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T. RUSSELL

PROCESS FOR CLEANING FURNACE CASINGS

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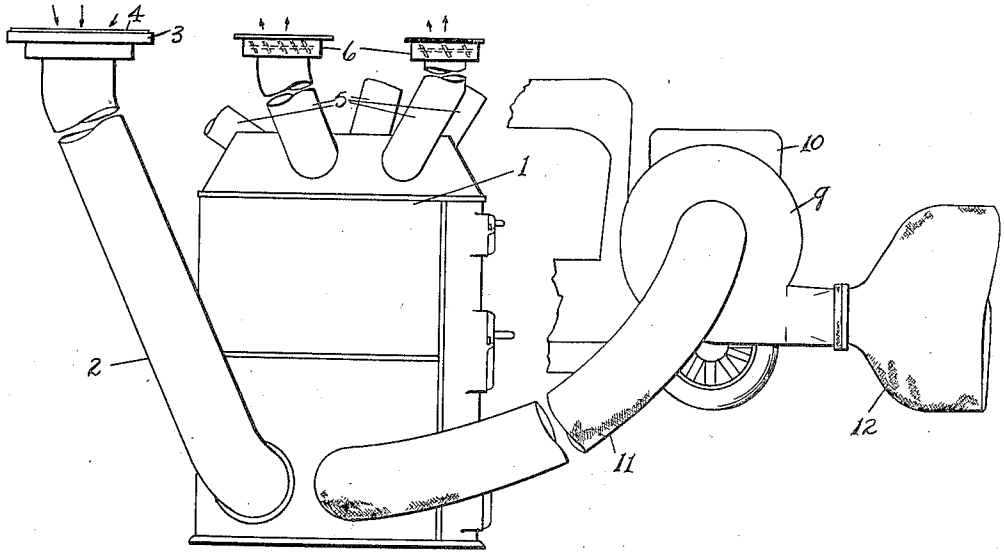


Fig. 1.

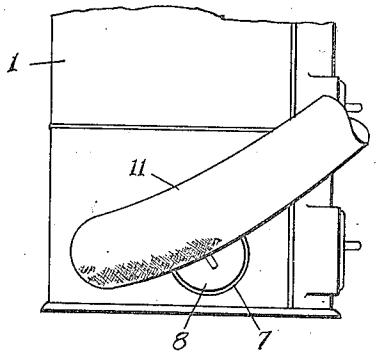


Fig. 2.

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PROCESS FOR CLEANING FURNACE CASINGS.

Application filed August 24, 1925. Serial No. 52,173.

This invention relates to an improved process for cleaning furnace casings.

The objects of the invention are to pneumatically and effectively remove any accumulations of dirt or débris in the furnace casing and hot air pipe, of a hot air heating furnace.

The method is fully described in the following specification.

The invention is clearly defined in the appended claims.

I carry out the process by the apparatus illustrated in the accompanying drawing, in which:

Fig. 1 is a diagrammatic view of a furnace casing with my improved method in operation, the suction fan, exhaust pipe and dust collector connections being in place.

Fig. 2 is a slight modification showing the suction pipe connected to the cold air intake of the furnace casing.

In carrying out my invention, I connect the suction tube of an exhaust fan to a suitable aperture in the furnace casing, the suction pipe and fan being of a capacity to create a strong draft in a twelve inch pipe. I preferably form a special opening in the furnace casing (with a removable cover) to which the pipe is connected, and then close all of the outlets and the inlets through the pipes 2 and 5, and then run the suction fan until the accumulations of débris in the casing have all been exhausted, opening one register for that purpose, having put a suitable cover 4 over the register opening 3 to the cold air intake 2. The registers are then opened one at a time successively lifting the registers from the top of the pipe and brushing or jarring the contents of the pipe so that it is loosened, exhausted down through the casing and out through the suction pipe. I then close all the registers and open the cold air pipe and draw the current of air downward and draw a strong current of air through the pipe to clean it of any débris or accumulations.

In the drawing I refer to the parts by their numerals.

1 is the furnace casing, 2 is the cold air pipe connection leading to supply the same with cold air. 3 is the cold air register over which I provide a cover 4 for temporary use when carrying out my cleaning process. 5 are the warm air delivery pipes. 6 are the registers, one register of course being provided for each pipe in the usual way.

The parts I have thus described I have not detailed because they are the usual construction of parts except the temporary cover 4 which is placed over the cold air register 3. I provide a large suction fan 9 of any suitable motor or engine 10 preferably a gasoline engine. I provide a suction pipe preferably 12 inches in diameter delivering to the intake of the suction fan 9, the fan being provided with a suitable connection to an aperture 7 which I provide with a suitable cover 8 to be opened for connection to the suction apparatus. 12 is a dust bag connected to the discharge end of the suction fan 9.

As indicated above, when it is desired to clean the furnace, the suction pipe 11 is connected to the port 7 in the casing and the fan set in operation. The temporary cover 4 is put on the cold air register to cut off the passage of air at that point and the warm air pipes are opened one at a time successively, the one being cleaned being the only one open. After all the warm air pipes have been cleaned the registers are all closed, covering them with mats if necessary, the cold air pipe being then opened and the strong suction passed through the casing at that point. A considerable degree of vacuum is maintained in the furnace casing during the operation of cleaning which causes a spring reverse flow of air through the warm air pipes.

Where the furnace is not provided with a covered connection corresponding to part 7, the device can be operated by disconnecting the cold air pipe 2 (see Fig. 2) and connecting my suction hose at that point.

After the furnace has been cleaned by this connection the suction can be connected to the lower end of the cold air pipe to cause the rush of air through it to thoroughly clean it.

I have shown in operation here an ordinary suction fan. It can be driven by a gasoline engine carried on a truck making this device portable so that the business of cleaning furnace casings can be carried on effectively.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent, is:

1. The method of cleaning a furnace casing provided with warm air and cold air pipe connections, consisting in providing an exhaust connection to the said furnace casing of sufficient capacity to cause a considerable degree of vacuum in said casing during the cleaning operation, and to draw a strong current of air through the various warm air and cold air pipes, one at a time, and closing all of said pipes and opening them one at a time successively, agitating the contents of the pipe being cleaned to insure the débris being carried away by the strong flow of air created by said exhaust.

2. The method of cleaning a furnace casing provided with warm air and cold air pipe connections, consisting in providing an exhaust connection to the said furnace casing of sufficient capacity to cause a considerable degree of vacuum in said casing during the cleaning operation, and to draw a strong current of air through the various warm air and cold air pipes, one at a time, and closing all of said pipes and opening them one at a time successively, to insure the débris being carried away by the strong flow of air created by said exhaust.

In witness whereof I have hereunto set my hand.

TITUS RUSSELL.