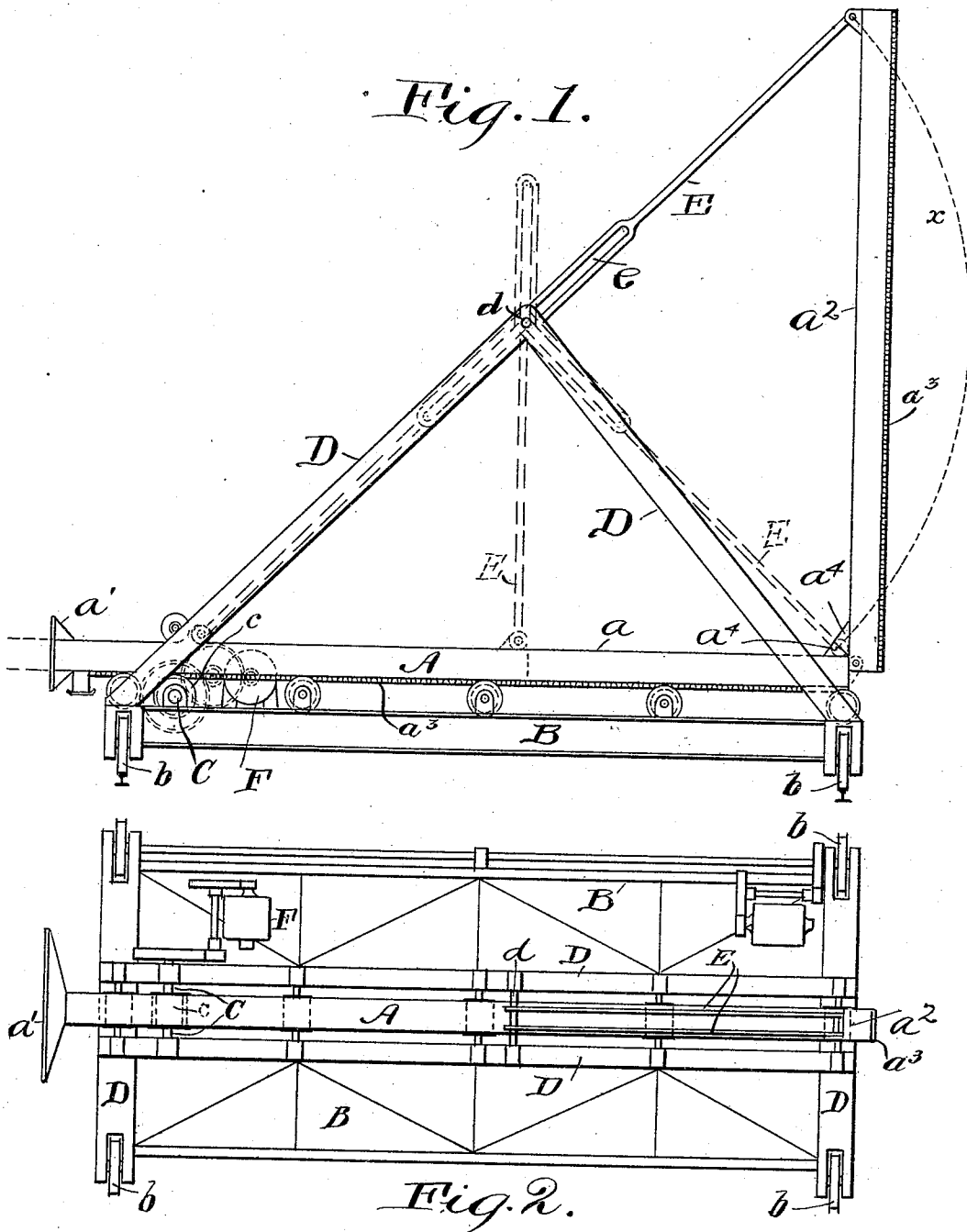


J. E. A. MOORE.
FOLDING COKE AND COAL HANDLING MACHINE FOR COKE OVENS.
APPLICATION FILED AUG. 7, 1908.

959,246.

Patented May 24, 1910.



WITNESSES:
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UNITED STATES PATENT OFFICE.

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FOLDING COKE AND COAL HANDLING MACHINE FOR COKE-OVENS.

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Specification of Letters Patent.

Patented May 24, 1910.

Application filed August 7, 1908. Serial No. 447,378.

To all whom it may concern:

Be it known that I, JAMES E. A. MOORE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Folding Coke and Coal Handling Machines for Coke-Ovens, of which the following is a full, clear, and exact description.

The machine embodying the invention is designed especially for use in connection with coke ovens for pushing the coke out of the same, and for leveling therein the coal from which the coke is made.

The primary object of the invention is to provide a machine adapted for this use, which shall occupy little yard space.

The invention consists of a ram composed of a plurality of sections hinged together, combined with suitable means for supporting said ram and moving it endwise and for automatically causing the rear sections to swing out of alinement when the ram is moving backward and for causing them to swing into alinement with each other as the ram is moved forward, substantially as hereinafter described and definitely set forth in the claims.

In the drawing, Figure 1 is a side elevation, and Fig. 2 is a plan view of the preferred embodiment of the invention.

Referring to the parts by letters, A represents the ram which is composed of a front section a , carrying at its front end a suitable head a' , and one or more additional sections a^2 , said sections being hinged together serially. The ram is supported and guided on a carriage B having wheels b adapting it to run on tracks extending in front of a plurality of coke ovens. The lower sides of the ram sections are provided with rack teeth a^3 adapted to be engaged by a pinion c on a shaft C,—said shaft being mounted on the carriage B and driven by a motor F also mounted on said carriage. As this pinion is rotating in one direction or the other, the ram will be moved forward or backward as the case may be. The rack and pinion mechanism described is but one of numerous forms of mechanism which may be employed for imparting to the ram its forward and backward movement. So far as the present invention, broadly defined, is concerned, any suitable mechanism may be employed for this purpose.

When the ram is moved backward the rear sections are swung upward out of alinement with each other; and as the ram is moved forward this section or these sections, as the case may be come automatically into alinement with each other, and with the front section. In the construction shown there is but one rear ram section a^2 , its front end being hinged to the rear end of the front section a . Secured to the tops of these two sections near the joint are two angle plates a^4 which form stop lugs that engage with each other just before or just at the time when the rear section has been swung into its retracted position at a right angle or any other suitable angle with the front section and limit the hinge movement.

A frame D, D, is erected on the carriage and suitably braced. At its upper end is a cross shaft d which passes through the slot e in a link E,—the outer end of said link being pivoted to the rear end of the ram section a^2 .

If, when the parts are in their relative position shown in Fig. 1, the ram is moved forward, the rear end of the rear ram section will follow the path indicated by the curved dotted line x , being compelled so to do by link E. When said rear end has moved through that said path, the rear section a^2 will be alined with the front section a . During the further forward movement of the ram, the link E has no function, but simply slips idly up upon shaft d . When the ram is moved rearward, this link, by its action on the rear ram section will cause said section to swing up into the position shown in Fig. 1. This link E with its slotted end e is considered preferable to chains or other flexible connections which, when slack, fall into loops or bights that are liable to become entangled with other moving parts of the machine and impede or possibly injure them. The ram may be composed of the front section a , and a plurality of rear sections a^2 pivoted together serially, as shown. Angle plates a^4 secured to these various sections near their pivots limit the angular movement of each relative to the other.

It will be apparent from the foregoing that the invention is embodied in a specific form embracing the essential characteristic, namely, that the ram is composed of a front section and one or more rear sections pivoted together serially, and that said ram is

combined with mechanism by which the rear sections are swung out of alinement when the ram is drawn backward and into alinement when it is moved forward.

5 Having described my invention, I claim:

1. In a machine for pushing and leveling coke, coal and analogous material, the combination of a ram composed of a front section, and a rear section hinged together, 10 means for supporting and moving said ram forward and backward, a rigid link pivoted to the rear end of the rear section having a slot near its other end, and a fixed shaft extended through said slot.

15 2. In a machine for pushing and leveling

material, the combination of a ram composed of a front section and a rear section hinged together, means for supporting and moving said ram forward and backward, a connection between the rear end of the rear 20 section, and a fixed support, and stop lugs near the hinge pivot limiting the hinge movement of the sections relative to each other.

In testimony whereof, I hereunto affix my 25 signature in the presence of two witnesses.

JAMES E. A. MOORE.

Witnesses:

H. R. SULLIVAN,
E. B. GILCHRIST.