

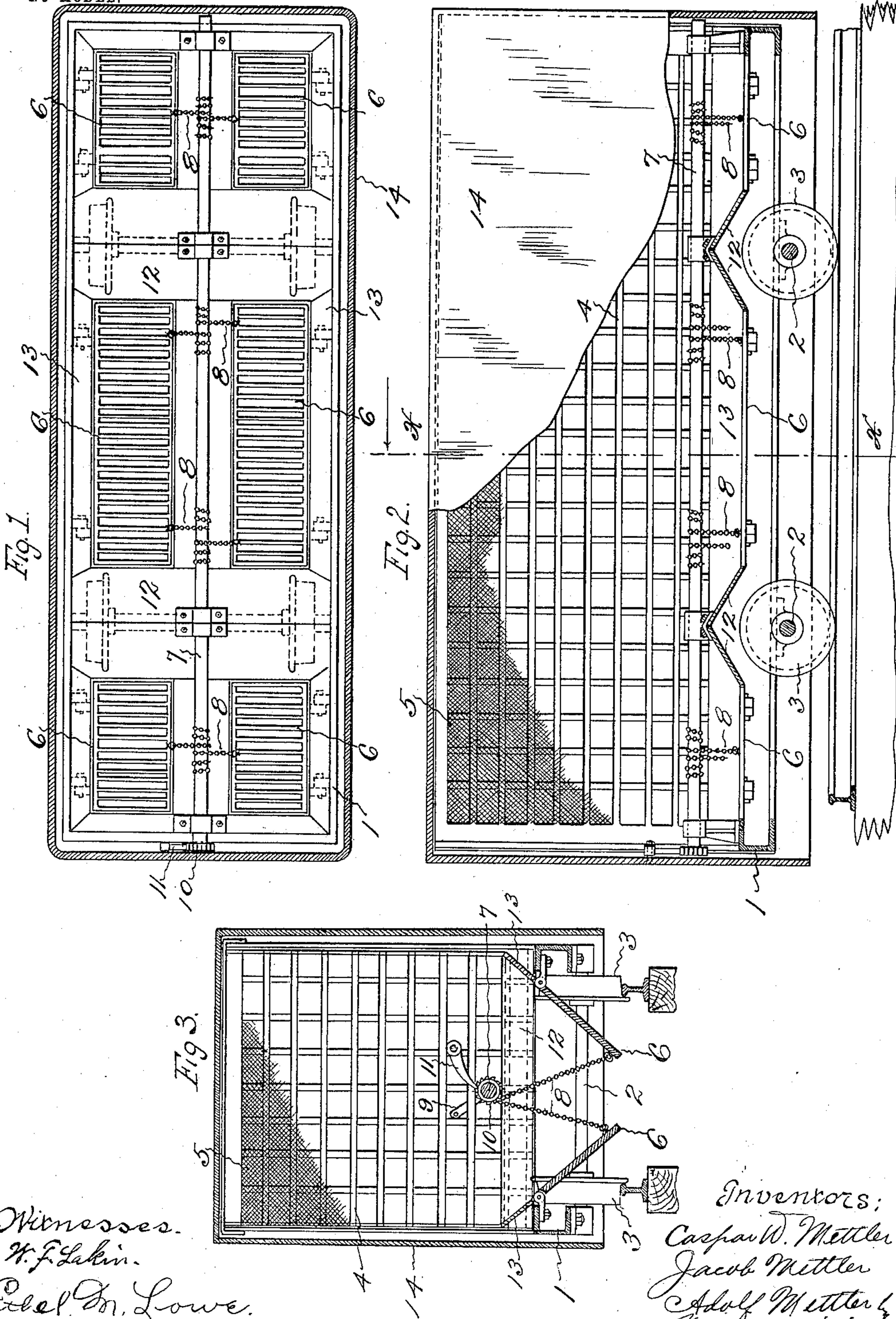
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C. W., A. & J. METTLER.
CARBONIZING CAR.

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NO MODEL.



Witnesses.
H. F. Lakin.
Edw. M. Lowe.

Inventors:
Carpaul W. Mettler
Jacob Mettler
Adolf Mettler
Harry P. Williams
Attorney.

UNITED STATES PATENT OFFICE.

CASPAR W. METTLER, ADOLF METTLER, AND JACOB METTLER, OF NEW HAVEN, CONNECTICUT, ASSIGNORS TO FREDERICK C. ROCKWELL, OF WEST HARTFORD, CONNECTICUT.

CARBONIZING-CAR.

SPECIFICATION forming part of Letters Patent No. 741,356, dated October 13, 1903.

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To all whom it may concern:

Be it known that we, CASPAR W. METTLER, ADOLF METTLER, and JACOB METTLER, citizens of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Carbonizing-Cars, of which the following is a specification.

This invention relates to a car which is designed to hold pieces of compressed vegetable matter while being carbonized into efficient and easily-handled fuel.

The object of the invention is to provide a simple car into which pieces of compressed vegetable matter, such as peat, can be quickly loaded and transported into a kiln in such condition that the vegetable matter can be heated and carbonized without being burned or consumed and then transported to a cooler in such condition that the hot vegetable matter will cool down without losing any of its volatile constituents which render it a free-burning fuel.

The car that is illustrated as embodying the invention has a frame mounted upon wheels that are adapted to fit the rails of a common track. The sides and ends are made up of interlaced vertical and horizontal metal strips and wire-netting, which retain the pieces of vegetable matter without interfering with the circulation of heated air. The bottom is provided with a sectional grate that is arranged to support the material without interfering with the circulation and that can be easily opened downwardly for dumping the material from the car. A hood that has tight top, sides, and ends and is open at the bottom only covers the top, sides, and ends and extends below the bottom of the car.

Figure 1 of the accompanying drawings shows a side elevation of one of these cars with parts broken away to expose the interior. Fig. 2 shows a plan of the car with the hood cut in horizontal section. Fig. 3 shows a vertical transverse section on the plane indicated by the broken line $x x$ of Fig. 2 with the grate-sections dropped as when carbonized material is being dumped from the car.

The frame 1 of this car is mounted upon the axles 2 of the wheels 3. They are adapted to fit the rails of an ordinary track.

The sides and ends of this car are built of interwoven vertical and horizontal strips of iron 4. Inside of the lattice sides and ends there preferably is a lining of wire-netting 5.

The bottom of the car is formed of sections of grating 6. These grate-sections are preferably hinged at their outer edges to the side frames. A shaft 7 is arranged longitudinally of the center of the car, and chains 8, connected with the inner edges of the grate-sections, are wound upon the shaft. This shaft is provided with a crank 9, a ratchet 10, and pawl 11, so that the grate-sections may be easily opened downwardly to dump the material after it has been carbonized. Over the wheels and axles an inclined flooring 12 is arranged, and around the inside bottom edges of the frame are inclined moldboards 13, which chute the material that has been carbonized to the holes when the grate-sections are opened for dumping.

Over the car is a sheet-iron hood 14, that closely fits the frame and extends downwardly below the grate-sections almost to the level of the track. This hood is tight at the top, sides, and ends and open at the bottom only. There is but little space between the lattice-work sides and ends of the car and the hood.

This car is particularly adapted for holding pieces of compressed peat while being coked. The hood is removed and pieces of peat loaded into the car in any desired manner. When the car is full, the hood is replaced and the car drawn or pushed into a coking-kiln and subjected to the action of the heat in the kiln for several hours. The hood being open at the bottom only and the drafts of the kiln being so arranged that the heat-currents flow downwardly about the car, the peat is protected from the direct action of the products of combustion and only subjected to such heat as is radiated through the hood and up from the open bottom. With this form of hood the heavier moisture which is dried from

the peat drops to the bottom and passes away with the products of combustion, while the lighter volatile constituents rise and are retained in the hood. After the material has been sufficiently heated the car is run along the track out of the kiln into a cooler, which may be a tank with just enough water to seal the opening in the bottom of the hood and prevent the escape of any gases from the interior. When the coked material is cold, the car may be rolled to any suitable place and the material dumped through the bottom by opening the grate into a delivery cart or car. The volatile gases which rise from the peat when it is heated do not escape, for the hood is only open at the bottom. In fact, there is but little circulation any way in the car, and only the heavy vapors and moisture which settle pass out at the bottom with the products of combustion when the car is in a kiln. The peat is never subjected to the direct action of the products of combustion, so that none of it is consumed, and it can be quickly cooled by running the car into shallow water in such manner that none of the volatile constituents which make the coked peat valuable as a quick-igniting fuel escape.

We claim as our invention—

1. A carbonizing-car consisting of a frame mounted on wheels, lattice sides and ends, a sectional dumping-grate bottom and a hood

fitting the frame, said hood having closed sides, ends and top, substantially as specified.

2. A carbonizing-car consisting of a frame mounted on wheels, a sectional dumping-grate bottom and a hood fitting the frame, said hood having closed sides, ends and top and open at the bottom only, substantially as specified.

3. A carbonizing-car consisting of a frame mounted on wheels, lattice sides and ends and a hood fitting the frame, said hood having closed sides, ends and top and open at the bottom only, substantially as specified.

4. A carbonizing-car consisting of a frame mounted on wheels, lattice sides and ends, a sectional dumping-grate bottom, a shaft, chains connecting the shaft with the sections of the grate for opening and closing the grate, and a hood fitting the frame, said hood having closed sides, ends and top and open at the bottom only, substantially as specified.

5. A carbonizing-car consisting of a frame mounted on wheels, a dumping-grate bottom and a hood fitting the frame, said hood having closed sides, ends and top and open at the bottom only, substantially as specified.

CASPAR W. METTLER.

ADOLF METTLER.

JACOB METTLER.

Witnesses:

H. R. WILLIAMS,

T. H. ROCKWELL.