

1,213,708.

Patented Jan. 23, 1917.
2 SHEETS—SHEET 1.

FIG. 1.

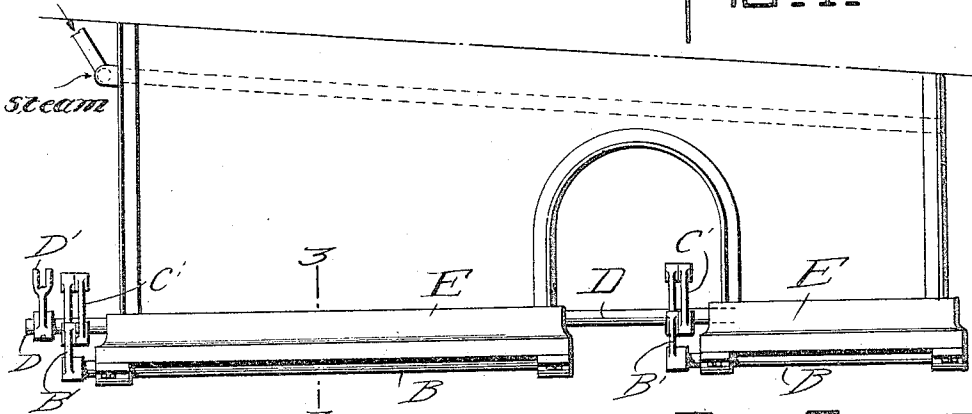


FIG. 2.

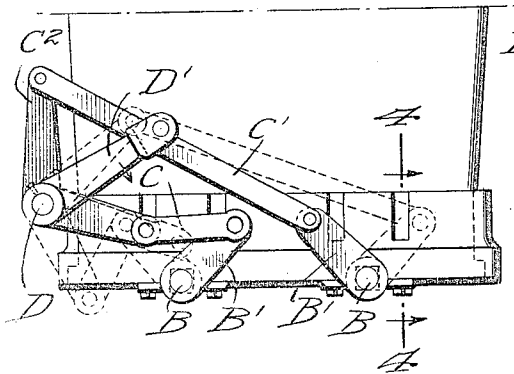


FIG. 3.

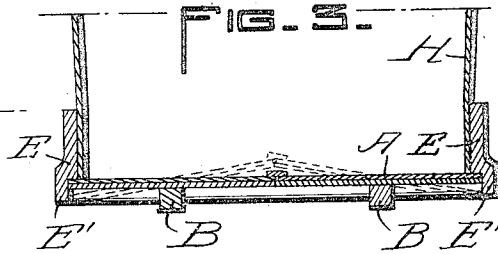


FIG. 4.

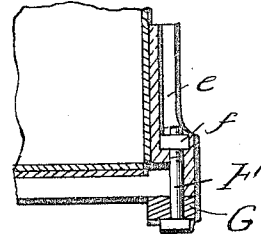
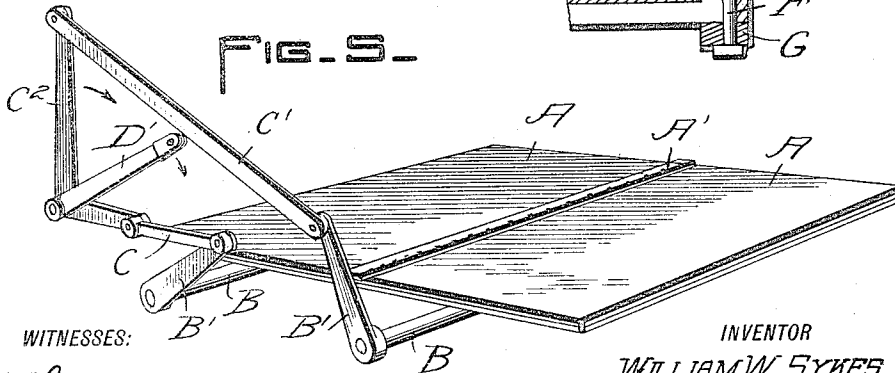


FIG. 5.



WITNESSES:

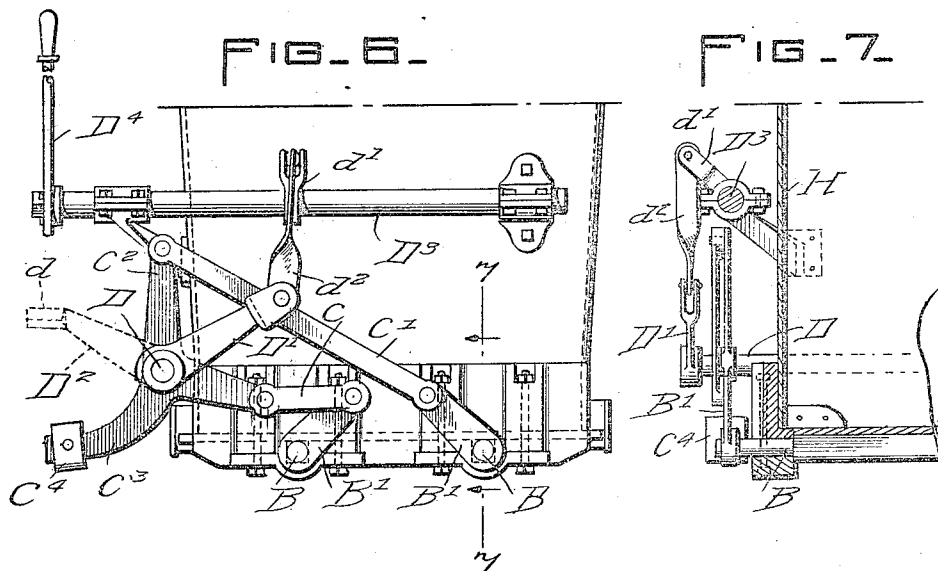
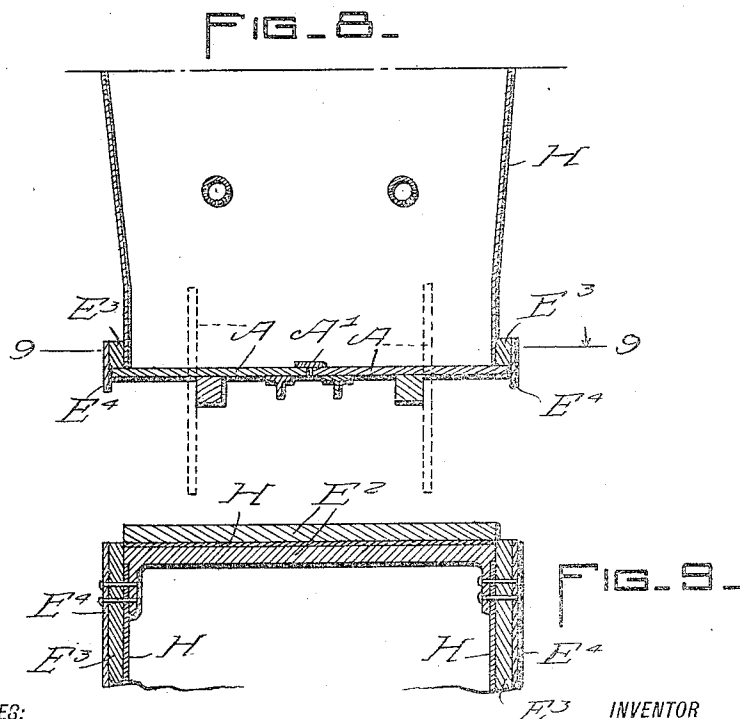
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LOCOMOTIVE ASH-PAN.

1,213,708.

Specification of Letters Patent.

Patented Jan. 23, 1917.

Application filed January 10, 1916. Serial No. 71,242.

To all whom it may concern:

Be it known that I, WILLIAM W. SYKES, a citizen of the United States, and a resident of Richmond, in the county of Henrico and State of Virginia, have invented a certain new and useful Improvement in Locomotive Ash-Pans, of which the following is a specification.

My present invention relates particularly to locomotive ash-pans of the type described and shown in my Patent Number 962269, granted June 21, 1910, and includes improvement in respect to reinforcement of the ashpan itself against warping under excessive heat, and provision for the proper operation of the dumping doors even though warped by the heat, and my invention further includes improvements in the mechanism or connections for dumping the doors, the nature of which renders extension from a single to a double ashpan or three or more opening pan peculiarly simple and convenient, and is adaptable to a variety of controls.

In the accompanying drawing forming a part of this specification, and in which my improvements are shown, Figure 1 is a side elevation of a double ashpan provided with my improvements. Fig. 2 is an end view thereof. Fig. 3 is a vertical cross section taken through the lower portion of the ashpan substantially on line 3—3 of Fig. 1. Fig. 4 is an enlarged detail vertical section through one end portion, taken substantially on line 4—4 of Fig. 2. Fig. 5 is a detail perspective view of a pair of dumping doors with the connections for opening and closing the same. Fig. 6 is a view similar to Fig. 2, illustrating certain modifications with respect to door controls. Fig. 7 is a vertical section taken substantially on line 7—7 of Fig. 6. Fig. 8 is a view similar to Fig. 3 illustrating a slight modification, and Fig. 9 is a partial horizontal section taken substantially on line 9—9 of Fig. 8 and illustrating another modification.

Referring now to these figures, and particularly to Fig. 5, it will be seen that the double rocking doors A which are disposed on and secured to the intermediate squared portions of rock shafts B, have their inner contiguous edges lapped by an extension lip A' carried by one of the doors, the doors being in operation movable oppositely to open or dumping position, to which end the shafts B are rocked in relatively opposite directions by the connections to be now described.

Each of the shafts B is provided at one outer end with an upright arm B' to the upper end of which is pivotally connected one end of respective links C and C', connecting the arms B' with the relatively opposite ends of a bell crank lever C². This bell crank lever is fulcrumed by means of a shaft D upon which it is secured, and to which shaft D may be secured a yoke arm D' receiving suitable operating connections upon actuation of which shaft D is rocked, causing rocking movement of the bell crank lever C² in the direction indicated by the arrow in Fig. 5, and consequently causing opposite rocking movement of the shafts B to which the doors A are secured, all as plainly seen by a comparison of the full and dotted lines in Fig. 2.

The operating connections above referred to may lead from the locomotive cab or some other convenient point whereby the doors may be dumped by one standing on the ground. They may also be connected for operation by an air or steam cylinder and may, as shown in Figs. 6 and 7, involve either an extension piece D² of arm D' as seen in broken lines, having a squared portion *d* for the reception of the socket end of a lever, or the mounting of a shaft D³ actuated by a lever D⁴ and connected to arm D' by an arm *d'* and link *d*². I may utilize the above where desired and may also utilize an extension C³ of bell crank lever C² with a weight C⁴ adjustably held thereon whereby to automatically return the doors after each dumping operation. It will thus be noted that in addition to the direct powerful leverage afforded by the particular connections shown, the fact that the bell crank lever C² has its fulcrum upon shaft D and the latter is journaled at one side of the ashpan, enables extension of the operating connections to a double ashpan, such as shown in Fig. 1, by simply extending shaft D along both portions of the ashpan, as clearly seen in Fig. 1, and actuating the shaft at a single point in a peculiarly simple and convenient manner, irrespective of the number of ashpans. Furthermore, in accordance with my invention, a cast frame E is secured around the lower portion of each ashpan, which frame is cored out at its sides at *e* and provided with vertical apertures for the reception of bolts F as most plainly seen in Fig. 4, the nuts *f* of which are held in the cored-out recesses *e*

just referred to, and the purpose of which bolts is to support the lower portions G of the bearings for the door shafts B, the upper portions of which are formed in the lower edges of the cast frame E itself. It will thus be seen that due to the particular location of the shafts of the ash-pan doors A, the side edges of the latter close upwardly against the lower edge of the ash-pans H as particularly seen in Fig. 3, and it will be further seen by reference to this figure that the sides of the frame E along the side edges of the doors are provided with outwardly offset depending extensions E', inwardly of which the outer edges of the doors move vertically to and from closed position and which extensions, projecting as they do substantially below the lower end of the ash pans H and against which the doors normally close, prevent the dropping of ashes from the ashpans even though the doors themselves have become warped and misshapen through the excessive heat, so as to occupy inclined positions such as indicated in dotted lines in Fig. 3, and in which positions it will be seen that their inner contiguous edges remain closed due to the overlapping lip A' before mentioned. This frame may be either in one piece, as in Figs. 1 to 4 inclusive, or may be in parts secured together, as seen at E² and E³ in Fig. 9, and may be formed with an integral depending outer portion E' as above, or provided with a sheet metal strip E⁴ secured thereto with its lower edge depending, as shown in Fig. 8. Thus in addition to strengthening the lower portions of the ash-pans most subject to warping and distortion, the cast frame E provides for proper operation of the dumping doors through the connections before described, even though warped and misshapen to a considerable degree, such as would likely occur in the continued use of such parts in practical use.

I claim:—

1. An ashpan having double rocking doors, the inner edges of which are adja-

cent to one another and the outer edges of which close upwardly against the lower edge of the ashpan at opposite sides thereof, an extension lip carried by the said inner edge of one of the doors to lap the adjacent edge of the other door in closed position, a rigid frame surrounding the said lower edge of the pan and having portions at opposite sides thereof depending below the said lower edge of the ashpan at opposite sides along and below the said outer edges of the doors, and having at its other sides cored out recesses and vertical apertures, rock shafts on which said doors are secured, bearings for said rock shafts, and securing members for attaching said bearings to the said frame, extending through the said vertical apertures thereof and extending into the said cored-out recesses.

2. An ash-pan having double ash-pan doors, rock shafts having stationary bearings and upon which said doors are secured, a crank arm rigid at one end with each shaft, a bell crank lever, links pivotally connecting the arms of said lever with the said crank arms of both shafts, and an operating shaft upon which said bell crank lever is secured, said operating shaft being mounted at one side of the ash-pan whereby it may with increased length be utilized to operate multiple ash-pans, substantially as described.

3. An ash-pan having double rocking doors, the outer edges of which close upwardly against the lower edge of the ash-pan, and a rigid frame surrounding and secured to the lower edge of the ash-pan and having extensions at opposite sides depending below the lower edges of the ash-pan along and below the said outer edges of the doors and having bearings supporting the doors for rocking movement.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."