

N. OLSON.
 DEVICE FOR CLEANING ASH PANS OF LOCOMOTIVES.
 APPLICATION FILED NOV. 30, 1908.

942,737.

Patented Dec. 7, 1909.
 2 SHEETS—SHEET 1.

Fig. 1.

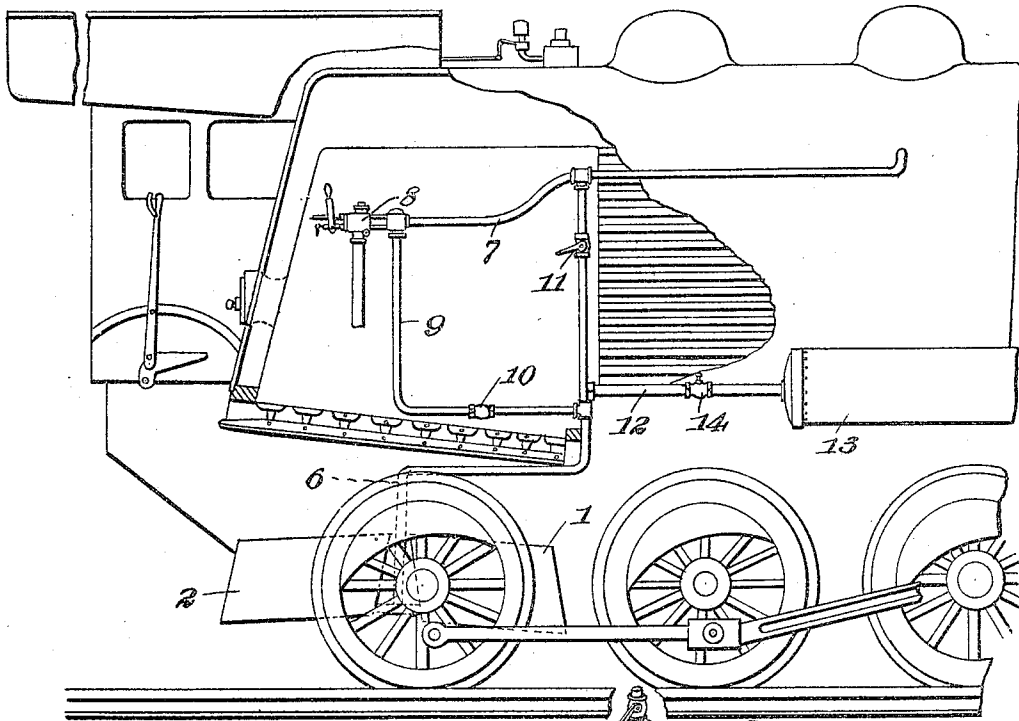
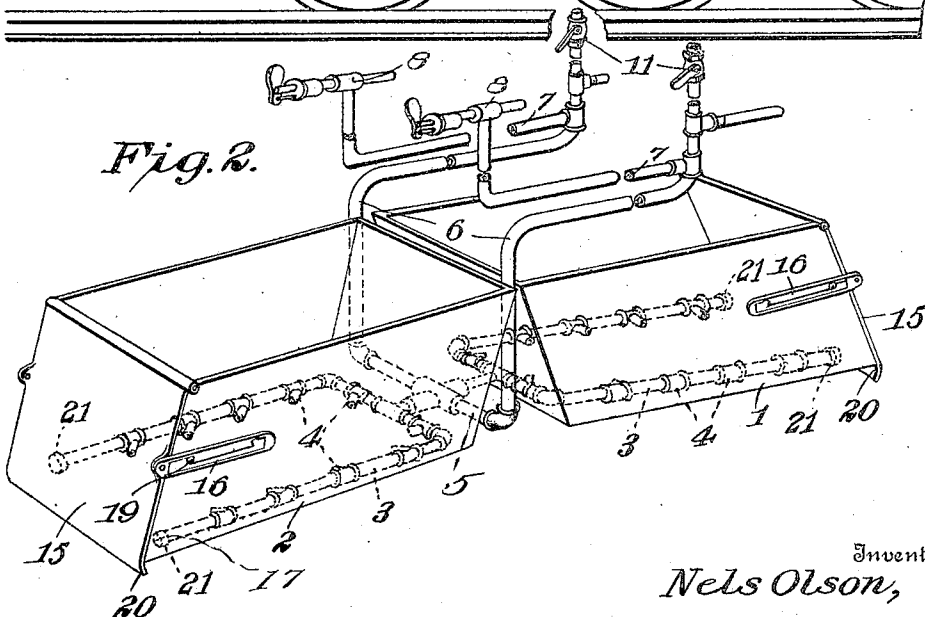


Fig. 2.



Inventor
Nels Olson,

Witnesses

Wm. M. M. M. M. M.
Wm. M. M. M. M. M.

By

Wm. M. M. M. M. M.
 Attorneys

N. OLSON.
 DEVICE FOR CLEANING ASH PANS OF LOCOMOTIVES.
 APPLICATION FILED NOV. 30, 1908.

942,737.

Patented Dec. 7, 1909.
 2 SHEETS—SHEET 2.

Fig. 3.

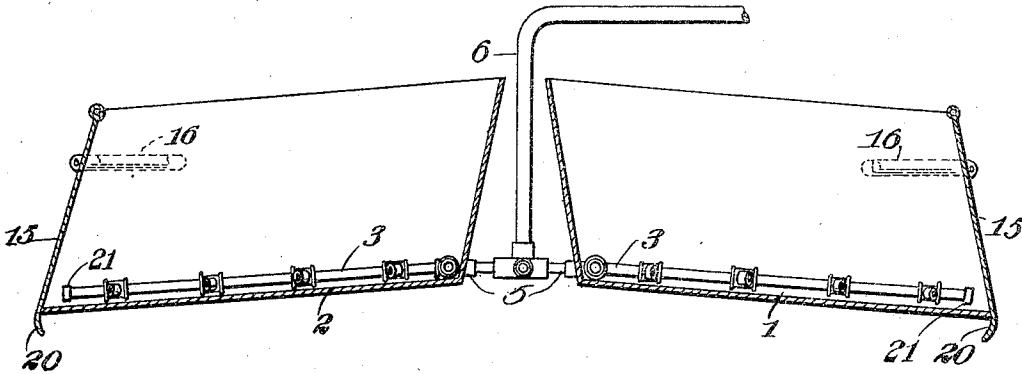


Fig. 4.

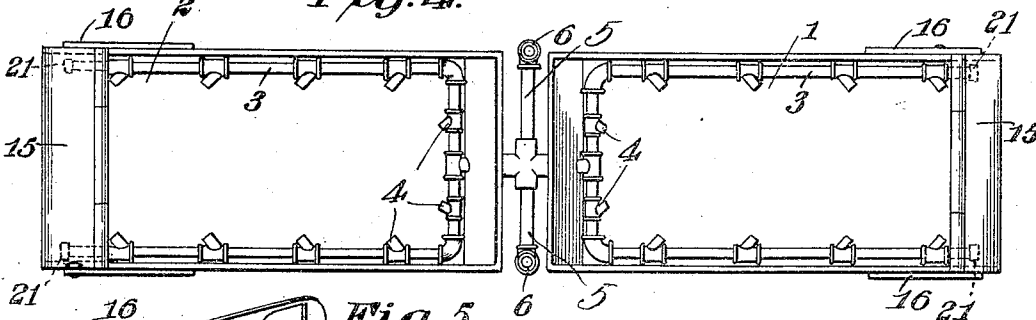


Fig. 5.

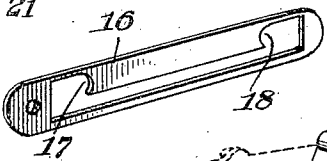
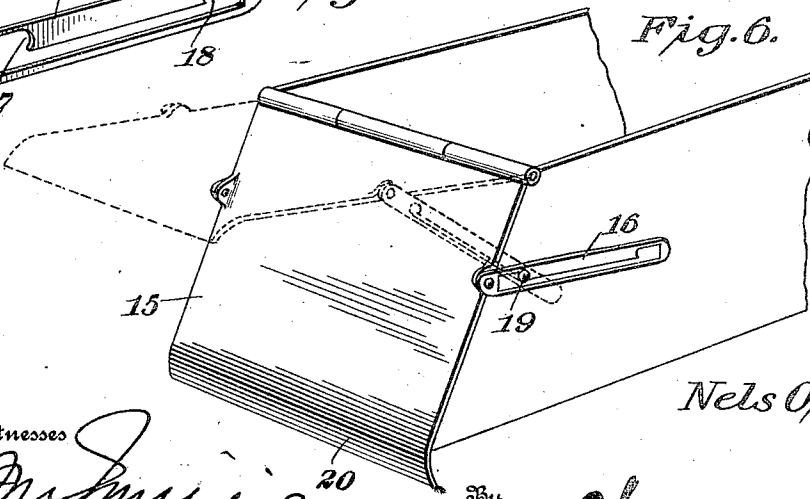


Fig. 6.



Inventor

Nels Olson,

Witnesses

Wm. H. Woodson

Wm. H. Woodson

By

Wm. H. Woodson, Attorneys

UNITED STATES PATENT OFFICE.

NELS OLSON, OF BIRMINGHAM, ALABAMA.

DEVICE FOR CLEANING ASH-PANS OF LOCOMOTIVES.

942,737.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed November 30, 1908. Serial No. 465,177.

To all whom it may concern:

Be it known that I, NELS OLSON, citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Devices for Cleaning Ash-Pans of Locomotives, of which the following is a specification.

This invention relates to the art of steam engineering and more particularly comprehends certain new and useful improvements in ash pans for locomotives or similar engines and cleaning means therefor.

The invention has for its primary object an improved construction of ash pan and cleaning mechanism, the latter embodying improved means whereby the ashes are dampened so as to quench any live coals that may happen to be deposited in the ash pan with the cinders; whereby the ash pans may be effectually cleaned out whenever desired by the use of water and steam passed thereto by branch pipes leading from the injector to the pipe which connects the injector with the water space of the boiler, and whereby air may be used whenever desired for the purpose of removing ashes from the ash pans, so that should the injector be out of order, air may be used in lieu of water and steam.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts as I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation, partly broken away, of the rear portion of a locomotive equipped with the improvements of my invention. Fig. 2 is a perspective view of ash pans provided with said improvements. Fig. 3 is a longitudinal sectional view through the ash pans. Fig. 4 is a top plan view of the ash pans. Fig. 5 is a detail perspective view of one of the latch arms for holding open or closed, the discharge doors of the ash pans, and Fig. 6 is a perspective view of a portion of one pan.

Corresponding and like parts are re-

ferred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numerals 1 and 2 designate respectively the front and rear ash pans of a steam engine, (a locomotive engine in the present instance) and 3 designates substantially U-shaped pipes which are mounted in the bottoms of the ash pans and which extend around three sides thereof, as clearly illustrated in the drawings.

4 designates Y-couplings or nipples that are connected to the three branches of the pipes 3, as shown, and that preferably project toward the discharge ends of the ash pans.

In the present embodiment of the invention, the U-shaped discharge pipes 3 that are used for ejecting the ashes from the ash pans, are connected by pipes 5 to right and left hand vertically disposed pipes 6. The pipes 6 are respectively connected at their upper ends to the right and left hand feed water pipes 7 leading to the water space of the boiler from the injectors 8. Water pipes 9 are connected at one end to the water discharge or over-flow ports of the respective injectors 8, as shown, and said pipes 9 are also connected to the pipes 6 below the upper ends of the latter.

10 designates check valves which are incorporated in the respective pipes 9.

11 designates the handles of valves that are preferably designed to be manually operated and that are mounted in the pipes 6 above the connection of the pipes 9 therewith. Pipes 12 connect at one end with the air drums 13 of the locomotive and connect at their opposite ends with the pipes 6 above the connection of the pipes 9 with said pipes 6. Preferably the pipes 12 are provided with globe valves 14, so that the passage of air through the pipes will be controlled or regulated and completely shut off if desired. Only one of these pipes 12 and air drums 13 is shown in the drawings in Fig. 1, but it is to be understood that the opposite side of the locomotive is similarly equipped.

The sides of the ash pans preferably slope toward the bottom and the bottoms preferably slope toward the discharge ends, so that all of the ashes may be properly deposited on the

bottoms of the ash pans and so that the ashes will have a tendency to move toward the discharge ends of the pans when the engine is running. The ash pans 1 and 2 are provided at their discharge ends with doors 15 that are effectually held in either open or closed position by means of pivoted struts 16 with notches 17 and 18 for engaging studs 19 secured to the sides of the pans. By this means the doors may be securely held open, or closed if desired, without the necessity of the engineer or fireman crawling underneath the engine. The doors 15 are preferably formed with curved free edges 20 designed to keep the ashes from going up into the different parts of the machinery.

In the practical operation of my improved ash pan cleaner, it is obvious from the foregoing description in connection with the accompanying drawings, that the pans may be easily cleaned out by simply manipulating either one or both of the handles 11 and opening the pipes 6 so that the steam may pass forcibly into the pipes 3 and discharge rearwardly through the slanting Y-couplings or discharge nozzles 4 so as to force the ashes out through the open discharge ends of the ash pans. Whenever it is desired to dampen the ashes, it is only necessary to manipulate the handles 11 and close the valves to which they are connected, so that when the ejectors are priming, the waste water may be passed through the pipes 9 and past the check valves 10 down through the pipes 6 and pipes 3 and out through the nozzles. By this means all live coals that may have been dropped into the ash pans may be quenched and any fire in the ash pans extinguished before discharging the ashes, thereby preventing the burning of bridges or cross-ties. The check valves 10 obviously prevent the water and steam from the pipes 7 and 6 from passing up into the waste water pipes 9 when the valves with the handles 11 are opened.

If it be desired to clean out the ash pans at any time when the injectors are out of order, or in case the weather is so cold that it is not advisable to use the steam and water from the injectors in cleaning out the ash pan, air from the drums 13 may be directed into the pipes 6 and discharged from the nozzles 4 to the pipes 3, so as to blow the contents of the ash pans out of the same.

While I have in the present embodiment of the invention, shown the injectors and their connecting piping common to both the front and rear ash pans, it is obvious that one injector and its concomitant parts may be used for one of the ash pans and the other injector for the other.

The ends of the pipes 3 are provided with plugs 21 which may be removed whenever desired, in order that the pipes may be

blown out, or freed from any accumulations of scale or the like.

Having thus described the invention, what is claimed as new is:

1. The combination with an ash pan of the character described, and an injector, the ash pan embodying front and rear sections, of pipes provided with nozzles arranged in the bottom of said sections, a feed water pipe leading from the injector, a pipe having connection with said feed water pipe, and also a connection with the nozzle pipes of both ash pan sections, a connection between the overflow port of the injector and the pipe which connects the feed water pipe with the nozzle pipes and a check valve in the pipe which leads from the overflow port of the injector.

2. The combination with an ash pan of the character described and an injector, of a pipe provided with nozzles adapted to discharge into said ash pan, a feed water pipe leading from the injector, a connection between said first named pipe and the feed water pipe, and a connection between the overflow port of the injector and said first named pipe, said last named connection being provided with a check valve opening toward the first named pipe.

3. The combination with an ash pan of the character described, an injector, an air drum, and a feed water pipe adapted to lead from the injector to the boiler of the engine, of a pipe provided with nozzles adapted to discharge into the ash pan, a connection between said pipe and the feed water pipe, a connection between said connection and the overflow port of the injector, a pipe connecting the air drum with said first named connection, a valve in said first named connection, and a check valve for said second named connection.

4. The combination with an ash pan of the character described, an injector, an air drum, and a feed water pipe adapted to lead from the injector to the boiler of the engine of a pipe provided with nozzles adapted to discharge into the ash pan, a connection between said pipe and the feed water pipe, said connection being provided with a valve, a pipe connection between said last named connection and the overflow port of the injector, a pipe connecting the air drum with said first named connection above the point of connection of said second named pipe connection and first named connection, and a valve in said air pipe connection.

In testimony whereof I affix my signature in presence of two witnesses.

NELS OLSON. [L. s.]

Witnesses:

JERE C. KING,
JESSIE V. BRONSON.