(No Model.)

F. SCHILLINGER.

MACHINE FOR MIXING ASPHALT.

No. 336,164. Patented Feb. 16, 1886.

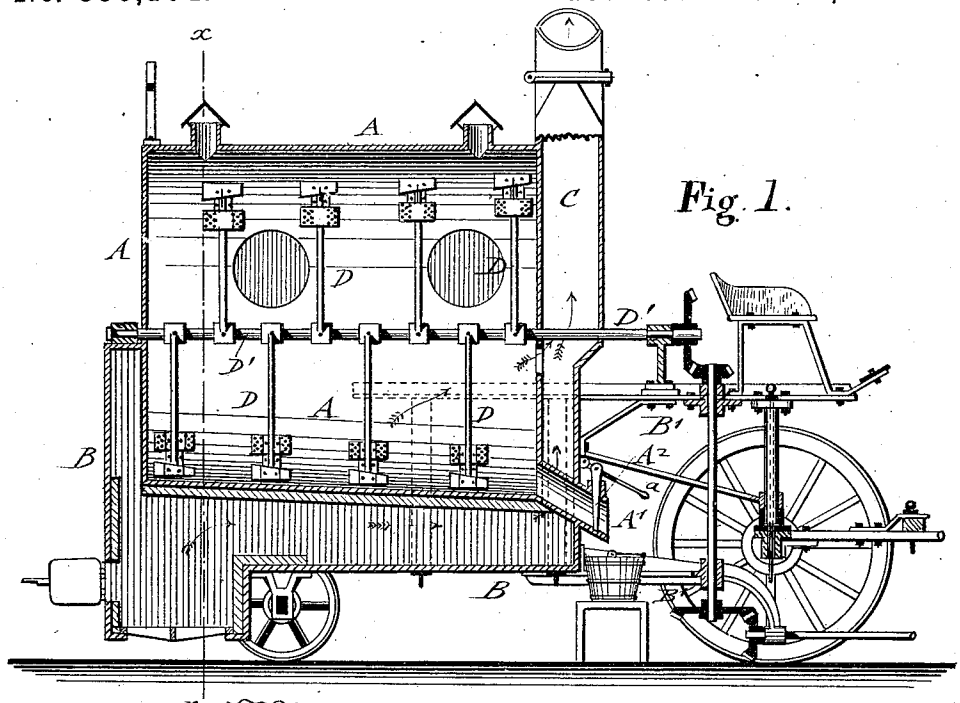


Fig. 1.

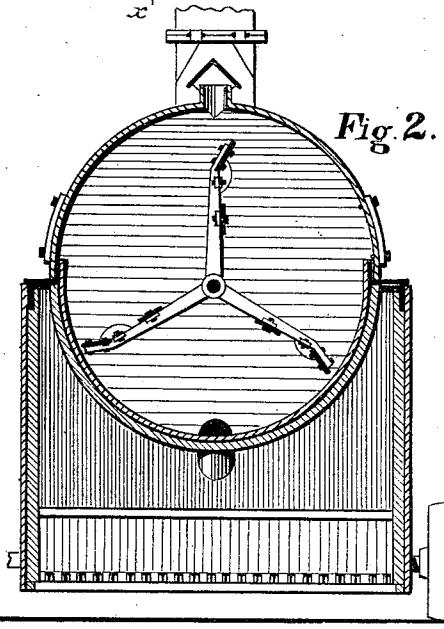


Fig. 2.

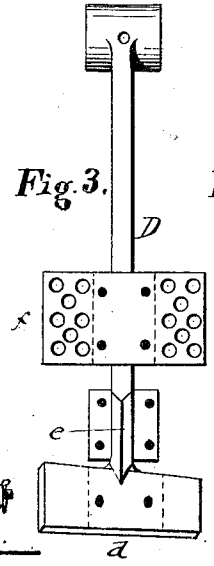


Fig. 3.

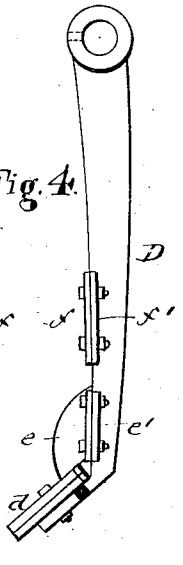


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

FREDRICK SCHILLINGER, OF TOLEDO, OHIO.

MACHINE FOR MIXING ASPHALT.

SPECIFICATION forming part of Letters Patent No. 336,164, dated February 16, 1886,

Application filed November 18, 1885. Serial No. 183,150. (No model.)

To all whom it may concern:

Be it known that I, FREDRICK SCHILLINGER, of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Machines for Mixing Asphalt, of which the following is a specification.

This invention has reference to an improved machine for mixing asphalt in a rapid and effective manner, and delivering it in easily-flowing state from the boiler to the receiving-vessels; and the invention consists of a machine for mixing asphalt, in which the bottom of the boiler is inclined and provided at its front end with a downwardly-inclined discharge-spout having a vertically-guided gate. A rotary mixer-shaft is provided with stirrer-arms of gradually-increasing length, said stirrer-arms being provided with paddles supported at an inclination to the arms, with forward-projecting cutting-knives above and at right angles to the paddles, and with perforated breaking-up plates above the cutting-knives.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of my improved machine for mixing asphalt. Fig. 2 is a vertical transverse section on line *x x*, Fig. 1, and Figs. 3 and 4 are respectively a front view and a side view of one of the stirrer-arms drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a cylindrical boiler, which is supported on angle-irons of a furnace, B, in such a manner that the upper part of the boiler is above said furnace, while the lower part is located within the same. The furnace B incloses also the lower half of the heads of the boiler A, so that the same is exposed to the heat of the furnace on all sides. The furnace B is provided at the rear end with a grate and a fire-door, the grate being below the bottom of the main part of the furnace, so as to form a fire-box for the fuel and a fire-bridge for the products of combustion, which pass along the bottom of the boiler to the chimney C at the front end part of the furnace. The bottom of the boiler has a slight downward inclination from the rear end toward the front end, and is provided at the lower front end with a downwardly-inclined spout, A′, which passes through the front head of the furnace to the outside.

The bottom of the boiler A is lined at the outside, and the bottom and the side walls of the furnace are lined at the inside with fire-bricks or other suitable refractory material, by which the iron walls are protected against deterioration, and also the asphalt in the boiler protected against burning by being exposed to a too great degree of heat.

The inclined bottom of the boiler A has the advantage that the material in the boiler has a tendency to flow toward the discharge-spout, which is accelerated by a number of stirrer-arms, D, that are attached to a rotary shaft, D′. The shaft D′ turns in bearings at the rear part of the furnace, and at the front part in bearings of the wheeled frame B′, on which the furnace is supported, as shown in Fig. 1. The stirrer-arms D are made of different length, increasing gradually from the rear to the front end of the boiler, according to the inclination of the bottom, so that the paddles *d* at the outer end of the stirrer-arms D pass closely along the bottom of the boiler.

The discharge-spout A is provided with a vertically-guided gate, A^2, that is operated by a hand-lever, *a*, which is pivoted to the upper end of the gate and to the front head of the furnace. By opening the gate the liquid mass is readily and quickly discharged by the inclined spout from the boiler to the pails or other receptacles, by which the same is conveyed to the place of use.

The stirrer-arms D are provided immediately above the paddles *d* with cutting-knives *e*, that are bolted to ears *e′* of the stirrer-arms D, said knives extending in forward direction at right angles to the paddles and in line with the arms, so as to cut up the lumps of asphalt in the boiler. Above the knives *e* are attached to ears *f′* of the arms perforated plates *f*, which take up the asphalt cut by the knives and exert a breaking action on the same, so as to quickly reduce it and facilitate thereby the quick and even melting of the same to a liquid mass.

The mixer-arms D, in connection with the cutting-knives and perforated plates, cut and break up the mass of asphalt in the boiler,

mix the same thoroughly, and convey it to the discharge-spout, which is located at the hottest point of the furnace, so that the asphalt is discharged in an easily-flowing liquid state through the spout.

The mixer-shaft D is rotated by horse or steam power by means of transmitting-shafts and bevel-wheels, as shown in Fig. 1, or by a belt or pulley transmission, as the case may be.

The shafts and driver's seat are arranged at the front part of the wheeled supporting-frame, so that the machine can be readily conveyed from place to place by first removing the lower horizontal transmitting-shaft.

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

1. In a machine for mixing asphalt, the combination of a boiler with a furnace surrounding the lower part of the boiler, the bottom of the boiler being covered at the outside and the walls of the furnace at the inside with a lining of fire-brick, substantially as set forth.

2. The combination, in a machine for mixing asphalt, of a boiler having an inclined bottom and an inclined discharge-spout at the lower front end, a furnace surrounding the lower part of the boiler, and a rotary mixer-shaft having radial stirrer-arms of different length, substantially as set forth.

3. The combination, in a machine for mixing asphalt, of a boiler having an inclined bottom and an inclined discharge-spout, a vertically-guided gate for said discharge-spout, a furnace surrounding the lower part of the boiler, a rotary mixer-shaft having radial stirrer-arms increasing in length, said arms having inclined paddles at the outer ends, substantially as set forth.

4. In a machine for mixing asphalt, the combination of a boiler having an inclined discharge-spout, a mixer-shaft, and radial stirrer-arms attached to the shaft, and provided with paddles, and with cutting-knives above and at right angles to said paddles, substantially as set forth.

5. In a machine for mixing asphalt, the combination of a boiler having an inclined discharge-spout, a rotary mixer-shaft, radial stirrer-arms attached to said mixer-shaft, and provided with inclined paddles at the outer ends, cutting-knives above and at right angles to the paddles, and perforated breaking-up plates above the knives, substantially as set forth.

6. The combination of a boiler having an inclined discharge-spout, a furnace surrounding the lower part of the boiler, a rotary mixer-shaft, and radial arms of different lengths attached to said mixer-shaft, and provided with inclined paddles at the outer ends, cutting-knives at right angles thereto, and perforated cutting-up plates above the knives, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FREDRICK SCHILLINGER.

Witnesses:
JOHN R. BALSMEYER,
VALENTINE BRAUN.