N. B. ABBOTT.

Steam-Roller for Composition-Pavements.

No. 197,713. Patented Dec. 4, 1877.

Fig. 1.

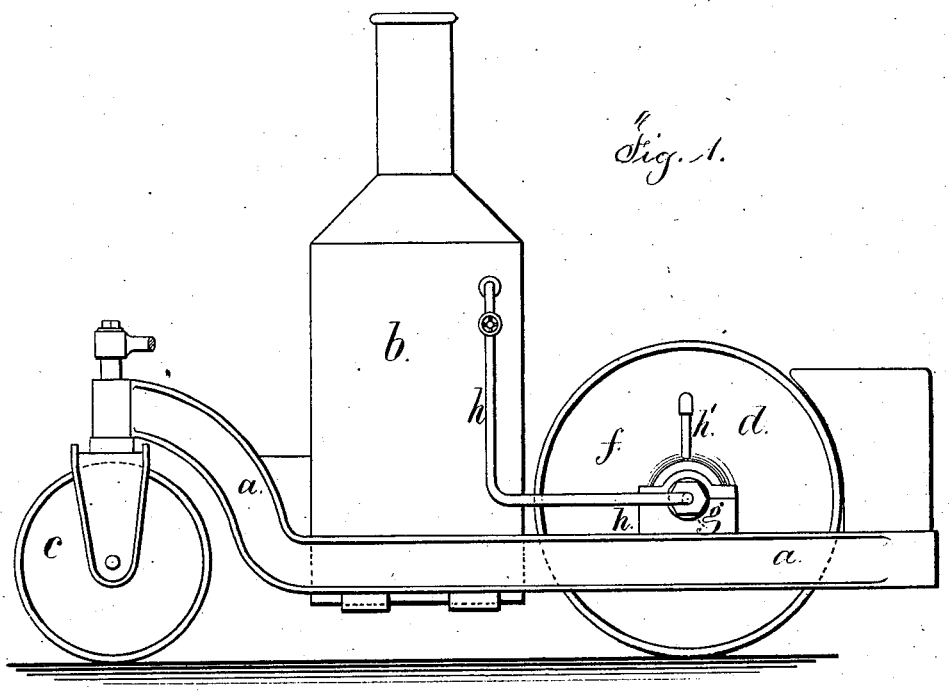
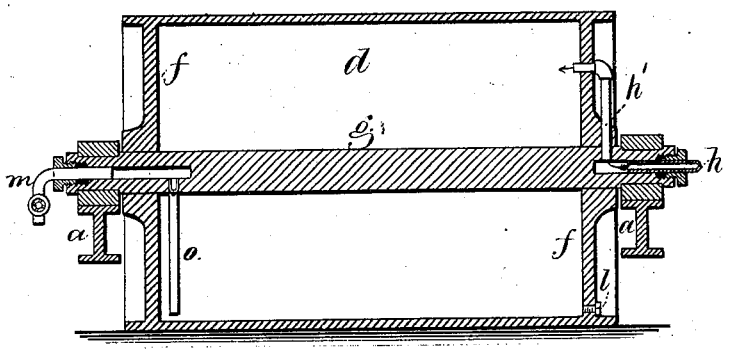


Fig. 2.



Witnesses

Chas. H. Smith

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atty

UNITED STATES PATENT OFFICE.

NATHAN B. ABBOTT, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND JOHN P. CRANFORD, OF SAME PLACE.

IMPROVEMENT IN STEAM-ROLLERS FOR COMPOSITION PAVEMENTS.

Specification forming part of Letters Patent No. **197,713**, dated December 4, 1877; application filed November 6, 1877.

To all whom it may concern:

Be it known that I, NATHAN B. ABBOTT, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Steam-Rollers for Composition Pavements, of which the following is a specification:

Rollers for smoothing and consolidating pavements have been driven by steam, and, in some instances, the rollers used upon asphalt have been heated by fire upon a grate suspended upon the axle. The roller frequently has to remain stationary, during which the upper part of the roller becomes too highly heated and injures the asphalt.

My present improvement is made for rendering the heat of the roller uniform, and of any desired temperature; and consists in a steam-roller for composition pavements, containing a cylinder having closed heads, in combination with a connection from the cylinder to the boiler, so that the heat of the cylinder is derived from the steam under pressure, and is uniform, or nearly so.

In the drawing, Figure 1 is a side view, illustrating the steam-roller and the connection to the boiler; and Fig. 2 is a section longitudinally of the roller.

The frame *a*, boiler *b*, steering-roller *c*, and the engine and driving-gears to the roller *d* are of any usual or desired character.

The roller *d* is preferably made of wrought-iron, on account of the strength required, and because it becomes heated more easily.

The heads *f* are closed, and the axle *g* passes through such roller, and is supported in suitable bearings upon the frame.

The steam-pipe *h* passes from the boiler to the axle or shaft *g*, which axle is made hollow, the opening therein either extending directly into the interior of the cylinder, or to a pipe, *h'*, that connects at a hole passing through one of the heads.

By this means steam is passed into the interior of the cylindrical roller *d*, and the same is heated to the desired temperature. If the boiler is of the proper temperature, the steam may pass directly into the roller; but if the temperature of the steam is insufficient, the steam-pipe is to be led through the furnace in the form of a coil, so that the steam becomes superheated.

The air and water of condensation may be blown off by the cock or plug *l* from time to time, as required.

It is generally preferable to provide at the end of the axle *g*, opposite to the inlet steam-pipe, a discharge-pipe, *m*, with cock or valve to regulate the steam blowing off from the hollow roller, and there should be a pipe, *o*, extending radially to near the inside of the roller *a*, to allow air, steam, or water of condensation to be blown off from time to time. This pipe may lead to the water-tank, or to any suitable receptacle, and should have a cock to regulate the discharge.

I am aware that cylinders and rollers heated by steam have been employed in the manufacture of paper and sheet fabrics.

I claim as my invention—

The combination, in the steam-roller for composition pavements, of a cylinder with closed heads and inlet and discharge openings, and a pipe passing from the boiler to the said axle, substantially as set forth.

Signed by me this 20th day of October, A. D. 1877.

NATHAN B. ABBOTT.

Witnesses:

APPLETON J. IDE,

W. A. INSKEEP.