(No Model.)

J. ALTMEYER

DEVICE FOR COOLING ROLLS OF ROLLING MILLS.

No. 265,731. Patented Oct. 10, 1882.

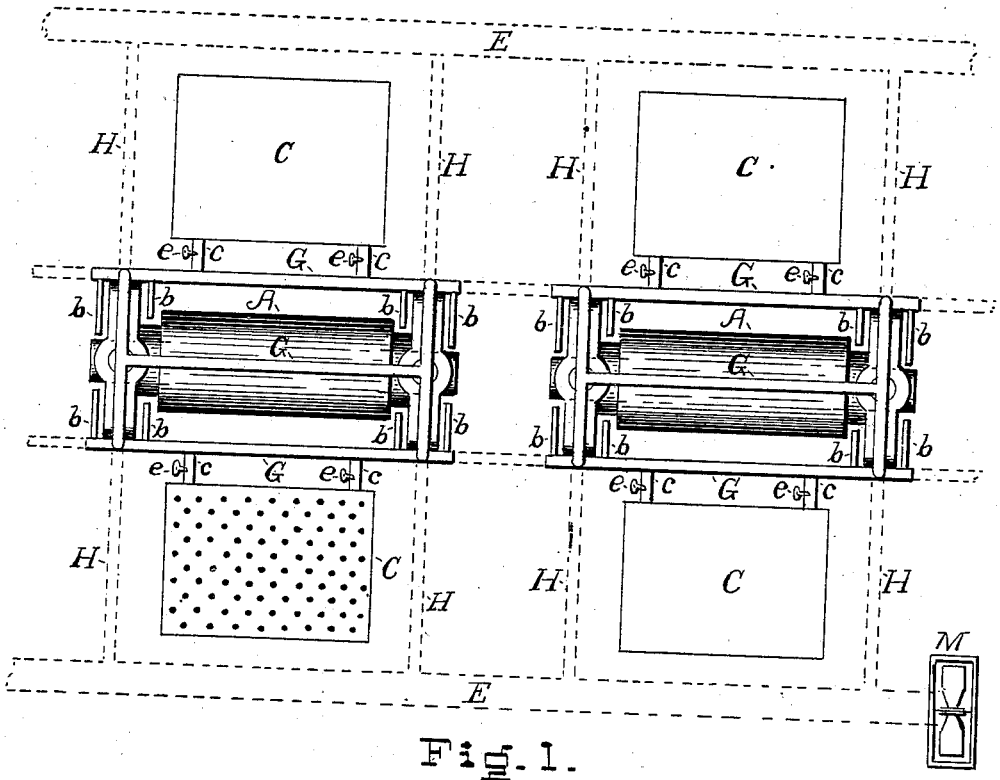

Fig. 1.

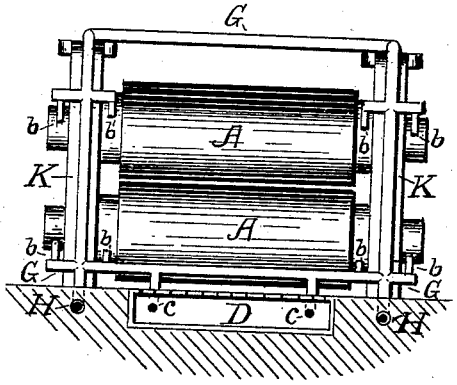

Fig. 2.

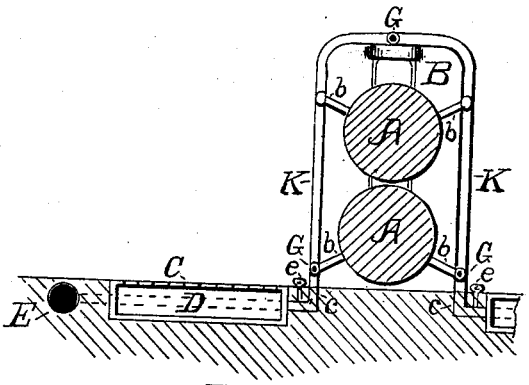

Fig. 3.

WITNESSES:

Geo. K. Storm.

J. V. L. Rodgers.

Jacob Altmeyer

by Howard Bros.

INVENTOR

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JACOB ALTMEYER, OF BENWOOD, WEST VIRGINIA.

DEVICE FOR COOLING ROLLS OF ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 265,731, dated October 10, 1882.

Application filed May 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, JACOB ALTMEYER, a resident of Benwood, in the county of Marshall and State of West Virginia, have invented certain new and useful Improvements in Cooling Rolls in Rolling-Mills; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The objects of my invention are, first, to prevent the rolls from getting too hot during the operation of rolling the iron, thereby causing injury to their working-surfaces and necessitating a suspension of work until the rolls are sufficiently cool to be used; second, to reduce the temperature of the atmosphere about the rolls and to cool the floor or platform upon which the workmen stand, and to provide them with cool fresh air to aid them in withstanding the excessive heat attending the operation of rolling iron. These objects I attain by the application of air direct to the working-surfaces of the rolls, and to air-chambers under the floors, arranged with perforated covers, by means of a system of air-conveying pipes, through which the air is forced by the aid of a suitable fan or blower.

The invention consists in combining with an air-receptacle a system of peculiarly-arranged pipes having air-discharge orifices, all as fully hereinafter described.

In the drawings, Figure 1 is a plan showing a train of rolls and the system of air-pipes and air-chambers in connection therewith. Fig. 2 is a front view of one set of rolls; Fig. 3, a transverse section through the center of the rolls.

For convenience of reference the description will be confined to one set of rolls, it being understood that the system can be extended to embrace a series of trains of rolls placed, if desired, in different parts of the mill.

On the drawings like letters of reference refer to like parts.

The letter A designates the rolls; B, the housing.

C C are metallic platforms, one on each side of the train of rolls. These platforms are provided with perforations through the top, similar to a pavement-grating.

D is a box or air-chamber under the platform, made preferably of cast metal, the platform fitting on it and forming a lid for the same.

E E are large air-service pipes, running the entire length of the line of rolls and connected with a suitable blower, M.

H H are small supply-pipes, leading from the large mains into the side of the housings of the rolls, and are then continued upward, preferably on the front of the housing, across the top of the same, to which it is attached by suitable fastenings.

G G are perforated pipes, running parallel with the rolls at the top and at the bottom of the rolls, on opposite sides of the same, and at a suitable distance from them, connected at each end to the supply-riser *k* in front of the housing. These pipes are made with a line of perforations or air-slots (not shown) running the entire length of the rolls, and are so arranged with screw-thread connections at the ends that the pipes can be turned around sufficiently to bring the line of air holes or slots at any desired angle with the rolls.

b b are small branches or nozzles to direct the air on the journal-bearings of the rolls.

c c are branches connected with the pipe G to supply the air-boxes D under the platforms.

e e are regulating-valves.

Where more than two rolls are used in one housing a line of perforated pipe can be introduced between the risers for each roll.

The advantage of having the entire space open under the platform is to allow of an equal distribution of the air through the perforated cover to the workmen, thus avoiding upward currents or streams of air, which would carry with them the dust and scale that accumulate about the rolls, which would be the case if the space were divided into small air-flues with a line of air-holes through the cover parallel with them.

The operation of the system of air-pipes is as follows: The air, being forced through the mains and the various branches by means of the blower, is directed onto the working-surfaces and journal-bearings of the rolls and into the air-boxes under the floor in any desired quantity, serving to cool the rolls and reduce

the temperature around them and supply the workmen with cool fresh air.

I do not wish to confine myself strictly to the special arrangement of the air-pipes herein shown, as it is obvious that their form and shape may be varied considerably to produce the results aimed at without materially affecting the principle involved.

Having described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A system of air-conducting tubes for cooling rolls in rolling-mills, consisting substantially of a line of perforated air-pipes running parallel with each roll, adapted to discharge a stream of air upon their surface, a series of branch supply-pipes connecting the same with a service-pipe running parallel with the train of rolls, and a fan or blower adapted to drive the air through the pipes, all combined and operated substantially as herein shown.

2. The combination, with the rolls A and housing B, of the perforated pipes G G, fitted with nozzles *b b*, riser *k*, supply-pipes H H, service-pipe E, and fan or blower M, substantially as herein shown, and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

JACOB ALTMEYER.

Witnesses:
GEO. K. STORM,
E. B. HOWARD.