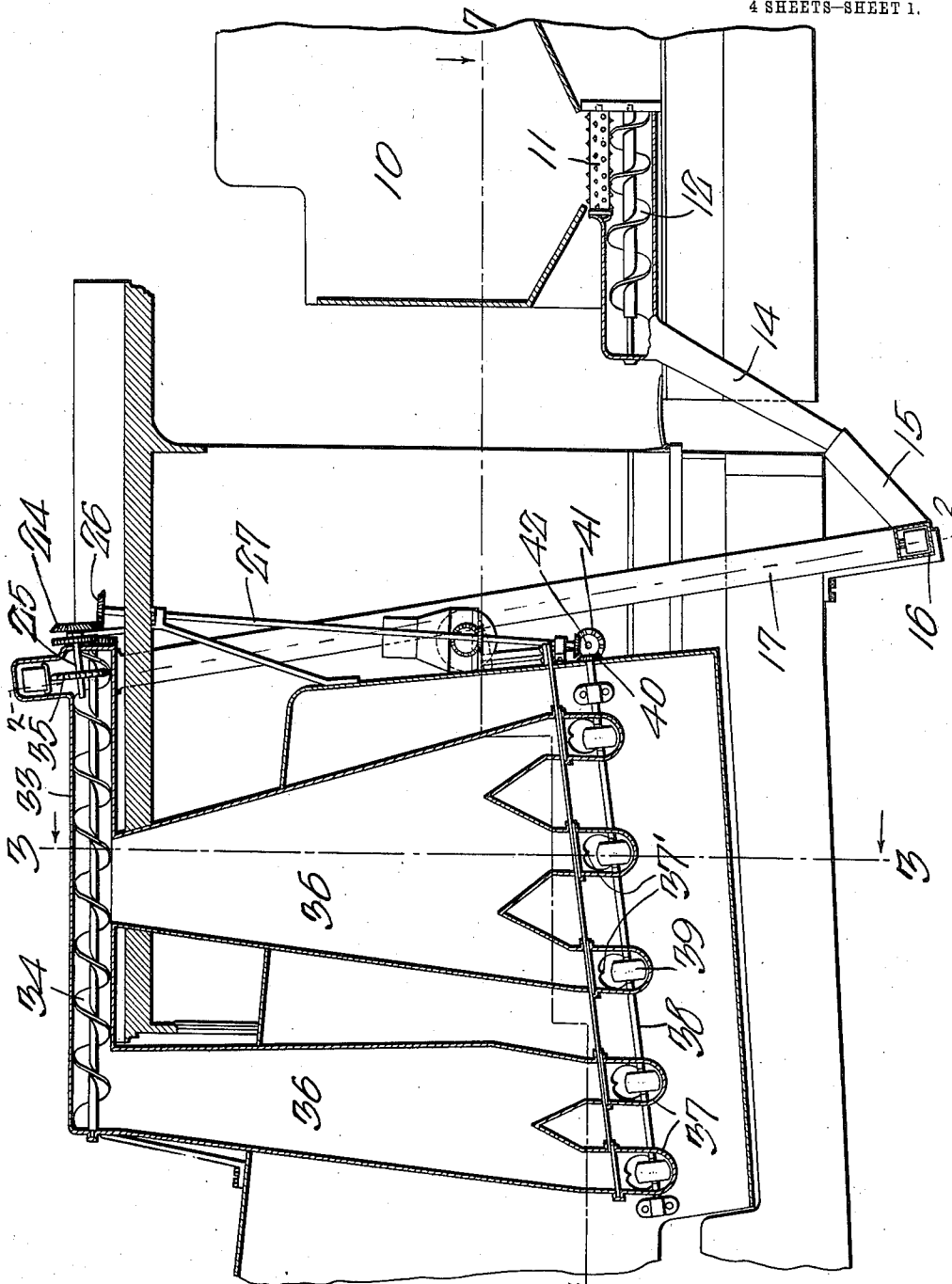


F. H. STROUSE.
LOCOMOTIVE STOKER.
APPLICATION FILED OCT. 20, 1911.

Patented Nov. 19, 1912.

1,044,939.

4 SHEETS-SHEET 1.



Witnesses

J. P. Tomlin
Ernest F. O'Connell

Fig. 1.

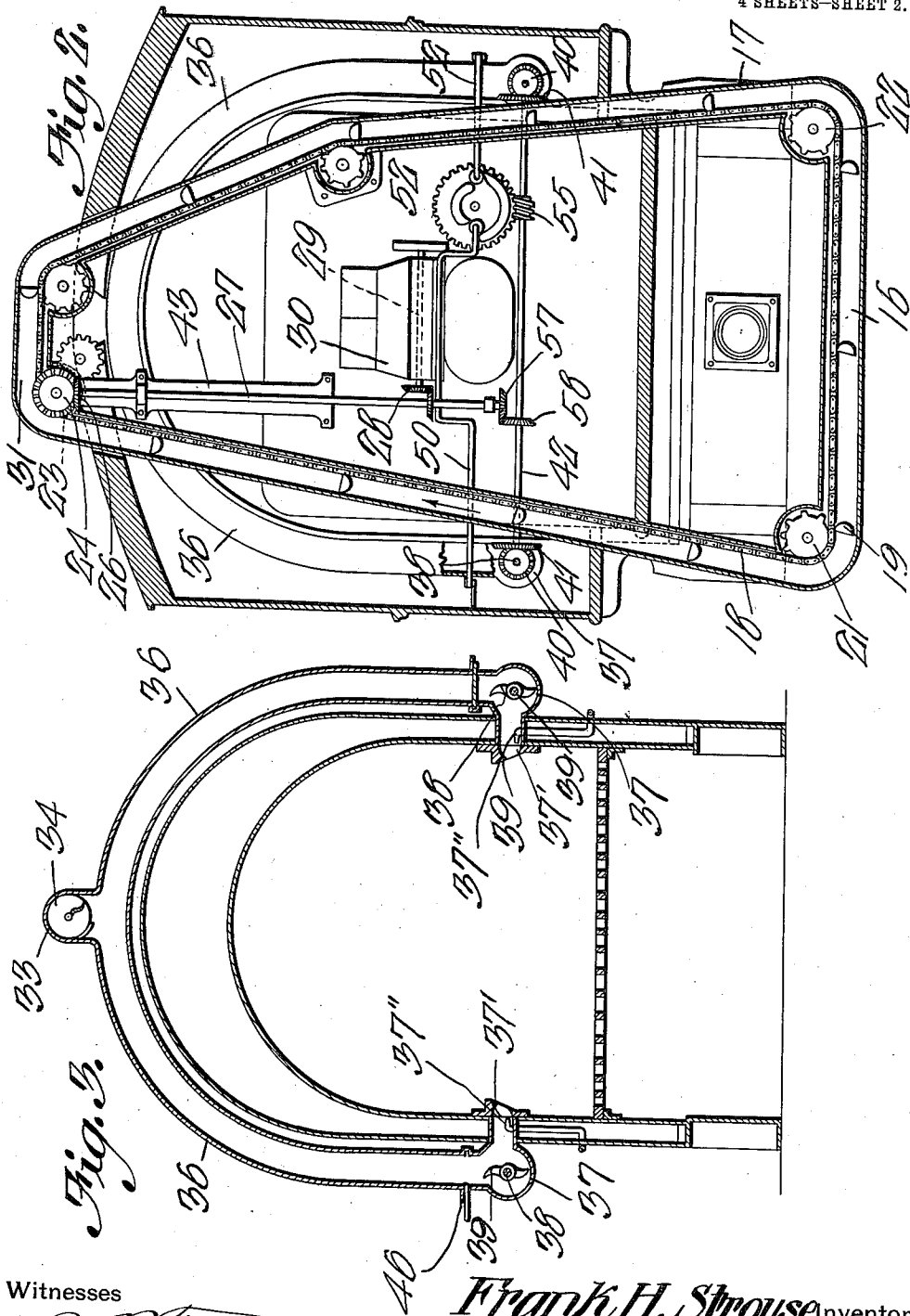
Frank H. Strouse Inventor
by *C. A. Snow & Co.*
Attorneys

F. H. STROUSE.
LOCOMOTIVE STOKER.
APPLICATION FILED OCT. 20, 1911.

1,044,939.

Patented Nov. 19, 1912.

4 SHEETS-SHEET 2.



Witnesses

James H. Strouse
James H. Strouse

Frank H. Strouse Inventor
by *C. A. Snow & Co.*
Attorneys

1,044,939.

F. H. STROUSE.
LOCOMOTIVE STOKER.
APPLICATION FILED OCT. 20, 1911.

Patented Nov. 19, 1912.

4 SHEETS—SHEET 3.

Fig. 4.

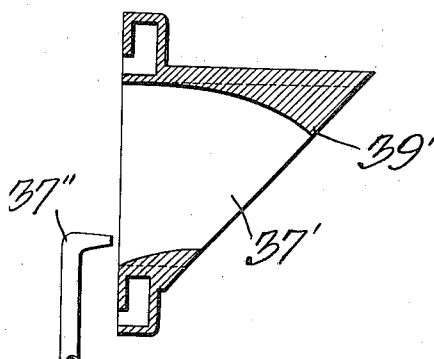


Fig. 5.

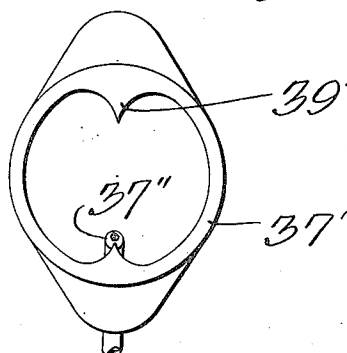
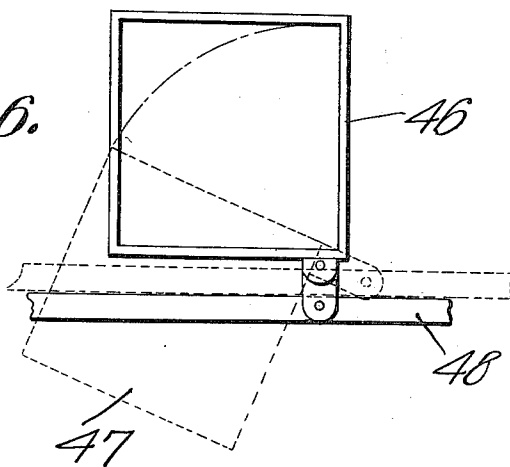


Fig. 6.



Witnesses

J. P. Tomlin
Ernest F. Riley

Frank H. Strouse Inventor

by

C. A. Snow & Co.
Attorneys

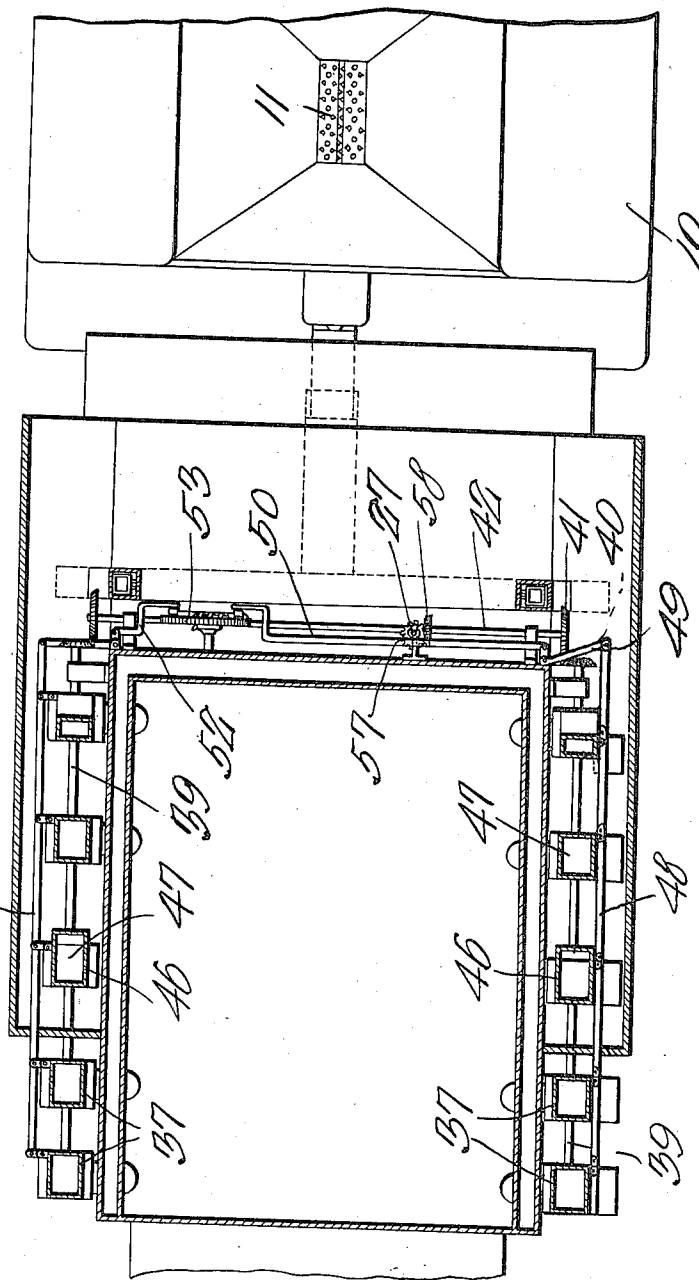
1,044,939.

F. H. STROUSE.
LOCOMOTIVE STOKER.
APPLICATION FILED OCT. 20, 1911.

Patented Nov. 19, 1912.

4 SHEETS—SHEET 4.

Fig. 7.



Witnesses

J. P. Torrey
Ernest H. Wiley

Frank H. Strouse Inventor

by

C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

FRANK H. STROUSE, OF OSKALOOSA, IOWA.

LOCOMOTIVE-STOKER.

1,044,939.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed October 20, 1911. Serial No. 655,788.

To all whom it may concern:

Be it known that I, FRANK H. STROUSE, a citizen of the United States, residing at Oskaloosa, in the county of Mahaska and State of Iowa, have invented a new and useful Locomotive-Stoker, of which the following is a specification.

This invention relates to an improvement in locomotive stokers.

10 The primary object of the present invention is to provide a simple and efficient stoking mechanism for locomotives which will supply the fuel from different sides of the fire box.

15 A further object of the invention is to provide a conveyer mechanism for receiving the fuel from the tender and supplying the same to the mechanism which distributes the fuel within the fire box.

20 A still further object of the invention is to provide a delivery chute which will distribute the fuel within the fire box.

25 A still further object of the invention is to provide simple and efficient means for alternately opening the valves on one side of the fire box and closing the valves on the other side of the same.

30 Another object of the invention is to provide means for distributing the fuel within the fire box.

35 In the drawings, Figure 1 is a longitudinal section of the complete apparatus. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a transverse section taken on the line 3—3 of Fig. 1. Fig. 4 is a detail view of the distributing spout or nozzle. Fig. 5 is an end view of said spout. Fig. 6 is a detail view of the valve mechanism. Fig. 7 is a section taken on the line 40 7—7 of Fig. 1.

45 In the drawings 10 designates the locomotive tender which supplies the fuel, said tender being provided with the crushing roller 11 and the screw conveyer 12 which are operated in any convenient manner. The fuel which is fed by the screw conveyer 12 passes into the pipe 14 and is conducted to a second pipe 15, the fuel then passing to the bottom portion or transverse section 16 of the tube or trunk 17. This tube or trunk 17 is supported by the cab of the engine and is substantially rectangular in contour. Arranged within said tube is the conveyer chain 18 provided with the buckets 50 19, this conveyer chain passing over sprockets 21, 22 and 23, the sprocket 23

being driven by a gear 24 mounted on the stub shaft 25. This gear 24 is driven by a gear 26 arranged on the shaft 27. This shaft 27 is driven by a gear 28 arranged on the shaft 29 of an engine 30 which is suitably supported on the cab of the locomotive.

60 It will be noted by this construction that the fuel which passes within the transverse portion 16 of the trunk or tube 17, which travels in the direction indicated by the arrow, is conducted upward to the transversely extending portion 31 of said tube. The same is then deposited within a tube 23 in which is mounted the screw conveyer 34, this conveyer being driven by a gear 35 arranged on the stub shaft 25 on which the sprocket 24 is mounted. The fuel which is received within the tube 33 is conducted by the screw conveyer 34 to a plurality of hoppers 36, said hoppers varying in number, in proportion to the size of the locomotive fire box. The hoppers 36 terminate in enlargements 37 which are arranged on either side of the fire box, and extending through said enlargements are the shafts 38 on which the rotary distributors 39 are positioned, these rotary distributors being positioned within the enlargements. The enlarged portions 37 of the hoppers are provided with the spouts 37' shown in Figs. 4 and 5, these spouts being of a construction which permits their attachment to the extended portion of the enlarged end of the hoppers, the spouts being formed with the curved centrally disposed tapered ribs 39' which coact to distribute the fuel. The shafts 38 are driven by pinions 40 which are in mesh with pinions 41, the pinions 41 being arranged on a drive shaft 42 driven by the vertically disposed shaft 27 which is supported by the brackets 43, the other end of said shaft driving the pinion 26.

100 It will be noted by this construction that the fuel deposited within the hoppers descends within the enlarged portions of the same and is distributed within the fire box by the rotary distributors 39, the spouts arranged within the enlarged portions of the hoppers, the fire box being so formed as to insure even distribution of the fuel. The nozzles 37' are arranged within the delivery ends of the hoppers, steam being supplied by said nozzle to distribute the fuel and at the same time act as a smoke consumer.

110 As before stated, one of the objects of the invention is to provide means for supplying

the fuel alternately to either side of the fire box. Each of the distributing ends of the hoppers 36 are provided with valves 46. These valves consist of the pivotally supported gates 47 which are actuated by rods 48, which are shifted by the links 49. The links 49 are actuated by the rods 50 and 52. The end portions of the rods 50 and 52 are arranged in the path of a gear 53, said gear being provided with a cam face 54, the gear being driven by a worm 55 arranged on the shaft 42 which is driven by a pinion 57 arranged on the vertically extending shaft 27. The end portion of the rod 52 is also in the path of the cam 54 arranged on the gear 53, and said rods are alternately shifted by the said cam. It will thus be noted that when the rod 52 is shifted by the cam, the valves on the adjacent side of the fire box will be opened, the valves on the other side of the fire box being closed. On the continuous movement of the gear, however, the opposite valves will be opened and the rods 52 moved to allow the valves which are actuated by the same to close.

It will be noted by this construction that the valves on either side of the fire box will be alternately operated and the fuel will be distributed within the fire box first on one side and then on the other, the spouts shown in Figs. 4 and 5 facilitating the distribution of the fuel. The advantages of feeding the fuel in this manner will be clearly apparent and it will be noted that the same will not be deposited in a mass which would extend from one side of the fire box to the other as would be the case if the same were fed from both sides simultaneously or from one side in sufficient quantities to extend from one side of the box to the other.

Particular attention is called to the arrangement of the driving mechanism which while feeding the fuel through the conveyers, simultaneously imparts movement to the distributors and the valve actuating mechanism.

The many advantages of a construction of this character will be clearly apparent as it will be noted that the entire apparatus is such as may be easily and economically manufactured the various parts being readily assembled.

What is claimed is:—

1. In a locomotive stoker, a vertically disposed conveyer, a fire box, a plurality of hoppers embracing the fire box and communicating with both sides of said box, a horizontally disposed conveyer communicating with the first mentioned conveyer and said hoppers and adapted to deliver fuel thereto, fuel feeding valves arranged adjacent the delivery ends of said hoppers, means for simultaneously opening the valves on one side of the fire box and closing the valves on the other side and vice-versa, and

rotary distributors arranged to distribute the fuel within the fire box.

2. In a locomotive stoker a fire box, a vertically disposed conveyer, a horizontally disposed conveyer, a plurality of hoppers adapted to receive fuel from said conveyers, said hoppers being formed with diverging delivery chutes communicating with both sides of the fire box, fuel feeding valves arranged adjacent the delivery ends of said chutes, a rod arranged on either side of the fire box and pivotally connected to each of said valves, an arm secured to each of said rods, and a cam arranged to simultaneously impart movement to said arms to open the fuel feeding valves on one side of the fire box and close the fuel feeding valves on the remote side of the fire box.

3. In a locomotive stoker, a fire box, a vertically disposed conveyer, a horizontally disposed conveyer communicating with the first mentioned conveyer, a plurality of hoppers arranged to receive fuel from said horizontally disposed conveyer, the distributing ends of said hoppers extending within both sides of the fire box, a vertically disposed shaft arranged to drive said conveyers, a horizontally disposed shaft, distributors arranged adjacent the delivery ends of said hoppers, shafts supporting said distributors, a gear arranged on each of said shafts, said gear meshing with a gear arranged on the horizontally disposed shaft, valves having an operative connection with the distributors said valves being arranged to close the delivery ends of said hoppers.

4. In a locomotive stoker a fire box, a vertically disposed conveyer, a horizontally disposed conveyer, a plurality of hoppers adapted to receive fuel from said conveyers the distributing ends of said hoppers extending within both sides of the fire-box, spouts disposed within said fire-box, adjacent said delivery ends, said spouts being formed with curved centrally disposed tapered ribs, a vertically disposed shaft arranged to drive said conveyers, a horizontally disposed shaft, distributors arranged adjacent the delivery ends of said hoppers, shafts supporting said distributors, a gear arranged on each of said shafts, said gear meshing with a gear arranged on the horizontally disposed shaft, fuel-feeding valves arranged to close the delivery ends of said hoppers, arms arranged to open and close said valves, and means including a cam for actuating said arms, said cam having an operative connection with said horizontally disposed shaft.

5. In a locomotive stoker a fire box, a vertically disposed conveyer, a horizontally disposed conveyer, a plurality of hoppers adapted to receive fuel from said conveyers the distributing ends of said hoppers extending within both sides of the fire-box, spouts arranged within said fire-box adja-

cent the delivery ends of said hoppers, each
of said spouts being formed with a pair of
curved centrally disposed tapered ribs, a
vertically disposed shaft arranged to drive
5 said conveyers, a horizontally disposed
shaft, distributors arranged adjacent the de-
livery ends of said hoppers, shafts support-
ing said distributors, a gear arranged on
each of said shafts, said gear meshing with
10 a gear arranged on the horizontally dis-
posed shaft, fuel-feeding valves arranged
to close the delivery ends of said hoppers,

arms arranged to open and close said valves,
and a cam for actuating said arm, said cam
being actuated by said horizontally disposed 15
shaft.

In testimony that I claim the foregoing
as my own, I have hereto affixed my signa-
ture in the presence of two witnesses.

FRANK H. STROUSE.

Witnesses:

R. M. BOYER,
FRED G. DUSENBERRY.