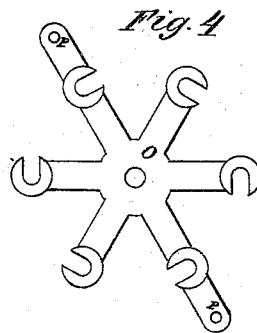
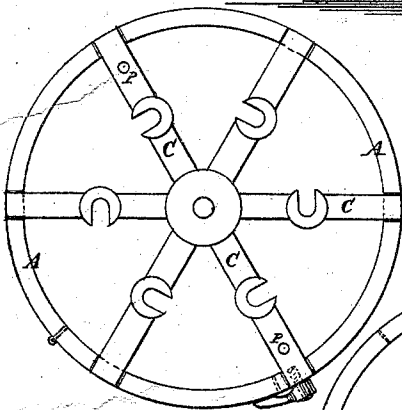
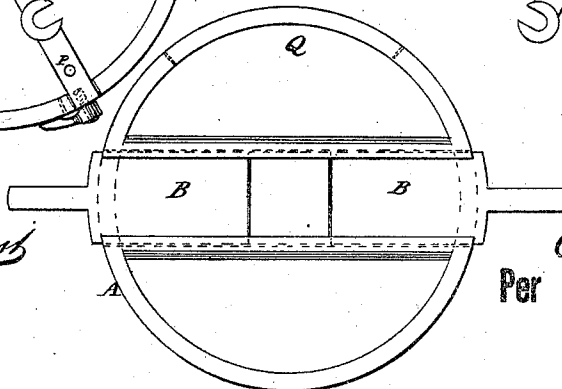


Fig. 5



Witnesses:

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UNITED STATES PATENT OFFICE.

EMILE F. LOISEAU, OF MAUCH CHUNK, PENNSYLVANIA.

IMPROVEMENT IN APPARATUS FOR MIXING ARTIFICIAL FUEL.

Specification forming part of Letters Patent No. **147,663**, dated February 17, 1874; application filed October 4, 1873.

To all whom it may concern:

Be it known that I, EMILE F. LOISEAU, of Mauch Chunk, in the county of Carbon and State of Pennsylvania, have invented a new and useful Improvement in Mixing-Machines, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claim.

In the accompanying drawing, Figure 1 represents a top view of the machine. Fig. 2 is a vertical section of Fig. 1, taken on the line *x x*. Fig. 3 is a top view of the casing, showing the stationary spider thereon for the support of the vertical shafts. Fig. 4 is a view of the movable spider detached. Fig. 5 is a view of the bottom of the machine.

Similar letters of reference indicate corresponding parts.

A represents the casing or tub, which has orifices, one or more, in its bottom for the discharge of the material after it has passed through the machine. These orifices are closed by adjustable slides B. C is a spider, with six (more or less) arms, which is rigidly attached to the top of the tub. D represents vertical shafts, one to each of the arms of the spider, which are supported by step-boxes at the lower end, and by slotted half-boxes in the edge of each of the arms of the stationary and movable spiders. These shafts are placed in a circle, and surround the central shaft E. This shaft E passes through the center of the spiders, and is supported at the lower end by a stop-box, the same as the other shafts. F represents lateral arms, with which each of the vertical shafts is provided. These have each an eye or hub, and four (more or less) are slipped onto each shaft.

In this example of my invention I make the shafts and hubs square, but they may be of any shape in cross-section, and fastened together in any suitable manner. The upper and the lower sides of these arms are provided with a number of fingers, G. The circles of shafts D are connected together by a train of gear-wheels, H, of uniform diameter, so that they revolve with uniform speed and regularity. The central shaft E is also provided with the same number of lateral arms, each having vertical fingers, G, the same as those already described. This central shaft is revolved at the same speed by means of the gear-wheels I and J, which are of the same diameter as the wheels H. The latter wheel

J is placed on one of the shafts D, which shaft is elongated for the purpose. K is the driving-shaft, which is placed horizontally over all the above-mentioned gearing, and is revolved in the stands L L, which are attached to the sides of the machine.

The motive power is applied by means of a pulley or gear-wheel on the end of this shaft, or in any other suitable manner.

M is a bevel-gear on the shaft K, and N is a bevel-gear on the top of the elongated shaft D, by means of which motion is imparted to all the vertical shafts. These shafts, D, are confined to the spider C by means of a movable spider, O, Fig. 4. This spider rests on the stationary spider, and has arms which correspond in position with those of the stationary spider. The central shaft passes through its center, and the spider turns thereon. In one edge of each of the arms of this spider are slot half-boxes, which boxes correspond in position with the half-boxes of the stationary spider. The two half-boxes form a whole box for each of the shafts D, and keep those shafts in position. The movable spider has two elongated arms, through which screws P are passed to confine it to the stationary spider. When from any cause it becomes necessary to remove any one of these vertical shafts, D, it is only required to remove the screws P and turn the movable spider on the central shaft, which releases the shafts D, so that any one of them can be readily removed for repairs or other purposes. The arms are so arranged on the shafts that they revolve without interfering with each other, while every portion of the material passing through the machine is subjected to their action. The material is introduced into the top of the machine, and in one passing through it is most intimately mixed and rendered perfectly homogeneous. In the side of the machine is an opening, Q, closed by a hinged door, through which the interior may be inspected.

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

The movable spider O, in combination with the stationary spider C, as and for the purposes described.

EMILE F. LOISEAU.

Witnesses:

T. B. MOSHER,
ALEX. F. ROBERTS.