

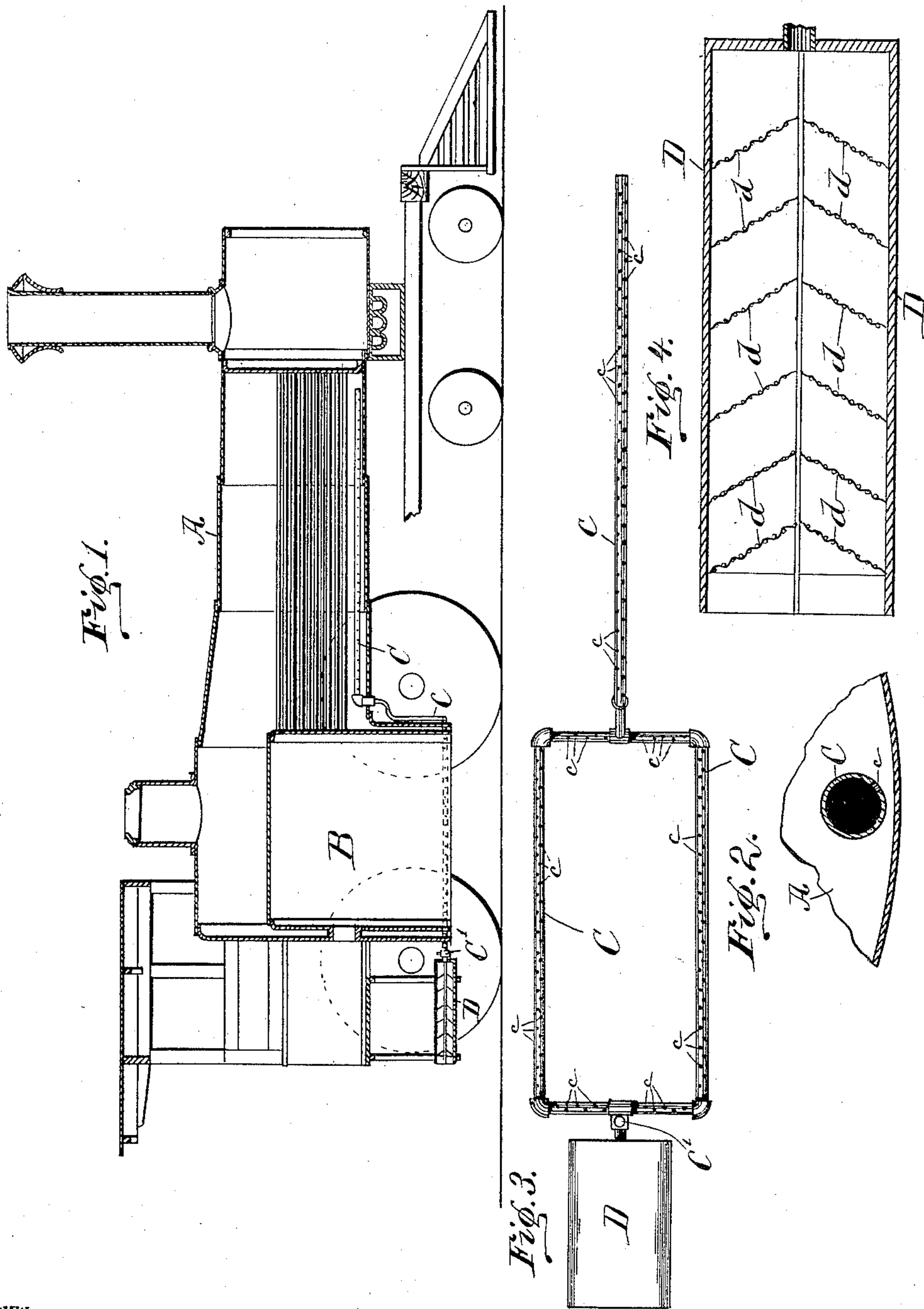
(No Model.)

A. W. QUACKENBUSH.

BLOW OFF APPARATUS FOR STEAM BOILERS.

No. 397,565.

Patented Feb. 12, 1889.



WITNESSES.

G. W. H. Brown,
L. W. Comstock

INVENTOR.

Andrew W. Quackenbush,
per
E. W. Bradford.
ATTORNEY.

UNITED STATES PATENT OFFICE.

ANDREW W. QUACKENBUSH, OF MOBERLY, MISSOURI.

BLOW-OFF APPARATUS FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 397,565, dated February 12, 1889.

Application filed September 6, 1888. Serial No. 284,734. (No model.)

To all whom it may concern:

Be it known that I, ANDREW W. QUACKENBUSH, a citizen of the United States, residing at Moberly, in the county of Randolph and State of Missouri, have invented certain new and useful Improvements in Blow-Off Apparatus for Steam-Boilers, of which the following is a specification.

The object of my said invention is to provide an apparatus by which mud or other sediment may be blown off from steam-boilers, which shall be simple and inexpensive in construction and quickly and easily operated. This object is accomplished by providing at the bottom of the boiler a perforated pipe, preferably extending its entire length, and which (in the case of boilers constructed in that manner) may extend through the water-space around the fire-box, and from there to the outside, where it is discharged into a drum, which should be provided with cones of wire-netting or perforated metal to retard or break the force of the sediment, water, and steam while blowing off, so as not to injure the machinery and paint with which it might otherwise come in contact.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a central longitudinal vertical section of a locomotive the boiler of which is provided with a blow-off apparatus embodying my said invention; Fig. 2, a transverse sectional view of a fragment of the shell of the boiler and the blow-off pipe, showing the relative position of these parts; Fig. 3, an under side plan of the blow-off pipe and the drum with which it connects separately; and Fig. 4 a sectional view of said drum, on an enlarged scale, similar to a portion of Fig. 1.

In said drawings the portions marked A represent the boiler of a locomotive; B, the fire-box thereto; C, the perforated pipes, and D the drum.

The locomotive, so far as it is represented, is shown simply for the purpose of illustrating how my improved blow-off apparatus is used in connection therewith. Being in itself no part of my present invention, but little more than outlines are given in the drawings,

and it will not be further described herein, except incidentally in describing the invention.

The pipe C should extend substantially the whole length of the boiler, as shown, and in case of locomotive and other boilers of like construction it should also extend around the water-space surrounding the fire-box B. It has numerous perforations, *c*, (of any shape desired,) preferably arranged in two rows, and on the under side of the pipe, said perforations being thus at somewhat of an angle with a perpendicular line. The pipe extends to the outside in the rear of the fire-box, where it is provided with a blow off cock, *C'*, by opening which the person in charge of the boiler is enabled to blow-off all the mud or other sediment and impure water which may have collected in the boiler, and which, when this cock is opened, are forced inside the pipe through the perforations by the pressure in said boiler.

As the pressure in the boiler is usually considerable, and the sediment, water, and steam would thus, if no retarding device was employed, be discharged from the pipe with considerable force, I have provided a drum or trap, D, into which the discharging end of the pipe C extends. This drum has a number of partitions, *d*, extending through it, preferably in the form of cones, as shown, and made of wire-netting or perforated metal, and these effectually break the force of the discharge, so that the machinery or painted portions which may be in proximity thereto shall not be marred or injured thereby.

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

1. The combination of a steam-boiler, a perforated pipe extending inside said boiler, a blow-off cock, and a retarding drum or trap secured at the discharging end of said pipe.

2. The combination, with a blow-off pipe extending inside of a boiler, of a retarding drum or trap consisting of a shell and a number of perforated partitions inside said shell, substantially as set forth.

3. The combination, with a blow-off pipe, of a retarding drum or trap secured to its dis-

charging end and provided with inclined or cone-shaped partitions for breaking the force of the discharge, substantially as shown and described.

- 5 4. The combination of a steam-boiler, a blow-off pipe extending along the bottom and inside of said boiler, provided with perforations which enter it at an angle with a vertical line, a blow-off cock inserted in the dis-
10 charging end of said pipe outside of said boiler, and a drum or trap secured to said dis-

charging end and containing angular or cone-shaped partitions, all substantially as set forth.

In witness whereof I have hereunto set my 15 hand and seal, at Moberly, Missouri, this 1st day of September, A. D. 1888.

ANDREW W. QUACKENBUSH. [L. S.]

Witnesses:

WILLIAM FIRTH,
CHARLES B. RODES.