A. C. COCK.

Operating Boiler-Brooms.

No. 204,200. Patented May 28, 1878.

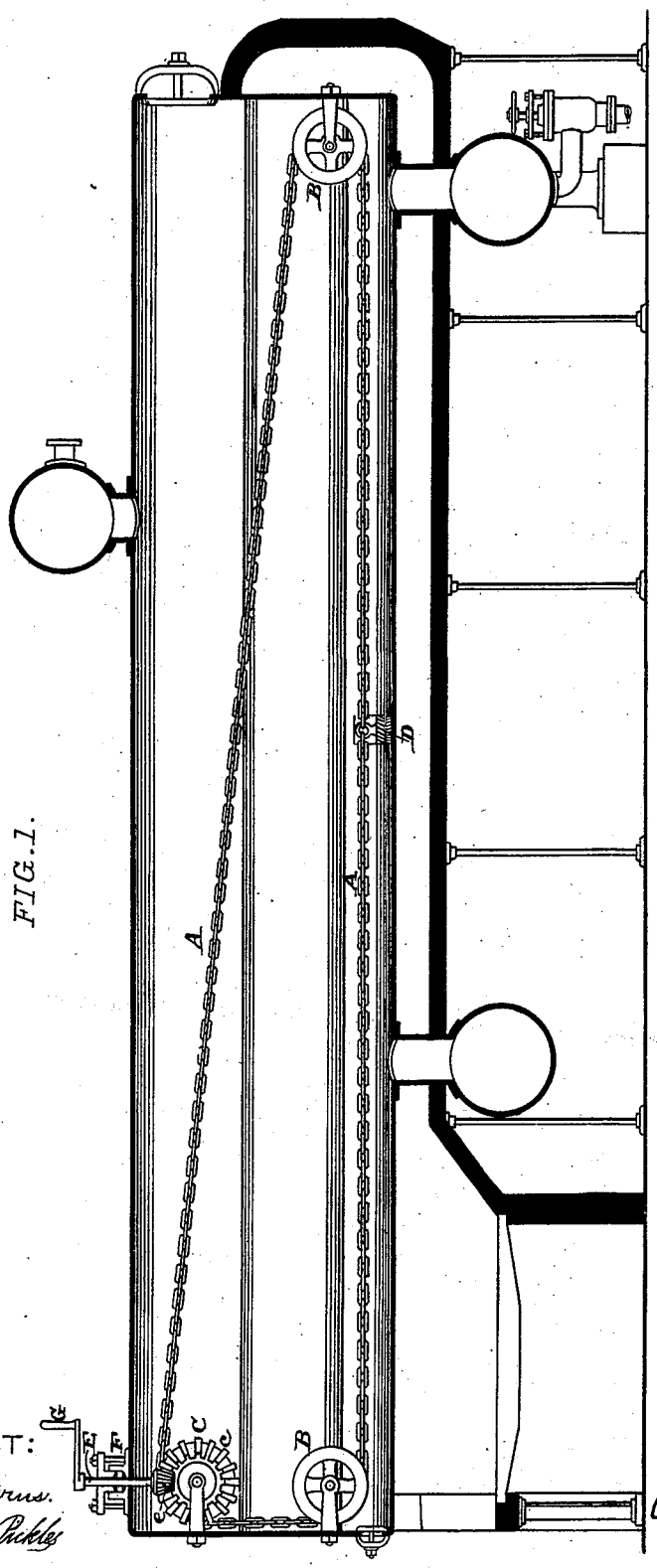

FIG. 1.

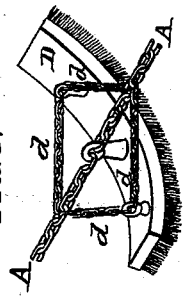

FIG. 3.

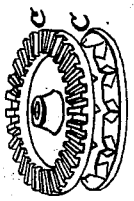

FIG. 2.

ATTEST:

Robt. Burns.

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INVENTOR:

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UNITED STATES PATENT OFFICE.

ANDREW C. COCK, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN OPERATING BOILER-BROOMS.

Specification forming part of Letters Patent No. **204,200**, dated May 28, 1878; application filed February 16, 1878.

To all whom it may concern:

Be it known that I, ANDREW C. COCK, of St. Louis, in the county of St. Louis and State of Missouri, have invented a new and useful Mechanical Device for the Purpose of Working or Operating a Boiler-Broom, of which the following is a specification:

The object of my invention is to provide a suitable and reliable movement, by gear or otherwise, by which a broom is made to traverse the bottom of the boiler from one end to the other, which result may be accomplished while generating or having steam up, or may at any time sweep the accumulated mud, sediment, or scale into the mud-receivers, and thereby prevent the burning of the shells of a steam-boiler. Said sediment settles on the sheet between the water and the fire.

My invention consists in the arrangement inside of the boiler by which an endless chain passes around suitably-grooved pulleys secured to the boiler-heads, the broom being attached to the chain, and operated by bevel-gear and shaft-connections with mechanism outside of the boiler.

In the accompanying drawings, in which similar letters indicate like parts, Figure 1 is a longitudinal section of a steam-boiler embodying my invention. Fig. 2 is a detail perspective view of the bevel-and-chain wheel. Fig. 3 is a detail perspective view of the manner in which the chain attachments are made with the broom attached.

A is an endless chain, which passes around grooved pulleys B C, carrying broom D, said broom being made to correspond with, and fitting the bottom of, the boiler. *d d d*, Fig. 3, are stay-chains, to prevent any side movement or swing of the broom. Grooved pulley C is provided with bevel-gear *c*, which meshes into and is driven by bevel-pinion *e*, attached to shaft E, passing through stuffing-box F, and having an outer-end hand-crank, G, by which the gear is operated.

When the apparatus is to be operated, the bevel-gear is turned by the hand-crank, or by any approved mechanism, which puts in motion the chain, and thereby the brush D, traveling from one end of the boiler to the other. Two or more of these brushes may be attached to the chain; but one will answer every purpose. When the brush arrives at the end of the boiler the gear-wheel is reversed. Then the brush is made to travel in the opposite direction. The same movement may be again repeated until the boiler is thought to be entirely clear of mud and sediment.

Ready access may be had to the inside of the boiler by means of the usual man-hole.

There may be changes in the position of bevel-gear and of the shaft, made necessary in some instances, as in five-flued boilers and others where the spaces between the flues vary. Such changes will not alter the mechanism of the chain and broom.

In cases where boilers are so constructed as to admit of a chain, I desire to leave out grooved pulley B in forward end of the boiler and substitute bevel-and-chain wheel C *c*, with shaft E lengthened to suit; or by running shaft E in a horizontal position through the boiler-head, (with bevel-gear the same,) and stuffing-box F placed on outside of boiler-head, instead of as represented in drawing; or by dispensing with bevel-wheel and bevel-pinion *c* and *e*, placing stuffing-box F on the side of the boiler, and running shaft E through center of chain-wheel C, and keyed thereon.

I am aware that it is not new to use brushes or scrapers for cleaning steam-boilers, or mechanism for operating them, and do not claim such broadly; but

What I do claim, and desire to secure by Letters Patent, is—

1. The combination of the endless chain A, passing over grooved pulleys B B and toothed wheel C, attached to the boiler-heads, and chain attachments *d d* with the broom D, arranged to be adapted to boilers having two or more flues, substantially as set forth and described.

2. The combination of the endless chain A with broom D, guide-pulleys B C, bevel-wheel *c e*, and crank-shaft E, constructed and operating substantially as and for the purpose set forth.

ANDREW C. COCK.

Attest:

JOHN N. MASON,

W. BRAITHWAITE.