

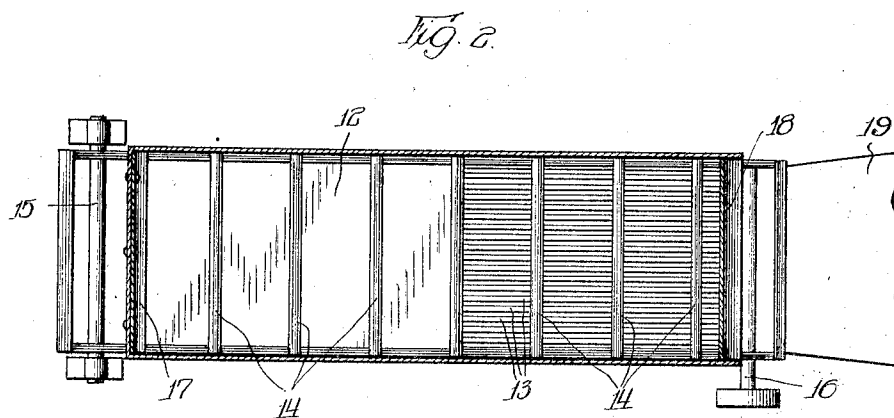
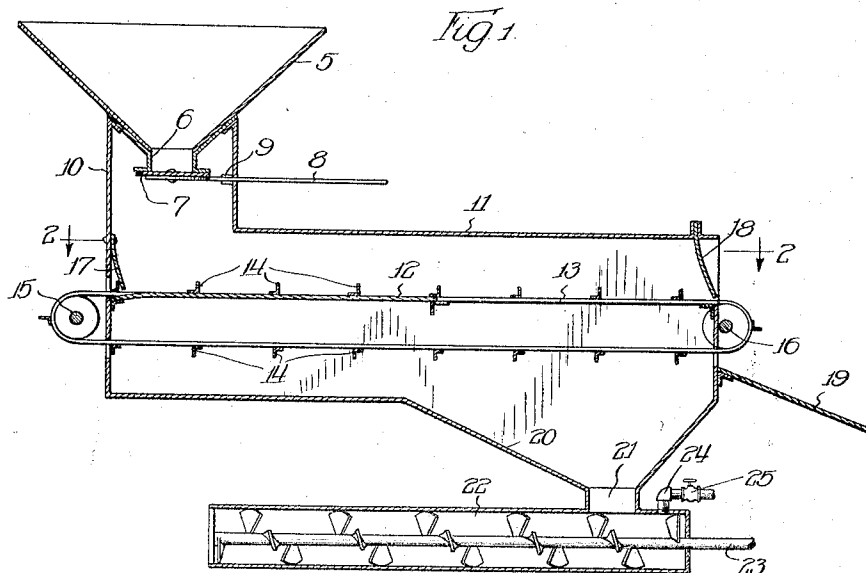
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DUST RECEIVER

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UNITED STATES PATENT OFFICE.

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DUST RECEIVER.

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This invention relates to a new and improved dust receiver, or more specifically to an improved dust receiver particularly adapted for application to a dust catcher
5 bottom and including means adapted to moisten or wet the dust discharged therefrom.

In gas making systems and particularly those handling blast furnace or producer
10 gas, it is customary to place in the gas line adjacent the producing source a dust catcher for the purpose of removing the fine particles of material carried by the gas. Much of this matter is in a very finely divided form
15 and in its removal in the periodic cleaning of the dust catcher it tends to be readily blown away by the air and thus becomes a considerable nuisance in the plant.

It is an object of the present invention to
20 provide means adapted to select from the material discharged from the dust catcher the larger pieces of material and discharge them in one place, and to separately discharge the finely divided matter.

25 It is a further object to provide means for thoroughly dampening the finely divided matter so that it has no tendency to be carried away by the air.

It is a further object to provide means for
30 uniformly and continuously discharging the moistened material when desired.

Other and further objects will appear as the description proceeds.

Broadly, my invention comprises a closed
35 chamber associated with the discharge opening of the gas cleaner or dust catcher. In this chamber is provided a plate located below the discharge opening and a grizzly associated with the plate in prolongation
40 thereof. A drag conveyor is provided to sweep the material along the plate and across the grizzly, and to discharge the larger pieces off the end of the grizzly. A chute is provided below the grizzly discharging into
45 a pug mill. Water connection is provided to the pug mill whereby material passing through is moistened and the moisture is uniformly distributed by the action of the mill.

50 I have illustrated a preferred embodiment of my invention in the accompanying drawings, in which—

Figure 1 is a sectional elevation showing my invention applied to the discharge end
55 of a dust catcher; and

Figure 2 is a horizontal section taken on line 2—2 of Figure 1.

The bottom 5 of the dust catcher is shown as in the shape of a hopper and is provided with a discharge opening 6. This opening
60 6 is normally closed by the laterally movable door 7, the door being carried by a handle 8 and pivoted at 9 to the upwardly extending portion 10 of the chamber 11. The chamber 11 is provided with the transversely
65 extending plate 12 located at the end under the discharge opening from the dust catcher. Extending in continuation of this plate 12 is the grizzly 13. The drag conveyor 14 carried upon shafts 15 and 16 at the opposite ends
70 of the chamber serves to carry material over the plate 12 and grizzly 13. The shafts 15 and 16 as shown are placed externally of the chamber 11. The heavy flexible screening member 17 is associated with the incoming
75 opening for the conveyor and the outgoing opening is closed by a similar member 18. A chute 19 is provided at the outgoing end. The lower portion 20 of the chamber 11 located under the grizzly 13 is in the form
80 of a hopper sloping toward the discharge opening 21. Located below the opening 21 is the pug mill 22. The shaft 23 may be supplied with power in any desired manner. The water connection 24 is provided with
85 valve 25 and is led into the inner end of the pug mill.

In the operation of my device, when it is desired to remove the accumulated material from the dust catcher, the door 7 is moved
90 laterally by means of the handle 8 about the pivot 9 until it is out of registration with the opening 6. The conveyor 14 and the pug mill 23 are placed in operation. Material falling from the opening 6 upon the
95 plate 12 is carried on this plate by means of the cross elements of the conveyor 14 and is further swept across the grizzly 13. Those particles too large to drop between the bars of the grizzly are carried over the
100 end of the grizzly by the conveyor and fall down upon the chute 19. The fine material dropping through the grizzly is led by the hopper 20 to the discharge opening 21 where it falls into the pug mill. The rotation of
105 the shaft 23 of this mill serves to carry the material out the discharge end of the mill.

Water being supplied during the operation of the mill through the pipe 24, the fine material is moistened and due to the
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stirring and kneading operation of the mill plates the moisture is thoroughly and uniformly directed onto the material. A car or other receptacle is placed under the discharge end of the material and the moistened material is removed for briquetting or other purposes as desired. In its moist state it has no tendency to be diffused in the atmosphere.

It is to be understood that the apparatus is only put in operation periodically and for short periods at such times as it is desired to clean out the dust catcher. Obviously the size and proportion of the elements may be varied to suit differing requirements and the clearance between the bars of the grizzly may be varied according to what division it is desired to make between large and small particles.

I claim:

1. Dust treating apparatus comprising a substantially closed chamber adapted to be located below the discharge opening of a dust catcher, a plate located in said chamber

below said opening, a grizzly located in prolongation of the plate, a drag conveyor associated with the plate and grizzly and adapted to move material deposited in said plate over said grizzly, a hopper below said grizzly, and a pug mill located at the lower end of said hopper.

2. Dust treating apparatus comprising a substantially closed chamber adapted to be located below the discharge opening of a dust catcher, a plate located in said chamber below said opening, a grizzly located in prolongation of the plate, a drag conveyor associated with the plate and grizzly and extending out of the chamber and adapted to move material deposited on said plate over said grizzly, and yielding means closing the chamber adjacent said conveyor and adapted to prevent passage of dust from the conveyor.

Signed at Chicago, Illinois, this 11th day of May, 1921.

FREDERICK H. WILLCOX.