

(No Model.)

J. M. DODGE.

PROCESS OF REMOVING PILES OF COAL.

No. 537,680.

Patented Apr. 16, 1895.

FIG 1

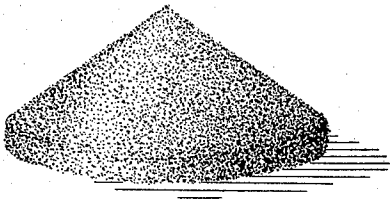


FIG 2

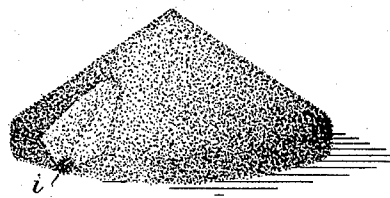


FIG 3

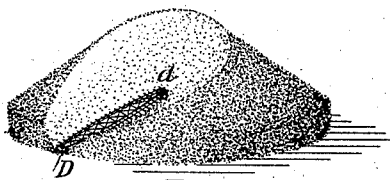


FIG 4

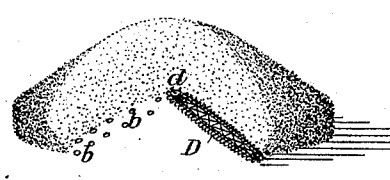
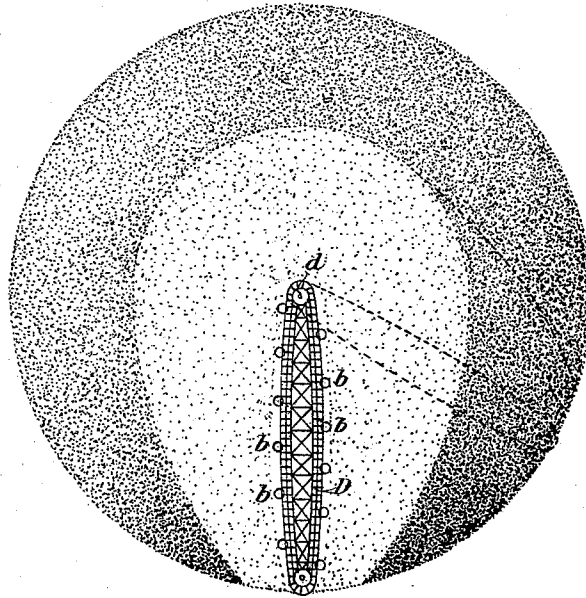


FIG 5



WITNESSES

R. Schlicher
Will. A. Barr.

INVENTOR

James M. Dodge
By his Attorneys
Houston & Houston

UNITED STATES PATENT OFFICE.

JAMES M. DODGE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
DODGE COAL STORAGE COMPANY, OF NAUGATUCK, CONNECTICUT.

PROCESS OF REMOVING PILES OF COAL.

SPECIFICATION forming part of Letters Patent No. 537,680, dated April 16, 1895.

Application filed May 9, 1884. Serial No. 510,601. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. DODGE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented a certain Process of Removing Piles of Coal or Analogous Material, of which the following is a specification.

The object of my invention is to remove the contents of a conical pile of coal, or analogous material, such as broken rock, sand, grain, &c., in such a manner that the particles composing the pile will not be crushed, or otherwise injured.

In the accompanying drawings—Figure 1, is a perspective view of a conical pile of coal. Fig. 2, is a perspective view illustrating the first step of the process. Fig. 3, is a perspective view illustrating the second step of the process; and Fig. 4, is a view illustrating the final step of the process. Fig. 5, is a plan view illustrating the process.

My invention relates particularly to the removal of large piles of coal, or analogous material, which are piled at a great height. These piles are in most cases conical, being piled by apparatus such as that set forth in the patents granted to me on August 20, 1889, No. 409,636, and on February 17, 1891, No. 446,314.

In some instances, the pile may not be an absolute cone, owing to the fact that the material has not been carried high enough, but the pile will be such that when the pile is attacked at the bottom, the material will flow by gravity in the manner which I will now proceed to describe.

The pile shown in Fig. 1, for instance, is first attacked at the base, and preferably at the outer edge as shown in Fig. 2. The floor upon which the coal is piled may have embedded within it a conveying trough extending from the center of the pile to the periphery, and in this conveyer trough may travel a conveyer *a*, Fig. 5, for carrying coal from the trough to the discharge point. The floor directly above the conveyer trough may have a series of valved openings *b*, so as to allow coal from the pile to flow into the trough by gravity when the valves are opened and preferably arranged directly above the trough on the floor is a movable conveyer *D*, preferably

pivoted at the center *d* of the pile, so as to swing around and remove coal from the pile. This construction is fully illustrated in the patent granted to me on August 1, 1893, No. 55 502,555.

It will be understood that other means may be employed for removing the pile, in the manner which I will now proceed to describe, but I prefer to use the construction shown in said 60 patent.

If, for instance, the pile is of the shape shown in Fig. 1, of the drawings, I first remove material from the pile preferably at the point *i*, (Fig. 2,) near the periphery, the material flowing by gravity as the process of removal is continued making the incision in the pile as clearly shown in Fig. 2. The coal will always seek its angle of repose except in cases where it is frozen, or in which the material is of such a character that the particles will adhere one to another. The incision is made from the point *i* to a point at or near the center of the pile, forming a radial channel the pile assuming the shape shown in Fig. 3, the 75 top of the pile being entirely removed and a conical opening formed therein. When the apparatus described above is used this first step in the removal of the pile exposes the pivoted conveyer *D*, and if the balance of the coal is to be removed the conveyer is put in motion and travels around its axis at the center of the pile, so as to remove the coal in an annular path around the center, as shown in Fig. 4, the coal falling by gravity into the 85 moving conveyer which carries the coal in the present instance to the center of the pile and there discharges it to the underground conveyer *a*.

By the above described process I am enabled to operate the several parts connected with the apparatus to remove the pile without subjecting them to very great pressure, the coal from the beginning falling by gravity into the conveyer by which it is carried away 95 from the pile.

It will be understood that in some instances a portion of the pile will be removed and the piling apparatus may pile fresh material upon the partially cut away pile, but ordinarily the 100 process will be carried out to its full extent.

I claim as my invention—

1. The process herein described of removing material from a pile, said process consisting in first removing the material on a line to form a radial channel in the pile and second removing the material in an annular path commencing at the radial line, substantially as described.

2. The process herein described of removing piles of coal or other material, said process consisting in first beginning the removal of the material at the periphery of the pile,

second removing a portion of the pile in a line directly toward the center and finally removing the portion of the pile in an annular path around the center, substantially as described. 15

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

JAMES M. DODGE.

Witnesses:

WILL. A. BARR,

JOSEPH H. KLEIN.