

(No Model.)

T. MITCHELL.
BLOW-OFF FOR STEAM BOILERS.

No. 552,385.

Patented Dec. 31, 1895.

Fig. 1

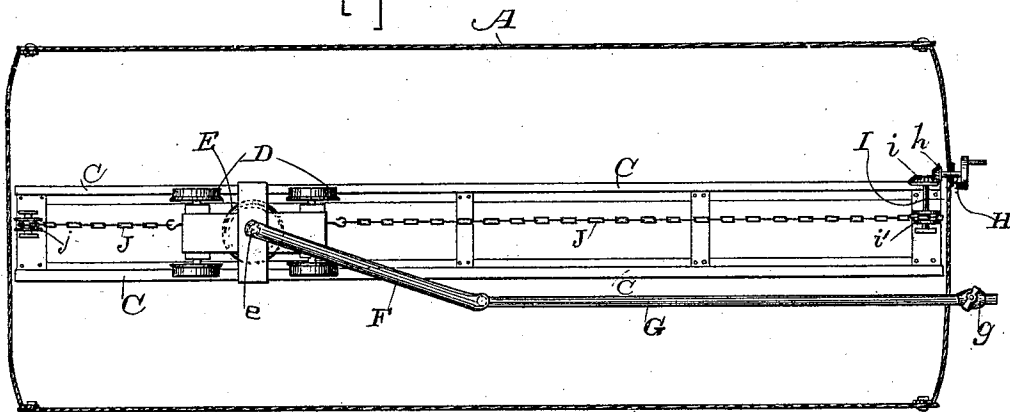


Fig. 2

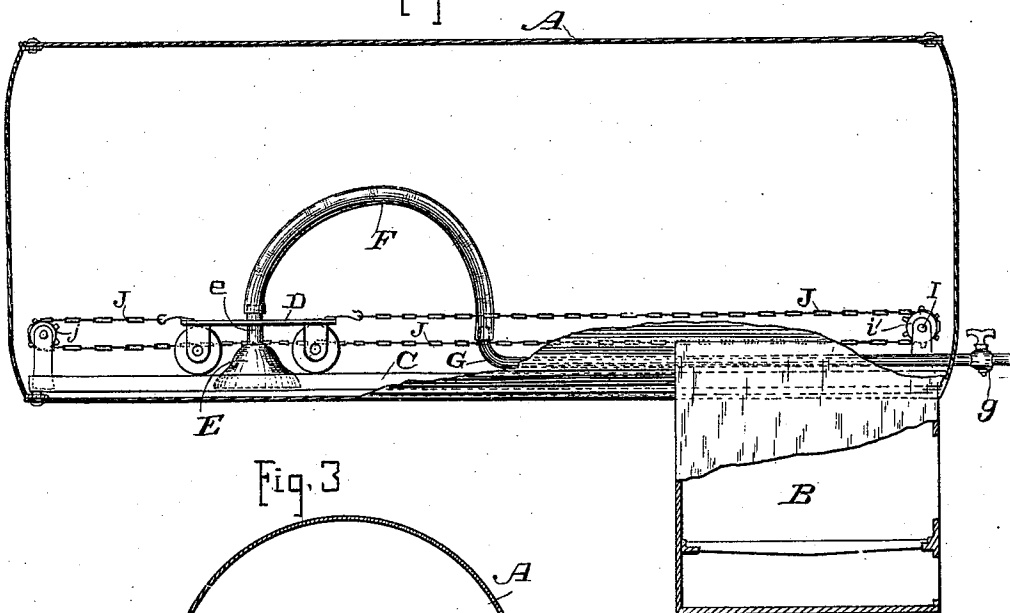
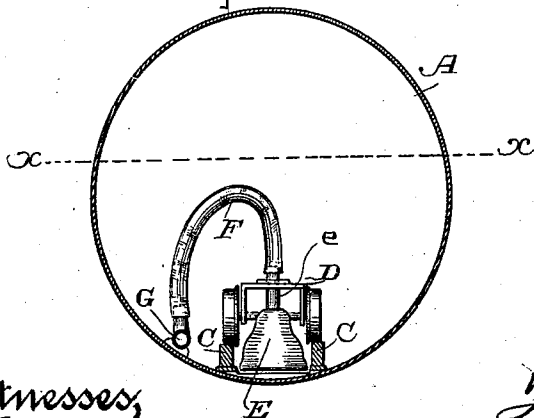


Fig. 3



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UNITED STATES PATENT OFFICE.

THOMAS MITCHELL, OF GRANTSVILLE, NEVADA.

BLOW-OFF FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 552,385, dated December 31, 1895.

Application filed April 4, 1895. Serial No. 544,470. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MITCHELL, a citizen of the United States, residing at Grantsville, county of Nye, State of Nevada, have invented an Improvement in Blow-Offs for Steam-Boilers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of blow-offs by which the sediment in the bottoms of boilers is got rid off and the boilers cleaned; and my invention consists in a movable or traveling blow-off and the details of its arrangement and construction which I shall hereinafter fully describe.

The object of my invention is to provide a blow-off device which is adapted to be moved from end to end of the boiler while the latter is in use, and thereby to reach and blow out the sediment completely and from all portions of the boiler.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a horizontal longitudinal section of a boiler, showing the blow-off in plan. Fig. 2 is a vertical longitudinal section of the boiler, showing the blow-off in side elevation. Fig. 3 is a vertical cross section of the boiler, showing the blow-off in end elevation.

A is a boiler having a suitable furnace portion B. In the bottom of the boiler and extending throughout the length thereof is a suitable track C. This track may be secured in the boiler in any suitable manner, and may rest upon its bottom or may be suspended within the boiler in any desirable manner. Upon this track is mounted and adapted to travel a wheeled truck or frame D, which carries the mouthpiece E of the blow-off, said mouthpiece being preferably of a flaring or bell shape or what may be termed a "funnel-mouthed pipe." This lies just above and is adapted to travel along close over the very bottom of the boiler. Its hollow stem or neck *e* is connected by a flexible pipe or tube F with a stationary pipe G, constituting the blow-off pipe, and which extends from without through the end of the boiler inwardly to about half-way of its length. The outer end of the blow-off pipe G is provided with a suitable blow-off cock *g*.

The wheeled frame or truck D is adapted

to be moved back and forth throughout the length of its track by means of suitable connections operated from the exterior of the boiler. These connections in their best form consist of a crank-shaft H, passing into the boiler from its end through a suitable stuffing-box.

Upon the inner end of the shaft H is a beveled pinion *h*, which meshes with a beveled gear *i* upon a shaft I, mounted in suitable bearings within the boiler. This shaft carries a sprocket-wheel *i'*, from which an endless chain J extends to and around a sprocket-wheel *j* in the other end of the boiler, said chain having its ends attached to opposite ends of the wheeled frame or truck D. It will now be seen that by turning the shaft H motion will be transmitted through the gearing and sprocket-wheels and chain described to the wheeled frame or truck, which will thereby be moved back and forth over the bottom of the boiler throughout its entire length. When, therefore, this movement is taking place and the blow-off cock *g* is open, the blow-off will take place through the mouth-piece E, flexible tube F, and blow-off pipe G, and the cleaning out of the boiler will be thorough, complete, and equal throughout its entire length, and this may take place while the boiler is in operation.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A blow-off for steam boilers, consisting of a movable vehicle carrying a suitable mouth-piece lying in the lower portion of the boiler, means for moving said vehicle and mouth-piece within the boiler to different points therein, and a suitable yielding and controllable connection, whereby said mouth-piece communicates with the exterior.

2. A blow-off for steam boilers, consisting of a suitable mouth-piece lying in the lower portion of the boiler, a movable vehicle in which the mouth-piece is mounted for moving said mouth-piece within the boiler to different points therein, a stationary pipe to the outside, provided with a controlling cock, and a flexible tube connecting the inner end of said pipe with the mouth-piece.

3. A blow-off for steam boilers consisting of a mouth-piece lying within the lower por-

tion of the boiler, and having a yielding connection whereby it communicates with the exterior, a moving frame or truck within the boiler and upon which said mouth-piece is carried, and means, operated from the exterior, for causing said frame or truck to travel.

4. A blow-off for steam boilers, consisting of a mouth-piece lying within the lower portion of the boiler, a pipe extending to the outside of the boiler and having a controlling cock, a flexible tube connecting the inner end of said pipe with the mouth-piece, a frame or truck within the boiler by which said mouth-piece is carried, and means operated from the exterior for causing said frame or truck to travel.

5. A blow-off for steam boilers consisting of a mouth-piece lying within the lower por-

tion of the boiler, a pipe extending to the outside of the boiler and having a controlling cock, a flexible tube connecting the inner end of said pipe with the mouth-piece, a frame or truck within the boiler by which said mouth-piece is carried, and the means for causing said frame or truck to travel, consisting of the crank shaft operated from without, the chain secured to said frame or truck, and having suitable sprocket-wheels upon which it is mounted, and suitable gearing from the crank shaft by which said chain is driven.

In witness whereof I have hereunto set my hand.

THOS. MITCHELL.

Witnesses:

G. M. DYER,

D. W. MITCHELL.