

UNITED STATES PATENT OFFICE.

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SPRAYING ATTACHMENT FOR STEAM-BOILER FURNACES.

SPECIFICATION forming part of Letters Patent No. 654,485, dated July 24, 1900.

Application filed September 29, 1899. Serial No. 732,089. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. PARSON, a citizen of the United States, residing at New York, in the borough of Brooklyn and State of New York, have invented certain new and useful Improvements in Ash-Spraying Attachments for Steam-Boiler Furnaces, of which the following is a specification.

This invention relates to an ash-spraying attachment for steam-boiler furnaces, by means of which the hot ashes after the live coals are banked up in front of the fire-bridge at the rear of the furnace can be sprayed with water in such a manner that they can be removed conveniently and with practically no dust through the doorway at the front of the furnace.

The invention consists of a supply-pipe and a spray-nozzle thereon, comprising an elbow-coupling fixed to the supply-pipe and provided with a flaring mouth, an axial screw-threaded post or spindle extending from the elbow-coupling through said mouth, and an adjustable spray-spreading bell screwed onto said spindle and adapted to widen or reduce the space between the upper end of bell and the said flaring mouth, all as will be hereinafter fully described and then particularly claimed.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a furnace, showing my improved ash-spraying attachment applied thereto. Figs. 2 and 3 are respectively a detail front elevation of the support for the supply-pipe and a vertical section on line 3 3, Fig. 2. Fig. 4 is a vertical central section of the spray-nozzle, and Fig. 5 is an under side view of the same.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the furnace of a steam-boiler, B the grate-bars of the same, and C a coal-banking ledge raised above the grate in front of the fire-bridge D.

E is the doorway, surrounded by a front plate *e*, and to which are fixed upwardly-extending supporting-hooks *e'*, which are adapted to removably support at a point about midway of the upper and lower ends of the doorway a transverse bridge or lazy-bar F, which is provided with a central notch or re-

cess *f*. The supply-pipe G for the spray-nozzle H is supported on the bridge F in said recess *f*.

The supply-pipe G is provided at its outer end with a stop-cock *g* and is connected with a hose *g'*, that is in turn connected with a suitable water-supply. The supply-pipe is somewhat longer than the length of the grate of the furnace, so that every part of the grate can be reached by the spray of water issuing from the nozzle H.

The nozzle H is arranged with its axis at right angles to the supply-pipe G, and it consists of an elbow-coupling *h*, Fig. 4, which is screwed onto the end of the said pipe and is provided with a flaring mouth *h'*. Screwed into the coupling *h*, coincident with the axis of the flaring mouth *h'*, is a spindle I, which is provided at its outer end, which extends beyond the said mouth, with a screw-thread which receives a corresponding female screw-thread in the conical bell J. The small tapered end of the bell J is received in the mouth *h'*, so that by taking hold of a grip-bar *j*, extending transversely of the interior of the bell, the space between the latter and the said mouth may be increased or diminished. The outer surface of the bell therefore serves to spread the conical stream of water which issues from the mouth of the nozzle, so that the water is sprayed.

My improved ash-spraying attachment is used as follows: The live coals are first banked up upon the ledge C at the rear of the fire-chamber and the bridge or lazy-bar F is then placed on its hook-supports after the furnace-door has been opened. The spray-nozzle and supply-pipe are then introduced into the fire-chamber, so that the supply-pipe rests upon the said bridge within the recess *f* thereof. Before introducing the nozzle into the fire-chamber the spray-spreading bell J is set to desired position, and when the nozzle is arranged in proper position over the grate the stop-cock *g* of the supply-pipe is opened, so that a spray of water is discharged onto the ashes supported on the grate. The spray-nozzle is gradually moved over the entire grate until all of the hot ashes are sufficiently moistened so that they can be removed with little or no dust. The dust stirred up by the

conical spray is as it were choked within the hollow interior of the spray, thus avoiding the raising of the dust. After the ashes have been sprayed and removed the live coals are again brought forward and uniformly distributed over the grate and an additional supply of coal then spread over them.

The spraying attachment can be quickly applied for use from time to time as required, so that the fire can be always kept up without raising dust.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The herein-described spray-nozzle, consisting of an elbow-coupling, provided with a flaring mouth at one end, an axial screw-threaded spindle rigidly fixed inside the coupling and extending through said mouth, and

a conical spray-spreading bell screwed onto the said spindle, substantially as set forth.

2. The herein-described spray-nozzle having a flaring mouth, in combination with a conical spray-spreading bell provided with a transverse grip-bar for turning it, and the smaller end of which bell is received by said mouth, while the larger end extends below the mouth, and means for connecting said bell adjustably with the nozzle, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HENRY E. PARSON.

Witnesses:

PAUL GOEPEL,
GEO. L. WHEELLOCK.