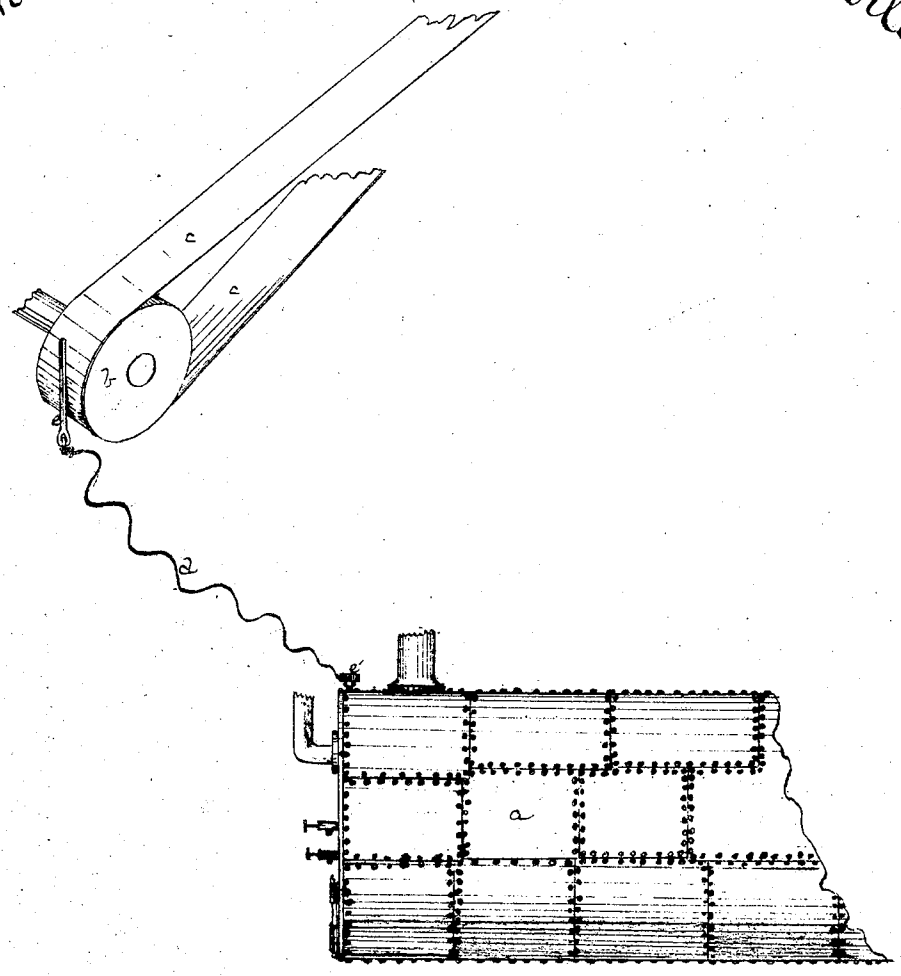
101248 PATENTED MAR 29 1870

John T. Fisher: Preventing Incrustation of Boilers.



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United States Patent Office.

JOHN T. FISHER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO JAMES B. CLOW, OF SAME PLACE.

Letters Patent No. 101,248, *dated March* 29, 1870.

IMPROVEMENT IN PREVENTING THE INCRUSTATION OF STEAM-BOILERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN T. FISHER, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Preventing Incrustation of Boilers; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, which, by a perspective, illustrates my improvement.

It is well known that the belting used in connection with or as a part of machinery, and also pulley or other rapidly-revolving wheels, generate a considerable amount of electricity.

The object of my invention is to apply the electricity thus generated by belts, pulley, or other parts of machinery, to preventing the incrustation of steam-boilers, and

The nature of it consists in connecting the steam-boiler by a copper wire or other conductor of electricity with a revolving wheel, pulley, belt, or some other part of the machinery, in such way that the electricity so generated by the machinery, or any part of it, shall be conducted to the boiler, and so charge the boiler that the incrustation of it by the deposition of solid matter from the water shall be prevented.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and manner of use.

a is a steam-boiler of the ordinary or any known construction.

b is a pulley, over which passes the belt *c*.

The boiler *a* and belt *c* I connect together by a copper rod, *d*, or by any other article or material which is a conductor of electricity.

One end of the wire or rod *d* is placed near enough to the belt *c*, say, about one inch from it, to receive the electricity as it is generated by the moving belt, or if so preferred, a receiver, *e*, to which the rod or wire *d* is attached, may be interposed between the rod *d* and belt *c*.

The receiver *e* may be made with or without points, as may be preferred. The effect in either case is the same.

The wire *d* may be attached to the floor or ceiling overhead by non-conductors, or otherwise carried along from the belt *c* to the boiler *a*, to which it is so intimately attached by a knob, *e'*, screwed into one of the rivets or any other suitable part of the boiler, as to charge the boiler with the electricity so generated, but other modes of attaching the rod *d* to the boiler may be adopted.

The chief point of construction is that the conducting-wire *d* should be so fixed that it will receive a full charge of electricity from the revolving belt, or from any other part of the machinery which generates electricity, and that its isolation be preserved until it reaches the boiler, to which it is attached.

Thus the boiler is kept continually charged with electricity which is generated by the machinery, so that its negative condition is changed to a positive condition, whereby is prevented the deposition or precipitation of calcinous matter in the boiler from the water.

The devices described cost but a trifle, and can be easily attached to either a new or old boiler. There is no expense involved in its use, whereby the cost of batteries, chemicals, magnets, and compositions of matter is entirely saved.

The better to secure the result described, the upper or exposed portion of the boiler may be coated with calcined gypsum or other like electrical non-conductor, and this in turn be covered with a wash of plumbago or other solution containing a metallic oxide, care being taken, however, that this outer wash or coating does not come in contact with the wire leading from the belt to the boiler.

In most cases the mortar with which the outside of the boiler is commonly covered will, when thoroughly dried, suffice for the inner or non-conducting coating. The electricity from the belt will then positively electrify the inside of the boiler, with the beneficial results above stated.

What I claim as my invention, and desire to secure by Letters Patent, is—

Connecting a steam-boiler by a copper wire or rod, or by any other article or material which is a conductor of electricity, with a belt or other part of the machinery, which, when in motion, is a generator of electricity, substantially as and for the purposes above set forth.

In testimony whereof I, the said JOHN T. FISHER, have hereunto set my hand.

JOHN T. FISHER.

Witnesses:

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