

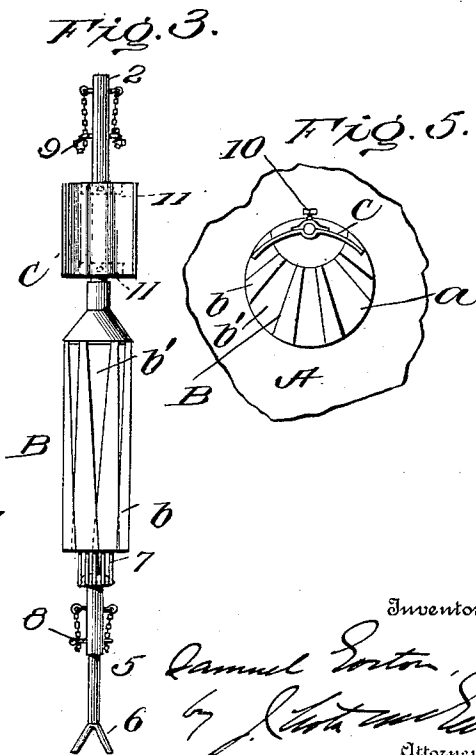
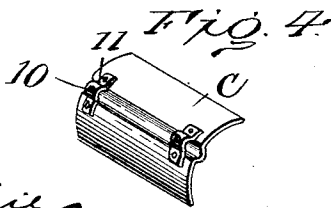
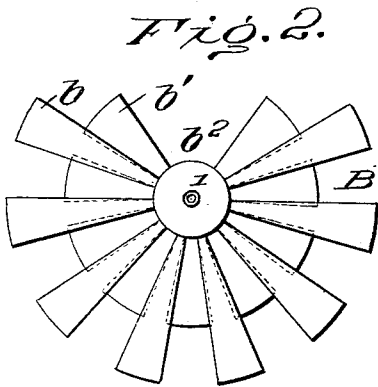
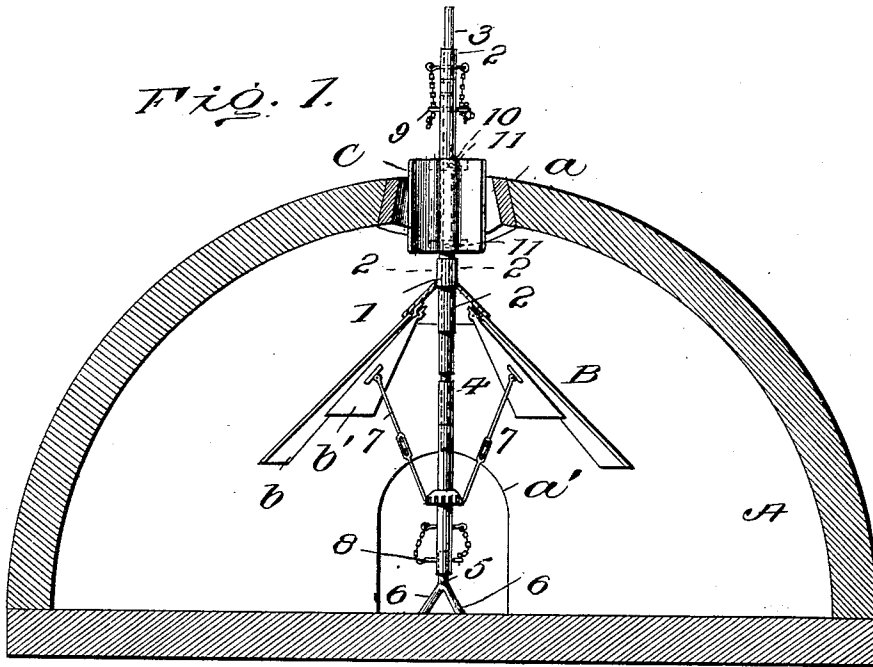
No. 655,552.

Patented Aug. 7, 1900.

S. GORTON.
COAL LEVELING MACHINE.

(Application filed Dec. 26, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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COAL-LEVELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 655,552, dated August 7, 1900.

Application filed December 26, 1899. Serial No. 741,661. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL GORTON, of Mount Pleasant, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Coal-Leveling Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention contemplates certain new and useful improvements in means for deflecting and leveling coal as it is admitted into a coke-oven.

In charging coke-ovens it is customary to so empty the lorry-cars running on tracks between two sets of ovens that the charge will pass through an opening in the top of each oven. In order that good results be obtained, it is necessary that the coal be made as level as possible, and this is ordinarily accomplished by raking the coal through a space in the top of the bricked-up doorway, and some means must be employed to prevent the coal falling directly against this doorway.

The object of my invention is to provide a simple device which can be readily inserted within an oven previous to the charge of the latter, such device having an adjustable deflector upon which the coal will be discharged, so that it will be practically even or level within the oven, requiring but slight raking on the part of the attendant. The deflector may be set at different angles, and the coal is prevented from being discharged directly against the doorway by a guard located in the opening in the top of the oven. After an oven is charged the device, which folds up like an umbrella, is readily removed and may then be inserted into the next oven to be charged.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of a coke-oven, showing my improvements. Fig. 2 is a horizontal sectional view on line 2-2, Fig. 1. Fig. 3 is a view showing the device removed from the oven and in position to permit of its passage

through the opening in the oven. Fig. 4 is a perspective view of the guard. Fig. 5 is a top plan view showing the deflector and guard therein.

Referring to the drawings, A designates a coke-oven of ordinary construction, having an opening *a* in its top and a doorway *a'* at one side, which doorway in practice is usually bricked up to near its top, sufficient space being left for the insertion of a rake to enable the attendant to do any necessary leveling of the coal.

B is a deflector which is capable of being contracted after the manner of an umbrella for passage through the hole *a* and which may be expanded to the desired extent after insertion in the oven. The deflector is shown as made up of long and short tapered sections *b* and *b'*, alternately arranged and radiating from a common center, an intervening space *b²* being left between two of the sections *b'*, so as to face the doorway *a'*. Each of these sections of the deflector is hinged at its inner end to the cone-like portion of a barrel 1, which is fast on a tube 2. Through this tube 2 is passed a rod 3, which at its lower end rests on a second tube 4, the latter at its lower end having a leg 5, formed with lateral branches 6. To the lower tube 4 are secured the lower ends of a series of braces 7, which at their outer or upper ends are pivotally secured to the under sides of the hinged sections *b'*. The connections of the braces to the hinged sections are so arranged as to permit of all the sections being folded in, as shown in Fig. 3. It will be noticed by reference to Fig. 2 that the long sections *b* fit over the spaces between the sections *b'*, so that their positions are controlled by the latter. Hence it is not necessary to provide braces for the sections *b*, the latter being raised and lowered through the movements of the short sections of the deflector. The lower tube 4 is secured to the leg 5 by a bolt 8, passed through any one of a series of holes in said leg, and the upper tube 2 may be held at different points on rod 3 by means of a bolt 9, passed through any one of a series of holes formed in said rod. In this way the inclination of the deflector may be adjusted.

When the device is inserted in an oven and the leg 5 rests on the bottom of the latter, the downward movement of tube 2 on rod 3 will by reason of the braces 7 being secured to the tube 4 effect the expansion of the deflector.

C is a guard which is in practice located within the opening *a* for the purpose of preventing coal dumped into the oven from falling directly toward the doorway. This guard is of concavo-convex formation and at its center is secured upon the tube 2 by set-screws 10, working in loops 11 on the convex side of the guard.

In practice my improved device may be carried on the side of a lorry-car. As an oven is to be charged the device, which is closed, as shown in Fig. 3, is inserted through the opening *a*. When its leg 5 contacts with the bottom of the oven and the tube 2 moves downward on rod 3, the sections of the deflector will spread outward, the leg 5, tube 4, and rod 3 constituting the frame upon which the tube 2 is movable longitudinally. By the insertion of pin 9 through any one of the series of holes in rod 3 the sections of the deflector may be held at the desired inclination. The guard C at its ends bears against the wall of the opening *a* and is in line between the lorry-car and the doorway of the oven. The coal upon being emptied into opening *a* will strike the guard C and fall upon the deflector B, passing over the series of radiating sections and discharged evenly on the floor of the oven. When the latter has been thus charged, the operator removes the pin 9, if the same has been inserted to lock the tube 2 to rod 3, and then grasps this tube, pulling upwardly on the device and causing it to close, as shown in Fig. 3, to permit of its being withdrawn from the oven. It is not absolutely essential that the sections of the deflector be made of different lengths, but I have found that the outer longer sections *b* are of advantage in distributing fine coal and slack.

The advantages of my invention are apparent to those skilled in the art. It will be seen that I have provided extremely-simple means for use in connection with coke-ovens, whereby not only is the coal deflected from striking against the bricked-up doorway with force sufficient to displace the bricks, but an equal distribution is had over the floor of the oven.

I claim as my invention—

1. A device of the character herein described having an umbrella-like contractible and expansible deflector capable of being inserted into a coke-oven, means for supporting the same, and a guard above the deflec-

tor designed to be located in the opening in the oven-top, substantially as set forth.

2. A device of the character herein described having an inclined deflector composed of a series of separate sections each of which is hinged at one end, means for holding said sections expanded, and means for adjusting the inclination of the deflector, substantially as set forth.

3. The combination with a coke-oven, of a deflector located beneath the opening in the top of such oven, said deflector being composed of series of separate sections of different lengths, each section being hinged at one end, means for holding the sections extended, and means for closing such sections when they are to be passed through the opening in the oven, as set forth.

4. The combination with a coke-oven having an opening in its top, of a deflector comprising a series of hinged sections, a vertical support for said deflector designed to extend through said opening, means for holding said sections extended, and a guard on said support located within the opening of the oven and above the deflector, as and for the purpose set forth.

5. The device herein described comprising an upright frame, a movable portion mounted on said frame and capable of being secured thereto at different points, a series of sections hinged to said movable portion, and a series of braces secured to said frame and also to some of the hinged sections, whereby as the movable portion is lowered on the frame the sections of the deflector will be extended, substantially as set forth.

6. The device herein described having a frame comprising an upright rod, a tube movable on said rod, means for holding said tube at different points on the latter, a deflector composed of a series of hinged sections, a guard carried by said tube, and a series of braces secured to the frame and to some of the said hinged sections, substantially as set forth.

7. The device herein described having a movable tubular portion, a deflector carried thereby having a series of hinged sections, brace-rods secured to some of said sections, and a guard of concavo-convex formation secured on said tubular portion, substantially as and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SAMUEL GORTON.

Witnesses:

EUGENE WARDEN,
A. J. SMITH.