

June 16, 1942.

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2,286,844

COAL SUPPLYING MECHANISM FOR STOKERS

Filed Sept. 13, 1937

2 Sheets-Sheet 1

FIG. 1.

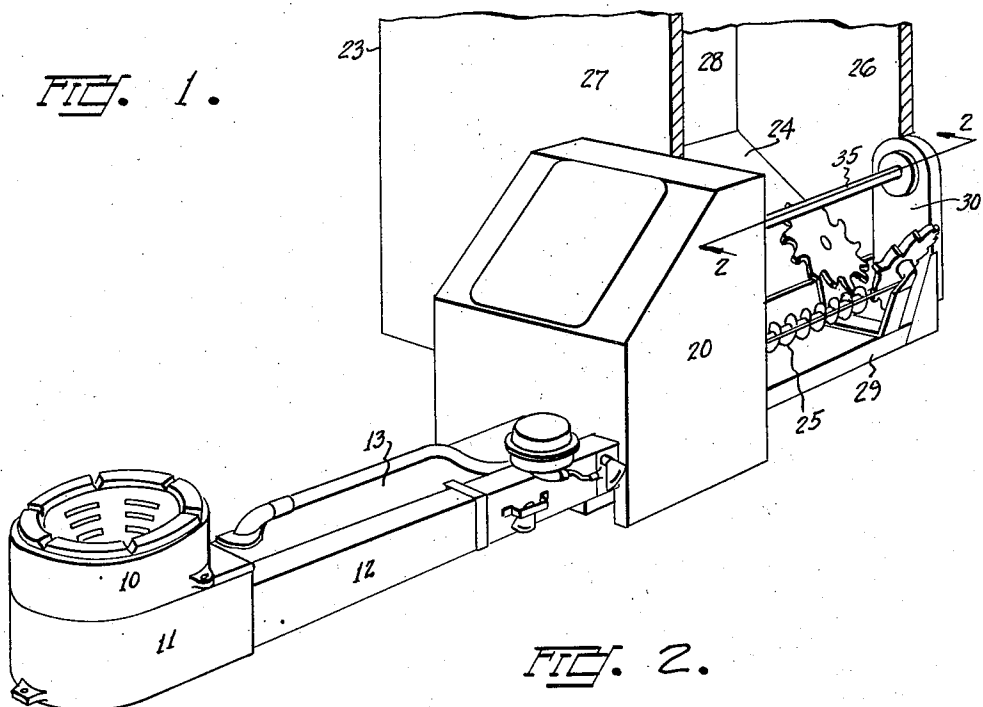
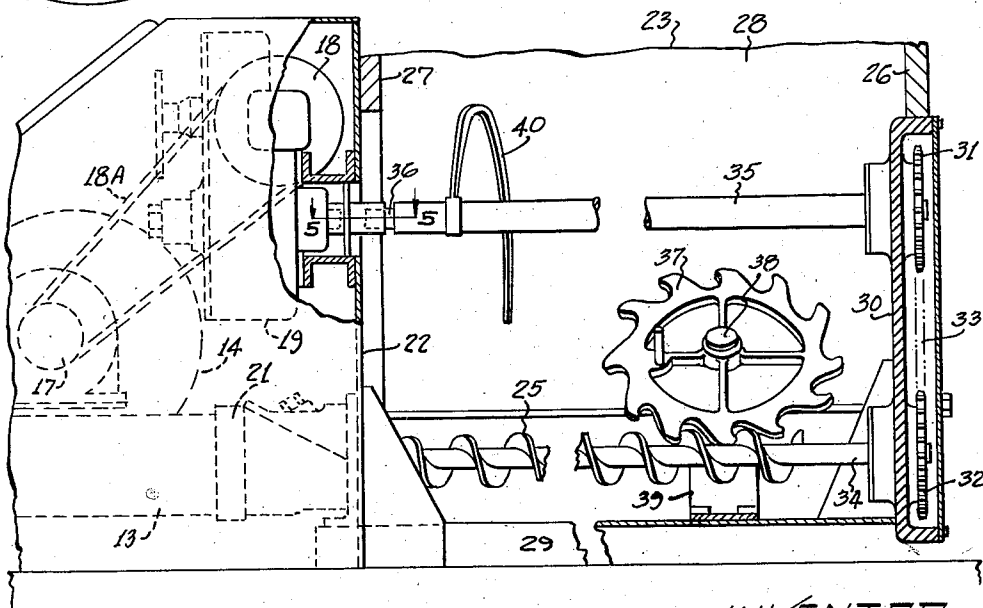


FIG. 2.



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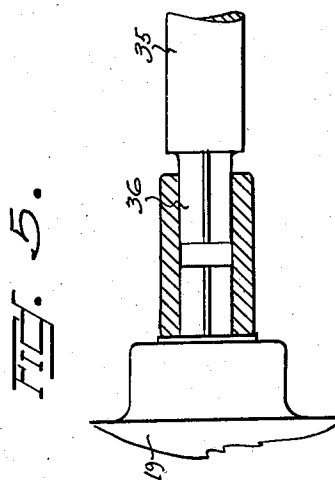
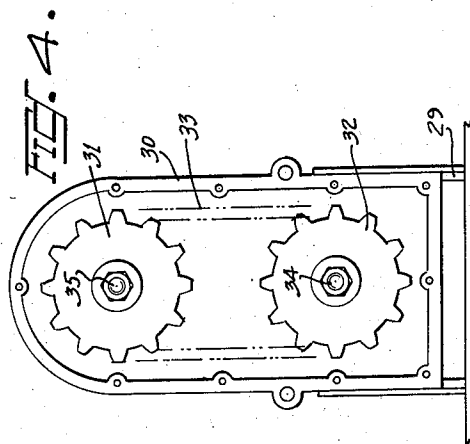
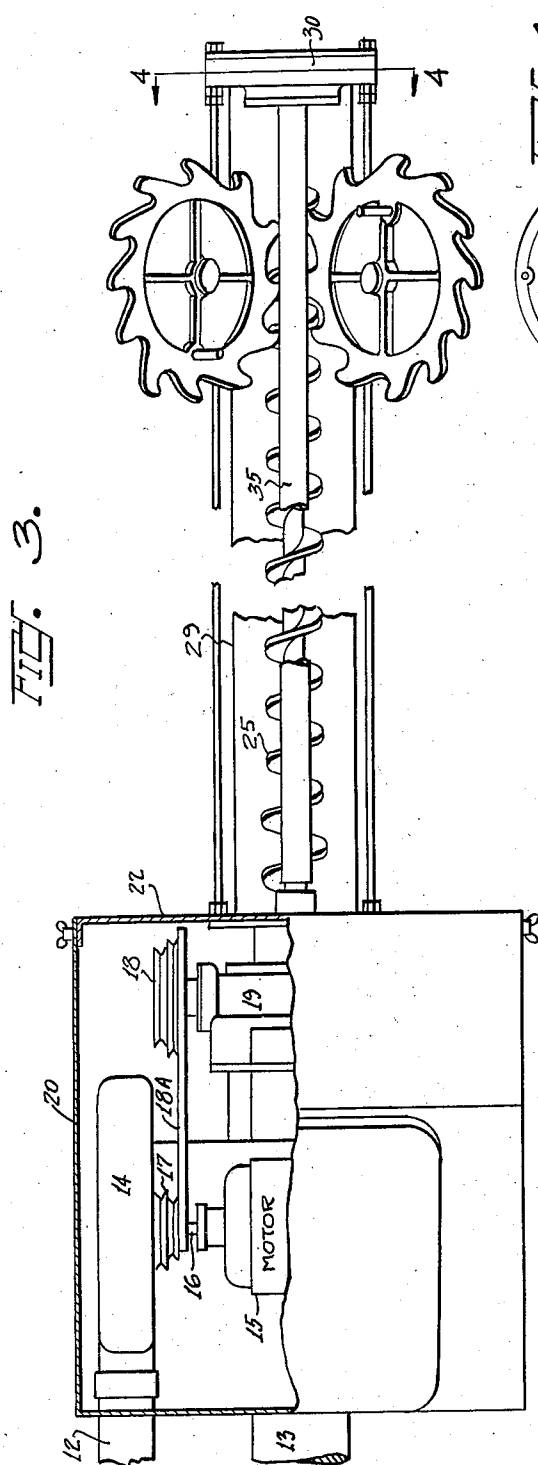
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2 Sheets-Sheet 2



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2,286,844

COAL SUPPLYING MECHANISM FOR
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Iron Fireman Manufacturing Company, Port-
land, Oreg.

Application September 13, 1937, Serial No. 163,595

3 Claims. (Cl. 259-4.6)

This invention relates generally to coal stokers, and particularly to a coal supplying mechanism therefor.

The main object of this invention is the construction of a stoker and a coal supplying mechanism therefor by means of which coal may be drawn from a bin.

The second object is to construct a coal supplying mechanism especially adapted for use in stokers in which the main driving mechanism is disposed between the point of coal storage and the point of combustion.

I accomplish these and other objects in the manner set forth in the following specification as illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of a stoker equipped with my device showing a part of the coal bin broken away in section.

Fig. 2 is a section taken along the line 2-2 in Fig. 1.

Fig. 3 is a horizontal section through the coal feeding worm with parts thereof broken away in section.

Fig. 4 is a section taken along the line 4-4 in Fig. 3.

Fig. 5 is a section taken along the line 5-5 in Fig. 1.

Similar numerals refer to similar parts throughout the several views.

Referring in detail to the drawings, there is shown a retort 10 into whose base 11 extends the air duct 12 and the coal tube 13. Air is supplied to the duct 12 by means of the fan 14 which is driven by a motor 15. The shaft 16 of the motor 15 is provided with a stepped pulley 17 which is in alignment with a similar pulley 18 of the transmission 19. A belt 18-A connects the pulleys 17 and 18. A casing 20 encloses the fan 14, the motor 15 and the transmission 19.

The tube 13 extends from the base 11 to the clean-out box 21 which is secured to the plate 22 of the coal bin 23 whose bottom sides 24 slope downwardly toward the coal feeding worm 25 which extends from the retort 10 to the rear wall 26 of the coal bin 23. The front wall 27 of the coal bin 23 may be close to the casing 20 if desired. The side walls 28 may form a portion of the wall of the building in which the stoker is placed or may be separately made as desired.

Referring more particularly to my invention, it will be noted that there extends from the casing 20 a horizontal base 29 upon whose outermost end is mounted a standard 30 which is a housing for the sprocket wheels 31 and 32 which are con-

nected by means of a chain 33. The sprocket wheel 32 is mounted on the shaft 34 of the coal feeding worm 25 which journals in the standard 30. The sprocket wheel 31 is mounted on the shaft 35 which journals in the standard 30 and is driven through the square coupling pin 36 from the transmission 19.

In order to prevent the coal from arching in the bin 23, I have provided the agitator wheels 37 which are pivotally mounted on the bearings 38 which are supported by the brackets 39 which rise from the base 29. The agitator wheels 37 mesh with the coal feeding worm 25 and the rotation thereof causes the wheels 37 to rotate and thereby prevent arching of the coal.

It is desirable in some instances to provide a yieldable agitating arm 40 on the shaft 35 in front of the agitator wheels 37. In other instances, it may be desirable to provide more of the wheels 37 or more of the arms 40.

The operation of that portion of the device which forms the subject of the present invention is as follows:

When the motor 15 is operated, it causes the transmission 19 to be operated which in turn causes the shaft 35 to rotate. The rotation of the shaft 35 is transmitted through the sprocket wheels 31 and 32 to the same shaft 34 thereby causing the coal feeding worm 25 to rotate and convey coal from the bin 23 to the retort 10.

In order that this invention may be more clearly understood, it is explained that in the common type of coal stokers, coal is placed in a relatively small hopper and this hopper is disposed between the retort and the drive mechanism. The small hopper must of course be filled as often as it is empty which is objectionable from the standpoint of automatic heat requirements. By the use of my device, it is possible to draw coal directly from the bin without the necessity of repeatedly filling the small hopper.

It must be understood that while I have illustrated the shaft 35 as being directly above the coal feeding worm 25, it may also be placed in other relative positions without departing from the spirit of this invention.

Stoker details which have no bearing on the present invention but which have been illustrated are not specifically described herein.

I claim:

1. In a stoker, a hopper consisting of an elongated, horizontal base having standards at opposite ends thereof, a coal feeding worm disposed above said base, a horizontal drive shaft disposed above said worm and base and in the same plane

therewith and journaling in said standards, means for driving said worm and said drive shaft at the end thereof farthest from the delivery end of said worm, and a hopper casing independently enclosing said base.

2. In a stoker, a hopper consisting of an elongated, inverted, horizontal channel constituting the hopper base, an upright standard mounted at one end of said base, a coal worm having its driving end journaling in said standard, a drive shaft having its driven end journaling in said standard, means for drivably connecting the driven end of said shaft with the driving end of said worm, a V shaped bracket mounted on said

base, each end of said bracket having an agitator sprocket wheel mounted thereon and meshing with said worm, the two wheels forming a V shaped saddle directly under said drive shaft and a hopper casing enclosing said sprocket wheels and coal worm independently of said agitating wheels.

3. A stoker hopper described in claim 2 characterized by having a resilient arm mounted on said drive shaft at the outlet end of the hopper and having said arm so formed as to move materials away from the outlet end of said hopper.

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