Jan. 6, 1942. C. L. MYERS 2,269,283

STOKER

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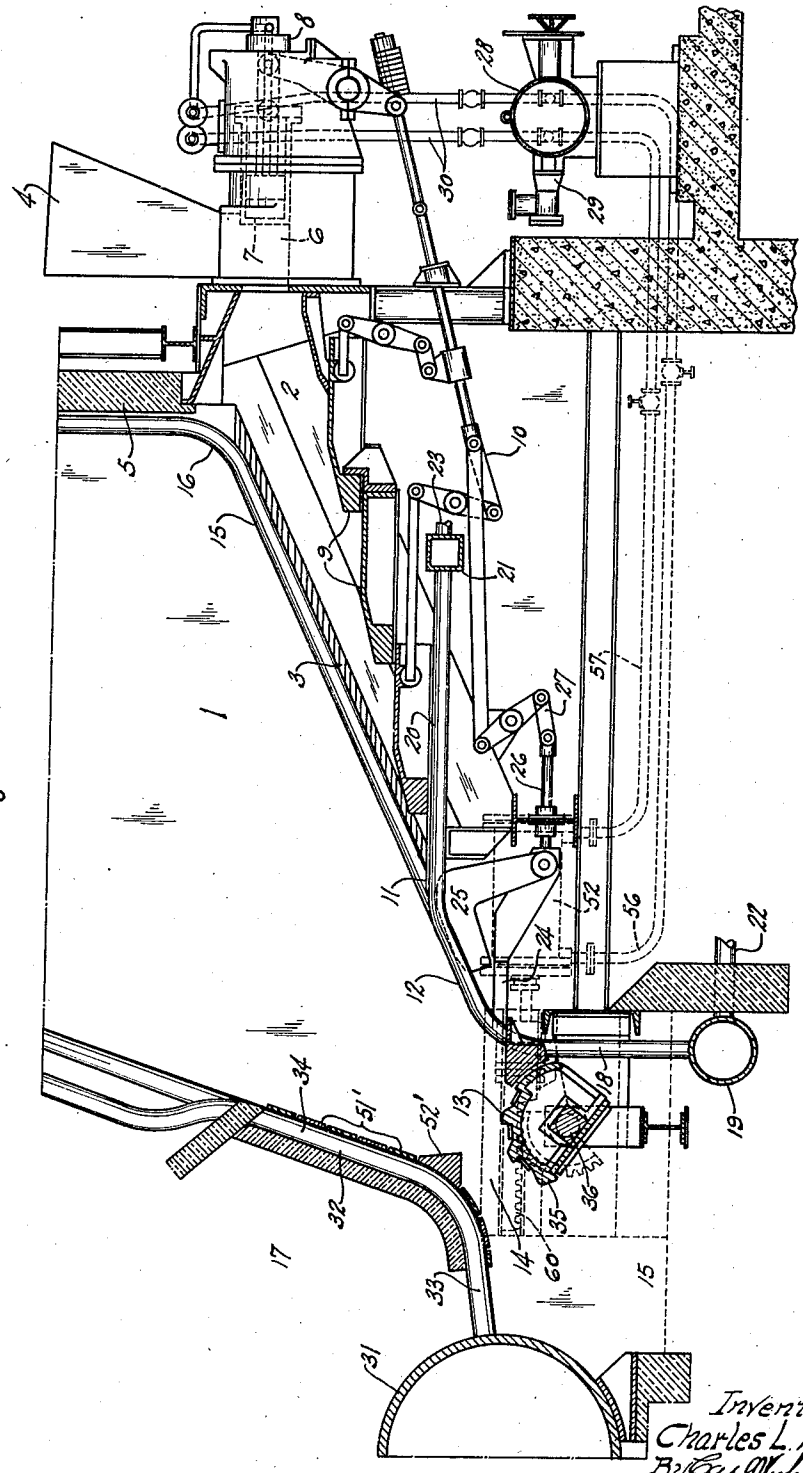


Fig. 1

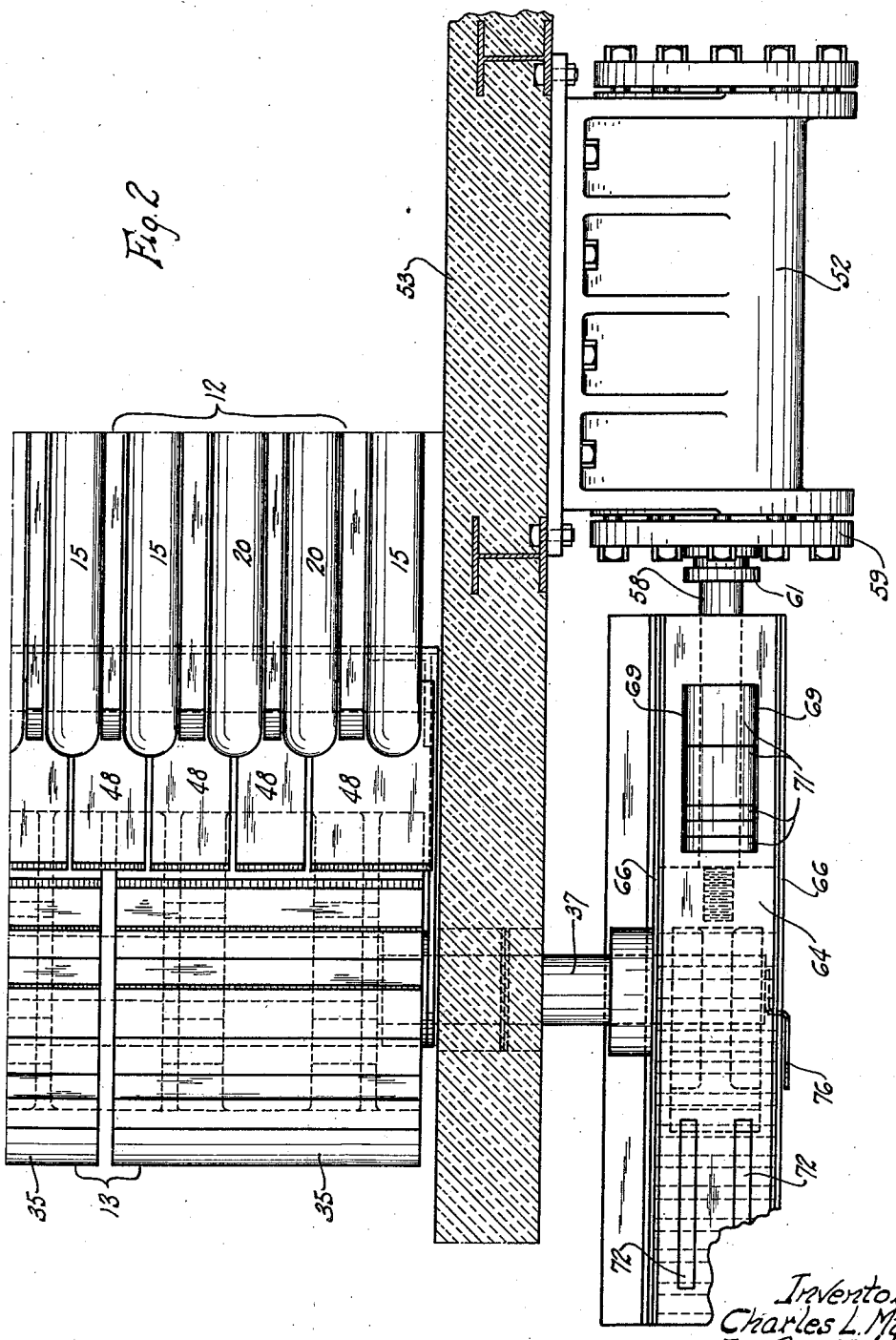
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STOKER

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Fig. 2



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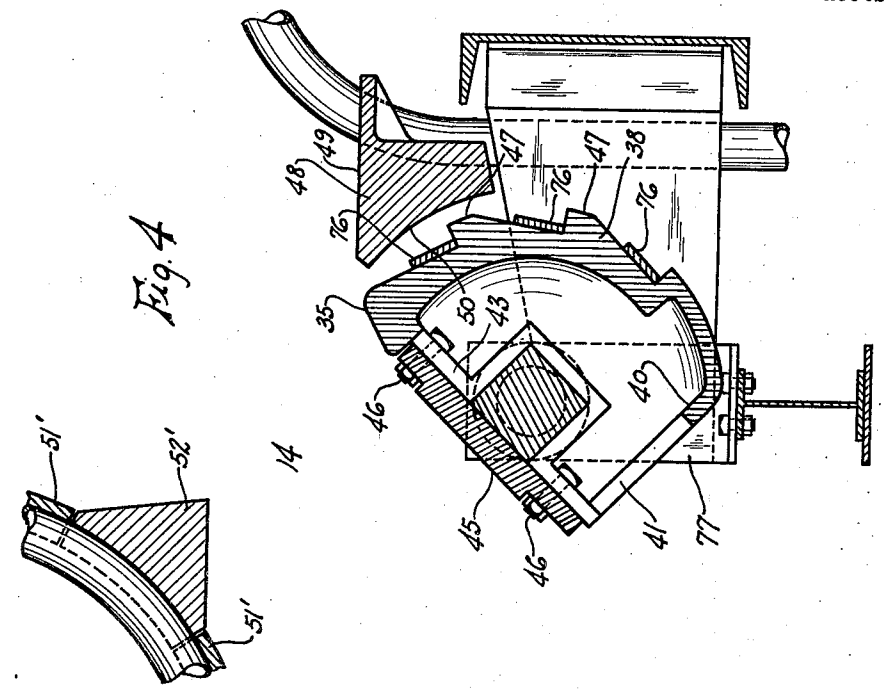


Fig. 4

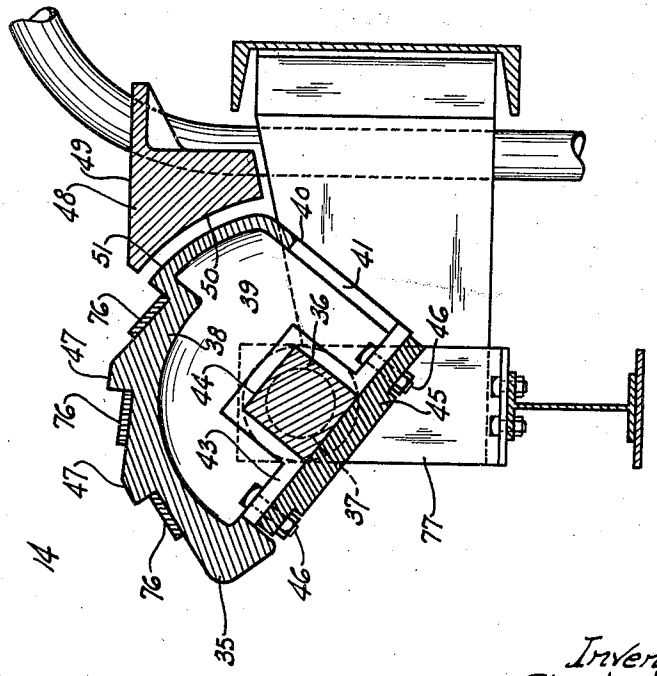
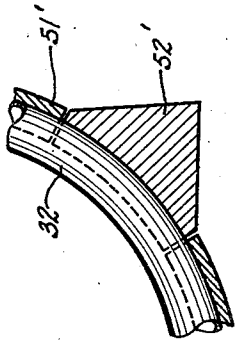


Fig. 3

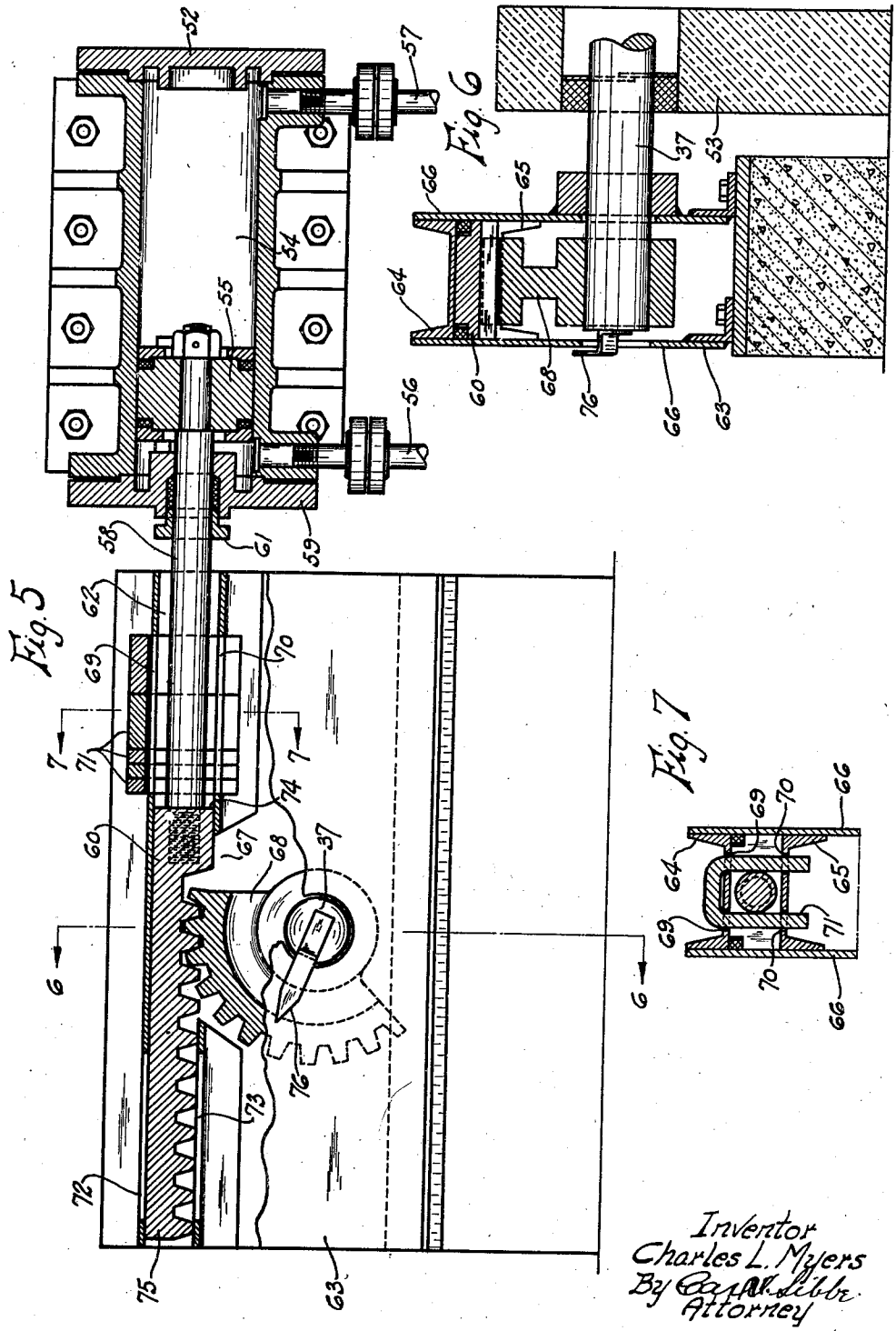


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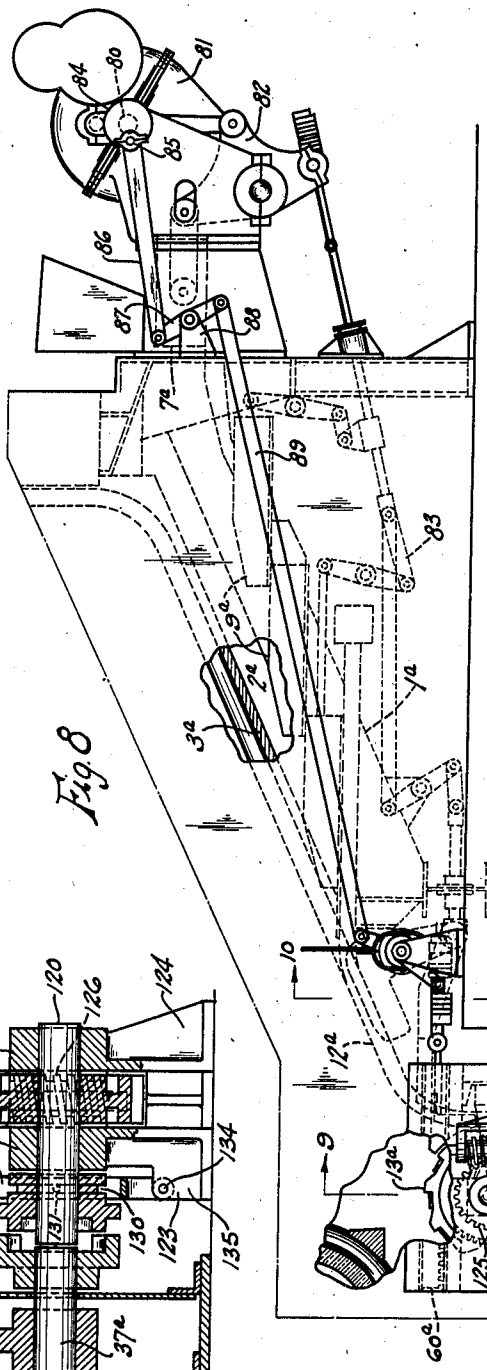


Fig. 8

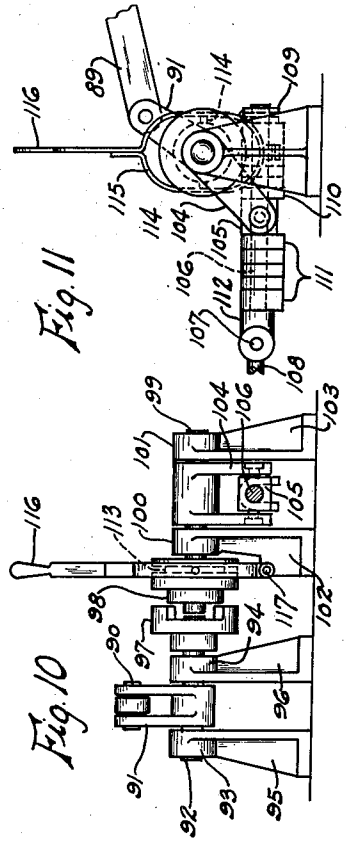


Fig. 11

Fig. 10

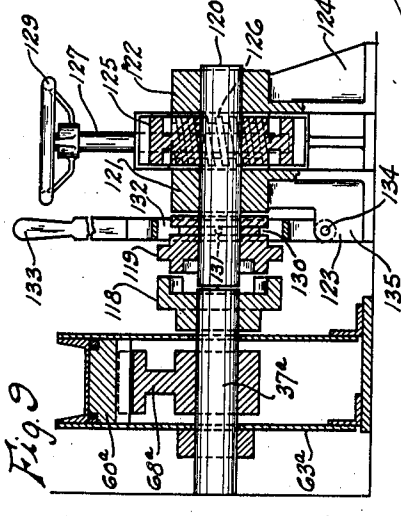


Fig. 9

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UNITED STATES PATENT OFFICE

2,269,283

STOKER

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Application December 30, 1938, Serial No. 248,442

16 Claims. (Cl. 110—165)

This invention relates to furnace stokers, and more particularly to ash feeding means associated with such devices.

One object of the present invention is to provide in a stoker of the stated character, generally improved means for agitating the fuel and feeding the ashes from the furnace.

A more specific object is to provide a novel ash feeding device of sectional segmental roll construction, which, when in its normal position, oscillates to feed the ashes through a discharge opening provided at the rear of the furnace, and when in another position permits the accumulated ash normally supported thereon to avalanche through said opening.

A further object is to provide an ash feeding device of the stated character which is simple in construction, and highly efficient in operation.

Other and further objects will become apparent as the description of the invention progresses.

Of the drawings:

Fig. 1 is a longitudinal sectional view taken through one of the retorts of an underfeed stoker showing the improved ash feeding device associated therewith, and the mechanism for operating the same.

Fig. 2 is a plan view of a portion of the ash feeding device and of the mechanism for operating the same.

Fig. 3 is a sectional elevational view showing the ash feeding device in normal position.

Fig. 4 is a similar view showing the ash feeding device in dumping position.

Fig. 5 is a side view partly in section, and with parts removed to show the structure of the operating means for the ash discharge device.

Fig. 6 is a sectional view taken substantially along line 6—6 of Fig. 5.

Fig. 7 is a sectional view taken substantially along line 7—7 of Fig. 5.

Fig. 8 is a side elevational view taken exteriorly of one of the side walls of the furnace, showing an alternative form of operating mechanism for the ash discharge device, portions of the wall being broken away to more clearly illustrate certain of the operating parts.

Fig. 9 is a sectional view taken substantially along line 9—9 of Fig. 8.

Fig. 10 is a view taken substantially along line 10—10 of Fig. 8, and showing the clutch control mechanism associated with the operating means for the ash feeding device; and

Fig. 11 is an end view of the mechanism shown in Fig. 10.

Referring to the drawings, the numeral 1 designates generally an inclined grate underfeed stoker, comprising alternately disposed retorts 2 and tuyère rows 3. Fuel is supplied to the stoker from hoppers 4 disposed exteriorly of the front wall 5 of the furnace. The fuel gravitating in hoppers 4 enters cylinders 6 from which it is fed to the retorts 2 by means of rams 7, operated in the present instance by fluid motors 8. The bottom of each retort has provided therein a series of pushers 9 which are also operated by the fluid motor means 8 through a link and lever mechanism indicated generally at 10. The lower end of each retort has provided therein a dead plate 11 from which the fuel is moved by the pushers 9 to overfeed section 12, which in turn feeds the fuel to the ash discharging device 13. The ash discharging device 13, as will appear more fully hereinafter, feeds the consumed fuel through a discharge opening 14, into a pit 15, from which it may be removed from time to time by any suitable means.

Each tuyère row 3 has provided thereon one or more longitudinally extending fluid conducting tubes 15. These tubes are bent upwardly near the upper end of the stoker, as shown at 16, and the upper portions thereof lie in abutting relation with the inner surface of the front wall 5 of the furnace. The upper ends of tubes 15 may terminate in one of the steam drums (not shown) of a boiler 17. The tubes 15 extend rearwardly beyond the ends of the tuyère rows 3 and form a portion of the overfeed section 12, and are then bent downwardly, as shown at 18, and terminate at their lower ends in a header 19. Mounted in cooling relation with each dead plate 11 are one or more fluid conducting tubes 20. These tubes extend rearwardly from a header 21 mounted in any suitable manner beneath the stoker, and are then bent downwardly in substantially parallel relation with the tubes 15, and also form a portion of the overfeed section 12. The lower ends of tubes 20 also terminate in header 19. Headers 19 and 21 are connected to the boiler by any suitable downcomer and riser connections 22 and 23 respectively.

Disposed between the tubes 15 and 20 are reciprocating and oscillating elements 24 and 25 respectively, which are operatively connected to an operating rod 26, which in turn is connected by a link and lever mechanism 27 to the link and lever mechanism 10, and consequently elements 24 and 25 are also actuated by the fluid motors 8.

Overfeed section 12, including the feeding elements 24 and 25, is similar in construction to that shown in the pending application of J. S. Bennett, Ser. No. 142,389, filed May 13, 1937, and to which reference may be had for a full disclosure thereof. Suffice it to say herein, that upon operation of the fluid motors 8 elements 24 and 25 are actuated to agitate and feed the fuel to the ash discharging device 13.

Fluid motors 8 are actuated in the present instance by means of a pump 28 having a pressure reversing control mechanism 29 associated there-

with. Fluid from pump 28 is conducted to and from motors 8 by means of conduits 30. The fluid system including the motors 8 for operating the ram 7, the pump 28, and the control mechanism 29, is similar in construction and operation to that shown in the pending application of Howard F. Lawrence, Ser. No. 132,689, filed March 24, 1937, and accordingly a detailed description thereof is unnecessary herein. In operation, upon movement of the rams 7 in the feeding or return direction, a pressure is built up in the system which, upon reaching a predetermined intensity, causes the control mechanism 29 to effect a reversal of the discharge of the pump 28, and consequently a reversal in the operation of the rams 7.

As shown in Fig. 1, lower drum 31 of boiler 17 is spaced rearwardly from the lower end of stoker 1, and one bank of tubes 32 thereof extend forwardly, as shown at 33, and then upwardly, as shown at 34, and form the rear or bridge wall of the furnace. The curved portions of tubes 32 are spaced from the ash discharge device 13, thereby forming the discharge opening 14 therebetween.

The ash discharge device 13 comprises a series of axially aligned, rockable members 35 mounted upon the square portions 36 of a shaft 37. Each member 35 comprises an upper, substantially arcuate fuel supporting portion 38, end walls 39, and a forwardly disposed wall 40, having a rectangular opening 41 provided therein. The lower ends of the arcuate fuel supporting portion 38 and wall 40 are connected by a pair of spaced, supporting members 43. Each supporting member has provided intermediate the ends thereof an open, substantially rectangular recess 44 for receiving the square portions 36 of shaft 37. A closing plate 45 extends across the bottom of each member 35, and is secured to members 43 in any suitable manner, as by bolts 46. The upper surface of each fuel supporting portion 38 has provided thereon a series of teeth 47 for feeding the ash through opening 14.

To prevent siftings from passing between ash discharge device 13 and the lower vertical portions of tubes 15 and 20, a series of supporting members 48 are provided. These members are secured in any suitable manner to the tubes 15 and 20, and each comprises an upper, rearwardly projecting portion 49, and a rearwardly disposed arcuate portion 50 concentric with the forwardly disposed portion 51 of fuel supporting portion 38. To protect the tubes 32, comprising the rear wall of the furnace, and also the upper wall of opening 14, from the action of the fuel and ash, protective blocks 51' are provided. Also provided on tubes 32, directly above the ash discharge device 13, are a series of abutment blocks 52' which act as bearing surfaces to enable the ash discharge device to break up clinker formations before the ash discharges through the opening 14.

From the foregoing description it is seen that to assemble the members 35 upon shaft 37, the said shaft is first rotated until the forwardly disposed wall of each member 35 clears the rearwardly disposed end of members 48. The members 35 are then seated upon the square portions 36 of shaft 37. The plates 45 are then secured in position by bolts 46.

The shaft 37, and consequently the ash discharge device 13, is rocked back and forth by means of a fluid motor 52, bolted or otherwise secured to the outside surface of one of the side walls 53 of the furnace. Fluid motor 52 comprises a cylinder 54 having a piston 55 operating therein. The opposite ends of cylinder 54 are connected to pump 28 by means of a pair of pipes 56 and 57. The piston rod 58 of piston 55 extends through an end wall 59 of cylinder 54, and the outer end thereof is rigidly secured to one end of a rack 60. To prevent leakage of fluid past the piston rod 58 any suitable packing gland 61 is provided.

Rack 60 operates in a longitudinally extending guideway 62 provided at the upper end of a supporting bracket 63. Guideway 62, as will be observed upon reference more particularly to Figs. 6 and 7, comprises a pair of channel members 64 and 65 secured in any suitable manner to the side walls 66, 66 of bracket 63. The lower channel member 65 is provided with a slot 67 intermediate the ends thereof through which extends a segmental gear 68 secured to the outer end of shaft 37. Segmental gear 68, as shown more particularly in Figs. 5 and 6, meshes with rack 60, and consequently any movement imparted to the latter by fluid motor 52 is imparted to segmental gear 68, and to shaft 37. The extent of movement of rack 60 is controlled by certain abutment means which will now be described in detail.

As shown more particularly in Figs. 5 and 7, channel members 64 and 65 are provided with slots 69 and 70, respectively, near one end thereof, and pairs of similar slots 72 and 73, respectively, near the other end thereof, for receiving U-shaped washers 71. To predetermine the extent of movement of rack member 60 to the right, the desired number of washers 71 are inserted through the slots 69 and 70. Now, upon engagement of the right hand end 74 of rack 60 with the washers 71 so positioned further movement of the rack to the right is prevented. To predetermine the movement of the rack 60 to the left, the proper number of washers 71 are inserted in slots 72 and 73, thereby providing a fixed abutment between the said washers and the right hand ends of slots 72 and 73. Thus, when the left hand end 75 of rack 60 engages the washers so placed, further movement thereof is prevented. In this manner the extent of movement of rack 60 either to the right or to the left, may be readily changed at will to vary the effectiveness of ash discharging device 13. To enable the operator to observe the rocking movement of ash discharging device 13, a pointer 76 is secured to the outer end of shaft 37. This pointer extends through an opening provided in the outer wall 66 of bracket 63, and if desired the said wall may have a gauge provided thereon.

The operation of fluid motor 52 is controlled by the pressure reversing control mechanism 29 associated with pump 28. In operation when piston 55 of motor 52 reaches the limit of its travel in either direction, depending upon the positioning of the washers 71, as just described, a pressure builds up in the system. This pressure is communicated to control mechanism 29, which in turn operates on pump 28 to reverse the discharge thereof. Piston 55 will now be operated by pump 28 in the reverse direction until its movement is again stopped, at which time the pressure again builds up in the system, causing a reversal in the discharge of the pump, and consequently causing the piston 55 to again reverse its direction of travel. By rocking the ash discharging device 13 in this manner, the ash accumulating thereon is fed through discharge opening 14. Now should it be desired to dump

the ashes from the furnace, the ash discharge device 13 is moved to the position shown in Fig. 4. This is accomplished by removing all of the washers 71 from the slots 69 and 70, thereby enabling further travel of rack 60 to the right. By this action the ash discharge device is swung from the position shown in Fig. 3 to that shown in Fig. 4, thereby providing a greater opening between abutment member 52' and the ash discharge device 13. The ashes now slide over the bottom plates 45 of each of the members 35. To prevent damage to the fuel supporting portion 38 of each of the members 35 wear plates 76 may be provided.

Shaft 37 may be mounted in any suitable bearings, provided in the side walls 53, and also in intermediate bearings provided in vertical brackets 77 disposed between the sections 35 of the ash discharge device 13. The numbers of such intermediate bearings provided depends upon the width of the furnace.

Figs. 8 to 11 inclusive illustrate a mechanical mechanism for operating the ash discharge device 13ª and will now be described in detail.

In this construction the stoker 1ª is similar in construction to the stoker 1 shown in Fig. 1, and also comprises a series of alternately disposed retorts 2ª and tuyère rows 3ª. Fuel is fed to the stoker by a series of rams 7ª which are operatively connected to the crank shaft 80 by any suitable link and lever mechanism 82, the said crank shaft being operated by any suitable power mechanism indicated at 81. Fuel is underfed along the retorts 2ª by a series of pushers 9ª to the overfeed section 12ª, which in turn feeds the fuel to the ash discharge device 13ª. The pushers 9ª, and the moving elements of the overfeed section 12ª are also actuated by the power mechanism 81 through any suitable link and lever mechanism indicated at 83.

The outer end of crank shaft 80 has secured thereto a disc 84 having a pin 85 mounted eccentrically thereon. One end of a link 86 is pivotally attached to pin 85, the other end of said link being pivoted to the upper end of a lever 87 pivoted intermediate its ends to a bracket 88 extending forwardly from the front end of stoker 1ª. The lower end of lever 87 has pivotally attached thereto one end of a link 89, the other end of which is pivoted on a pin 90 extending through apertures provided at the upper end of a bifurcated lever 91. Lever 91 is secured to a shaft 92 mounted in bearings 93 and 94 provided at the upper ends of a pair of brackets 95 and 96 respectively. One end of shaft 92 has secured thereto a clutch element 97 which is adapted to engage a complementary clutch element 98 secured to one end of a shaft 99 journaled in bearings 100 and 101, provided in pedestal brackets 102 and 103, respectively. Secured to shaft 99 is a bifurcated lever 104, to the lower end of which is pivotally attached a crosshead 105. Crosshead 105 is provided with an aperture centrally thereof which receives a rod 106, pivoted at 107 to the outer end of a second rod 108. The other end of rod 108 is secured to one end of a rack 60ª which meshes with a segmental gear 68ª secured to one end of the shaft 37ª upon which the ash discharging device 13ª is supported. Rack 60ª operates in a guideway provided at the upper end of a bracket 63ª. The outer end of rod 106 has secured thereto a collar 109. Extending between crosshead 105 and collar 109 are a series of substantially U-shaped washers 110. A second series of washers 111 extends between the other side of crosshead 105 and the enlarged portion 112 of rod 106. These washers are provided to form abutments for crosshead 105, as it moves in either direction, and consequently the extent of movement of rack 60ª, and of ash discharge device 13ª, may be predetermined. By simply removing washers from either side of crosshead 105, the extent of movement is decreased, and conversely, by adding washers the extent of movement is increased, since it will be remembered that crosshead 105 is loosely mounted on rod 106. Clutch element 98 is provided with an annular groove 113, which is adapted to receive a pair of inwardly projecting lugs 114 provided on the lower bifurcated end 115 of a clutch operating lever 116. The lower end of lever 116 is pivoted at 117 to pedestal bracket 102.

From the foregoing description it is seen that when clutch elements 97 and 98 are disengaged, as shown in Fig. 10, no movement from disc 84, and the link and lever mechanism associated therewith, is imparted to rack member 60ª. However, upon the engagement of clutch elements 97 and 98, a reciprocatory motion is imparted to rack member 60ª, which in turn imparts an oscillatory motion to ash discharging device 13ª, which in turn feeds the ashes through discharge opening 14ª, as previously described in connection with the construction shown in Figs. 1 to 7 inclusive.

Referring more particularly to Fig. 9, it will be observed that the outer end of shaft 37ª extends through suitable bearings provided in bracket 63ª and has secured to the free end thereof a clutch element 118 adapted to engage a complementary clutch element 119 slidably mounted on a shaft 120. Shaft 120 is journaled in bearings 121 and 122, provided at the upper ends of pedestal brackets 123 and 124 respectively. Secured to shaft 120 intermediate the ends thereof is a worm wheel 125 which meshes with a worm gear 126, secured to a vertical shaft 127 suitably journaled in a bearing bracket 128 disposed adjacent brackets 123 and 124. The upper end of shaft 127 has secured thereto a hand wheel 129. Clutch element 119 has provided thereon an annular groove 130 for receiving a pair of studs 131 projecting inwardly from the bifurcated end 132 of a clutch actuating lever 133. Lever 133 is pivotally mounted at the lower end thereof, as shown at 134, to the web 135 of bracket 123.

Hand wheel 129 and the associated gearing 125 and 126 are provided to operate the ash discharging device 13ª from the position shown in Fig. 3 to the dumping position shown in Fig. 4. To accomplish this, clutch elements 97 and 98, as shown more particularly in Fig. 10, are disengaged by swinging lever 116 to the position shown in Fig. 10. Rack 60ª is now disconnected from the power mechanism 81. Lever 133 is now swung to the left (Fig. 9) so as to move clutch element 119 into engagement with clutch element 118. Now, upon turning hand wheel 129, shaft 37ª, and consequently ash discharging device 13ª, may be adjusted manually. Hand wheel 129 is turned until ash discharging device 13ª assumes the position shown in Fig. 4, in which position the ashes normally supported thereon are permitted to avalanche through the opening 14ª.

From the foregoing description it is seen that a simplified, as well as highly efficient ash discharging device has been provided, which functions to feed the ashes from the furnace at

various predetermined rates, and also to dump the ashes whenever such action is desirable.

While the embodiments herein shown and described are admirably adapted to fulfill the objects primarily stated, it is to be understood that the invention is not to be limited thereto, since it may be embodied in other forms, all coming within the scope of the claims that follow.

What is claimed is:

1. An ash discharging device adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a member adapted for rocking movement from ash feeding to ash dumping positions, said member comprising a substantially arcuate portion having projections thereon, a shaft for supporting said member, a gear secured to one end of said shaft, a rack meshing with said gear, a reciprocating fluid motor for actuating said rack, means including a pressure reversing control mechanism for controlling the direction of movement of said motor, and adjustable abutment means adapted to limit the movement of said rack in either direction, whereby the rocking movement of said shaft and member may be predetermined, said abutment means being so disposed that upon the removal thereof said shaft and member may be actuated to ash dumping position by said motor means, causing the ashes normally supported on said member to be discharged from the furnace.

2. An ash discharging device adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a plurality of axially aligned members, a shaft for supporting said members, said members being adapted for rocking movement from ash feeding to ash dumping positions, said members comprising a substantially arcuate portion having projections thereon, a shaft for supporting said members, a gear secured to one end of said shaft, a rack meshing with said gear, a reciprocating fluid motor for actuating said rack, means including a pressure reversing control mechanism for controlling the direction of movement of said motor, and adjustable abutment means adapted to limit the movement of said rack in either direction, whereby the rocking movement of said shaft and members may be predetermined, said adjustable abutment means being so disposed that upon the removal thereof said shaft and members may be actuated to ash dumping position by said motor means, causing the ashes normally supported on said members to be discharged from the furnace.

3. An ash discharging device adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a member adapted for movement from ash feeding to ash dumping positions, said member comprising a substantially arcuate portion having projections thereon, a shaft for supporting said member, a gear secured to one end of said shaft, a rack meshing with said gear, a guideway for said rack having slots provided therein near the opposite ends thereof, removable washers adapted for insertion in said slots forming abutments for said rack to limit the movement thereof in either direction, a reciprocating fluid motor for actuating said rack, and means including a pressure reversing control mechanism for controlling the direction of movement of said motor, and said motor being adapted to actuate said member to ash discharging position upon removal of the said washers from one end of said guideway whereby the ashes normally supported on said member are discharged from the furnace.

4. An ash discharging device adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a member adapted for movement from ash feeding to ash dumping positions, said member comprising a substantially arcuate portion having projections thereon, a shaft for supporting said member, a gear secured to one end of said shaft, a rack meshing with said gear, power means, a link and lever mechanism operatively connecting said rack to said power means, whereby a reciprocatory movement is imparted to said rack, and clutch means adapted to connect or disconnect said link and lever mechanism from said rack.

5. An ash discharging device adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a member adapted for movement from ash feeding to ash dumping positions, said member comprising a substantially arcuate portion having projections thereon, a shaft for supporting said member, a gear secured to one end of said shaft, a rack meshing with said gear, power means, a link and lever mechanism operatively connecting said rack to said power means, whereby a reciprocatory movement is imparted to said rack, clutch means adapted to connect or disconnect said link and lever mechanism from said rack, a second shaft in axial alignment with said first mentioned shaft, a gear secured to said second shaft, manually operable gearing meshing with said gear, and clutch means adapted to connect or disconnect said first and second shafts, whereby said member may be actuated manually to ash dumping position.

6. An ash discharging device, adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a member adapted for movement from ash feeding to ash discharging position, said member comprising an ash supporting portion, means for oscillating said member to progressively feed the ashes through said passage, and means for actuating said member to ash discharging position whereby the ashes normally supported thereby are discharged from the furnace.

7. An ash discharging device, adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a rockable member of segmental roll construction having a substantially arcuate fuel supporting portion, projections provided on said fuel supporting portion, and a relatively flat portion at the bottom of said member, means for rocking said member to progressively feed the ashes through said passage, and means for actuating said member to bring said flat portion into a downwardly and rearwardly inclined position in contact with said ashes whereby the said ashes normally supported by said device are discharged from the furnace.

8. An ash discharging device, adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a plurality of axially aligned members adapted for movement

from ash feeding to ash discharging position, a shaft for supporting said members, each of said members comprising a substantially arcuate ash supporting and feeding portion, means for rocking said shaft to progressively feed the ashes through said passage, and means for actuating said members to ash discharging position whereby the ashes normally supported thereby are discharged from the furnace.

9. An ash discharging device, adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a member adapted for rocking movement to different positions, said member being of segmental roll construction and consisting of an arcuate fuel supporting portion having projections thereon for progressively feeding the ashes through said discharge passage, a rockable shaft for supporting said member, operating means for rocking said shaft, and means for predetermining the extent of rocking movement of said shaft.

10. An ash discharging device, adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, comprising a member adapted for rocking movement to different positions, said member being of segmental roll construction and consisting of an arcuate fuel supporting portion having projections thereon for progressively feeding the ashes through said discharge passage, a rockable shaft for supporting said member, operating means for rocking said shaft, said operating means comprising gearing operatively connected to said shaft, power means operatively connected to said gearing for rocking said shaft, and means for predetermining the extent of movement of said shaft in either direction.

11. In a furnace, the combination of a stoker, an ash discharging device provided at one end of said stoker, a wall disposed adjacent said ash discharging device, the bottom of said wall being spaced from said ash discharging device to provide a passage through which the ashes from said furnace may be discharged, said ash discharging device comprising a rockable member having projections thereon, and abutment means provided on said wall above said ash discharging device and against which the ashes and clinkers formed in the furnace are crushed by the said projections, whereby said clinkers are broken up before discharging through said passage.

12. In a furnace, a stoker, an ash discharging device disposed to the rear of said stoker, a wall disposed adjacent said ash discharging device, the bottom of said wall being spaced from said ash discharging device to form a passage through which the ashes from the furnace may be discharged, said ash discharging device comprising a rockable member having projections thereon, operating means for said device for actuating the same, means for predetermining the extent of movement of said ash discharging device, and means for actuating said device to ash dumping position whereby the ashes normally supported thereon are discharged from the furnace.

13. In a furnace, a stoker, an ash discharging device disposed at the rear of said stoker, a wall disposed adjacent said ash discharging device, the lower end of said wall being spaced from said ash discharging device to provide a passage through which the ashes may be discharged, said ash discharging device comprising a series of axially aligned members adapted for adjustment from a feeding position to an ash dumping position, said members comprising an upper, substantially arcuate portion having a series of projections thereon, a shaft for supporting said members, gearing operatively connected to said shaft, a fluid motor for actuating said gearing to rock said shaft, means for predetermining the extent of rocking movement of said shaft, and said fluid motor being adapted to actuate said members to dumping position whereby the ashes normally supported thereby are discharged from the furnace.

14. In a furnace, a stoker, an ash discharging device disposed at the rear of said stoker, a wall disposed adjacent said ash discharging device, the lower end of said wall being spaced from said ash discharging device to provide a passage through which the ashes may be discharged, said ash discharging device comprising a series of axially aligned members adapted for movement from a feeding position to an ash dumping position, said members comprising an upper, substantially arcuate portion having a series of projections thereon, a shaft for supporting said members, gearing operatively connected to said shaft, an operating mechanism, a link and lever mechanism operatively connecting said operating mechanism to said gearing to effect a rocking movement of said shaft, clutch means for connecting or disconnecting said operating mechanism at said gearing, a second shaft normally disconnected from said first mentioned shaft, manually operable gearing associated with said second shaft, and a clutch means for connecting or disconnecting said first and second shafts whereby when said shafts are connected said ash discharging device may be actuated to dumping position by said manually operable gearing.

15. A rockable ash feeding device of segmental roll construction adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, said ash feeding device comprising a substantially arcuate material supporting and feeding portion, a pair of end walls secured to said material supporting portion, a third wall secured to one edge of said material supporting portion, projections provided on said material supporting portion, and supporting means for said feeding device secured to and extending between one edge of said material supporting portion and the lower edge of said third wall.

16. An ash feeding device adapted to be mounted adjacent one end of a stoker furnace for feeding the ashes received therefrom through a discharge passage, said device comprising a rockable member having a substantially arcuate material supporting portion, a pair of end walls secured to said material supporting portion, a third wall secured to one edge of said material supporting portion, projections provided on said material supporting portion for feeding the ashes, supporting means for said member secured to and extending between one edge of said material supporting portion and said third wall, and a plate adapted for attachment to said supporting means and extending over the length of said member and between one edge of said supporting portion and said third wall.

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