

Aug. 24, 1926.

1,597,102

J. O. NAVONE

BRIQUETTE FORMING MACHINE

Filed Sept. 20, 1924

2 Sheets-Sheet 1

Fig. 1.

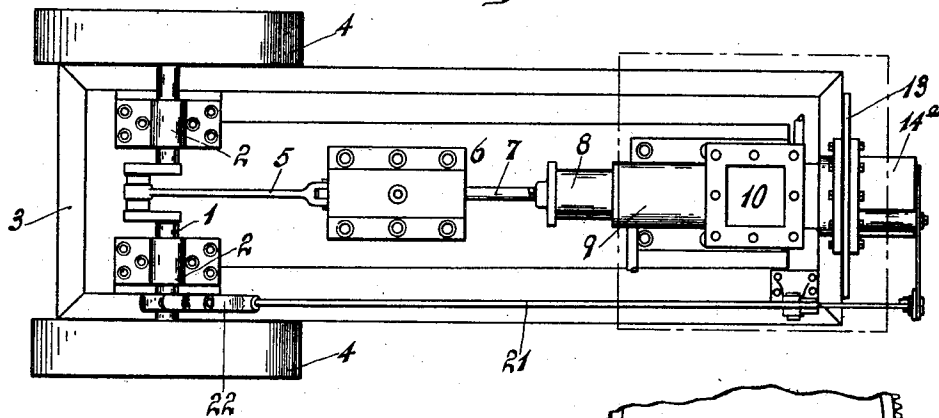
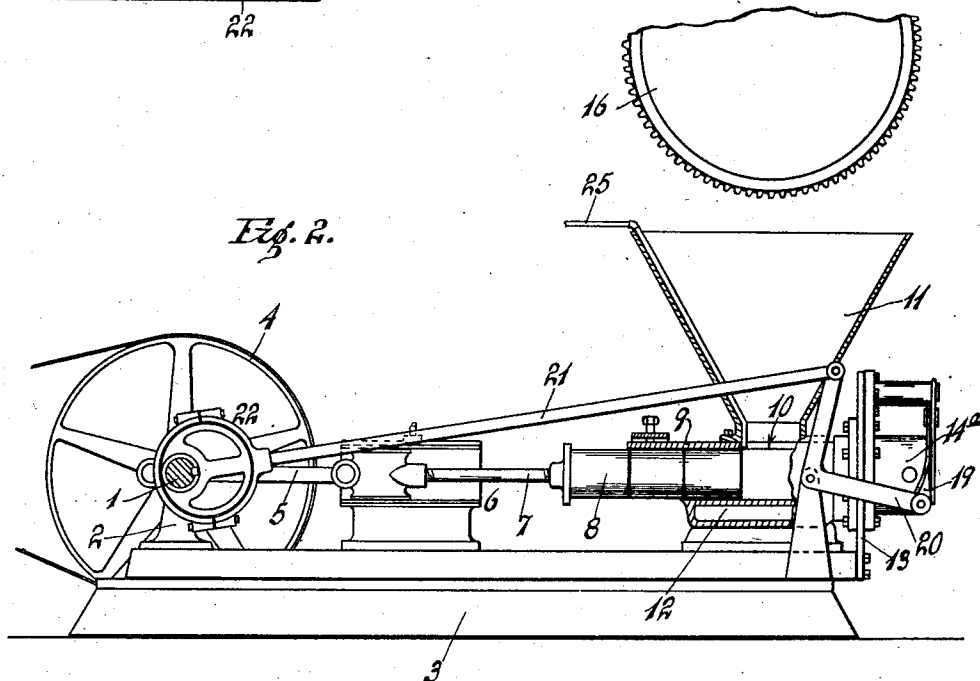


Fig. 2.



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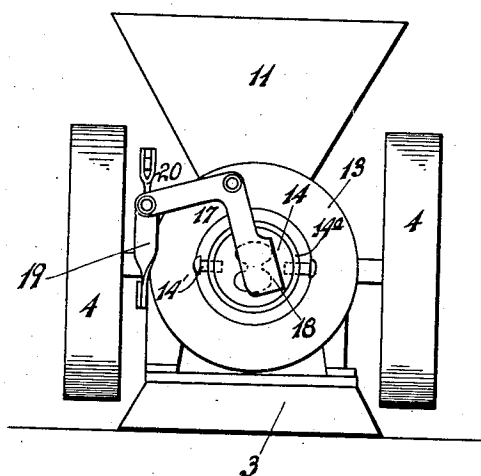
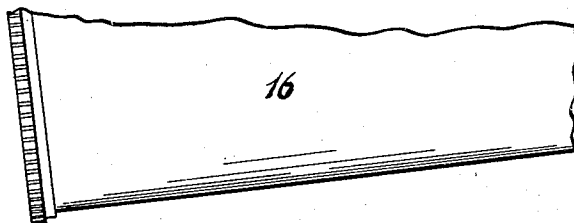


Fig. 3.

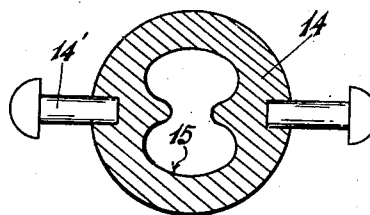


Fig. 4.

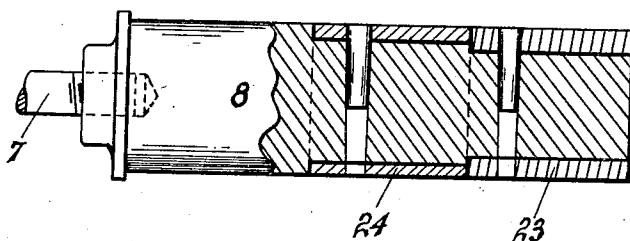


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN OTIS NAVONE, OF EMERYVILLE, CALIFORNIA.

BRIQUETTE-FORMING MACHINE.

Application filed September 20, 1924. Serial No. 738,925.

My invention is an improved briquette forming machine, the prime object being to provide a machine which will quickly and inexpensively form briquettes from a mixture of carbon, coal dust, oil, and a suitable binder.

In the annexed drawing in which my invention is illustrated:

Figure 1 is a plan view of my machine.

Figure 2 is a side view of the same with parts broken away to show the interior construction.

Figure 3 is an end view of the same.

Figure 4 is an end view of the briquettes forming die.

Figure 5 is a longitudinal sectional view of the piston.

Referring more particularly to the drawing, a crank shaft 1 is journaled in suitable bearings 2—2 secured to the bed plate 3. The crank shaft 2 has fly wheels 4—4 secured at either end thereof, and is driven from any suitable source of power.

A connecting rod 5 connects the crank shaft, and a cross head 6. A pitman 7 is secured to the crosshead and to piston 8 which extends into a cylinder 9. This cylinder rests on the bed plate 3, and is provided with an opening 10 in the top thereof over which a hopper 11 is mounted. This hopper is preferably bolted to the cylinder 9, or otherwise suitably attached thereto.

A steam jacket 12 is formed under the cylinder 9 to heat the contents therein, and prevent it from adhering to the walls. A plate 13 is secured to the forward end of the cylinder 9, and secured to the bed plate 3, and a forming die 14 is mounted in a sleeve 14^a and has an opening 15 extending there-through corresponding to the shape of the finished briquettes. Pins 14' extend through said sleeve into said die to hold it in place. An inclined drum 16 is mounted above the hopper 11, and is suitably rotated and fed with the finely divided substance of which the briquettes are formed, the rotation thereof causing the substance to fall into the hopper 11, thence through the opening 10 into the cylinder 9 in front of the piston 8, the forward stroke of said piston driving the charge through the die 14 forming the

briquette according to the opening in said die.

As the formed briquette protrudes from the end of the die 14, it is cut into desired lengths in the following manner: A bell crank lever 17 is pivoted to the plate 13 adjacent the die 14, and is formed with a cutter 18 which is adapted to swing over the opening 15 in the die, the other arm of said bell crank is connected through a link 19 to one arm of a bell crank 20 which is pivoted to an arm rising from the bed plate 3; the other arm of said bell crank is connected through a rod 21 to an eccentric 22 mounted on the crank shaft 1. This eccentric is positioned opposite to the crank of said crank shaft thus causing the cutter 18 to swing across the opening 15 at the time that the piston 8 is in its rear position; as the piston advances the cutter swings away from the opening permitting the briquette to protrude from the die 14 prior to being cut.

The piston 8 is provided with a pair of sleeves 23 and 24, which are preferably secured thereto by taper pins, and may be removed and replaced when greatly worn. An oil pipe 25 extends through the hopper 11 and opening 10 to a point adjacent the piston 8, which lubricates said piston in the cylinder and also prevents the powdered briquette substance from sticking in said cylinder.

Having described my invention, I claim:

A briquette forming machine comprising a cylinder, a steam jacket beneath said cylinder, a hopper opening into said cylinder, a pipe opening into said cylinder, a piston in said cylinder, renewable sleeves on said piston, a crank shaft for reciprocating said piston, a forming die secured to the end of said cylinder, a lever pivoted adjacent said die, a cutter on said lever, a bell crank lever pivoted adjacent said cylinder, a link connecting said levers, an eccentric mounted on said crank shaft, and a rod connecting said eccentric with said bell crank lever, whereby the cutter is caused to pass across the outer face of the die when the piston is in its rear-most position.

In testimony whereof I affix my signature.

JOHN OTIS NAVONE.