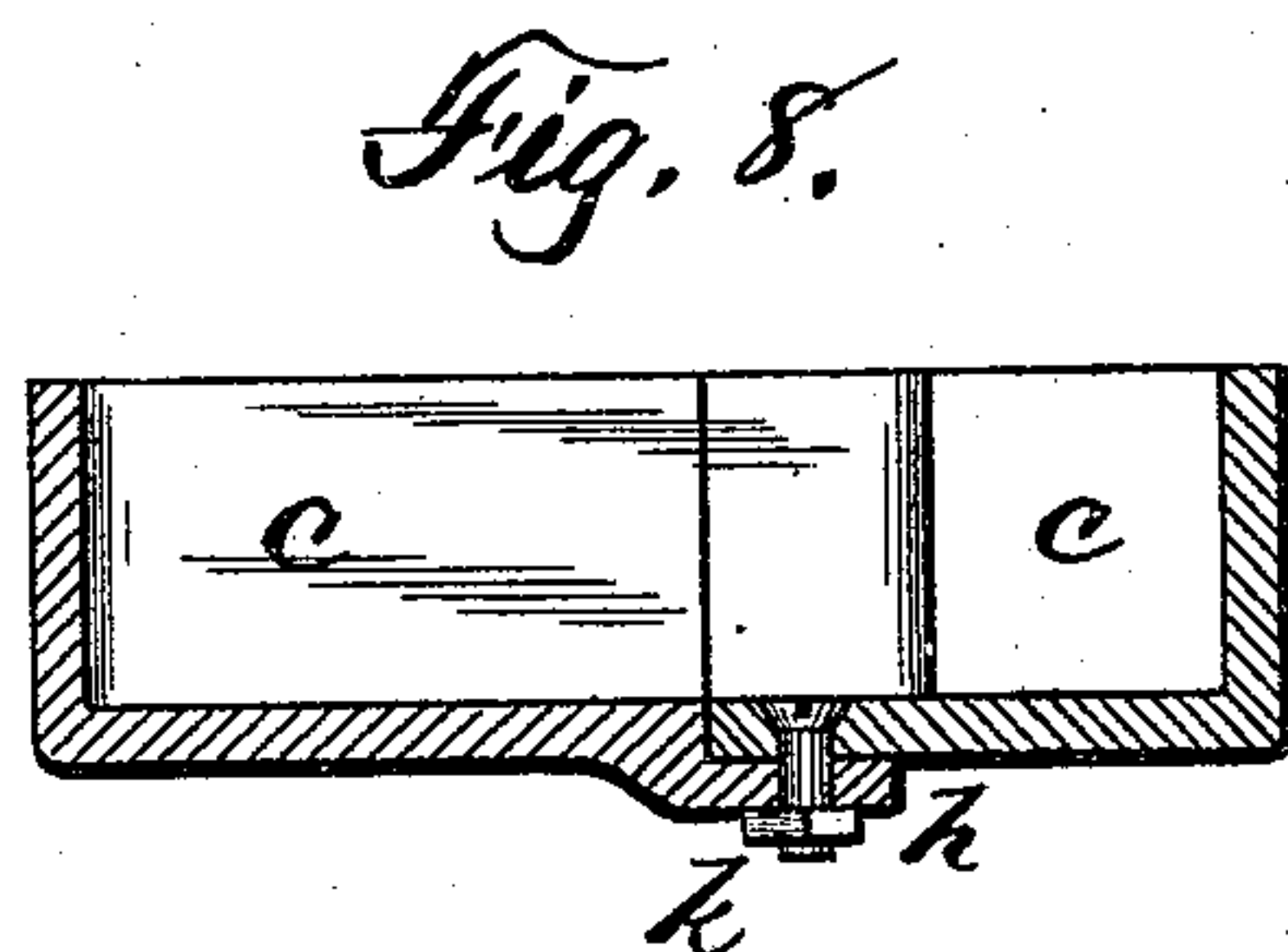
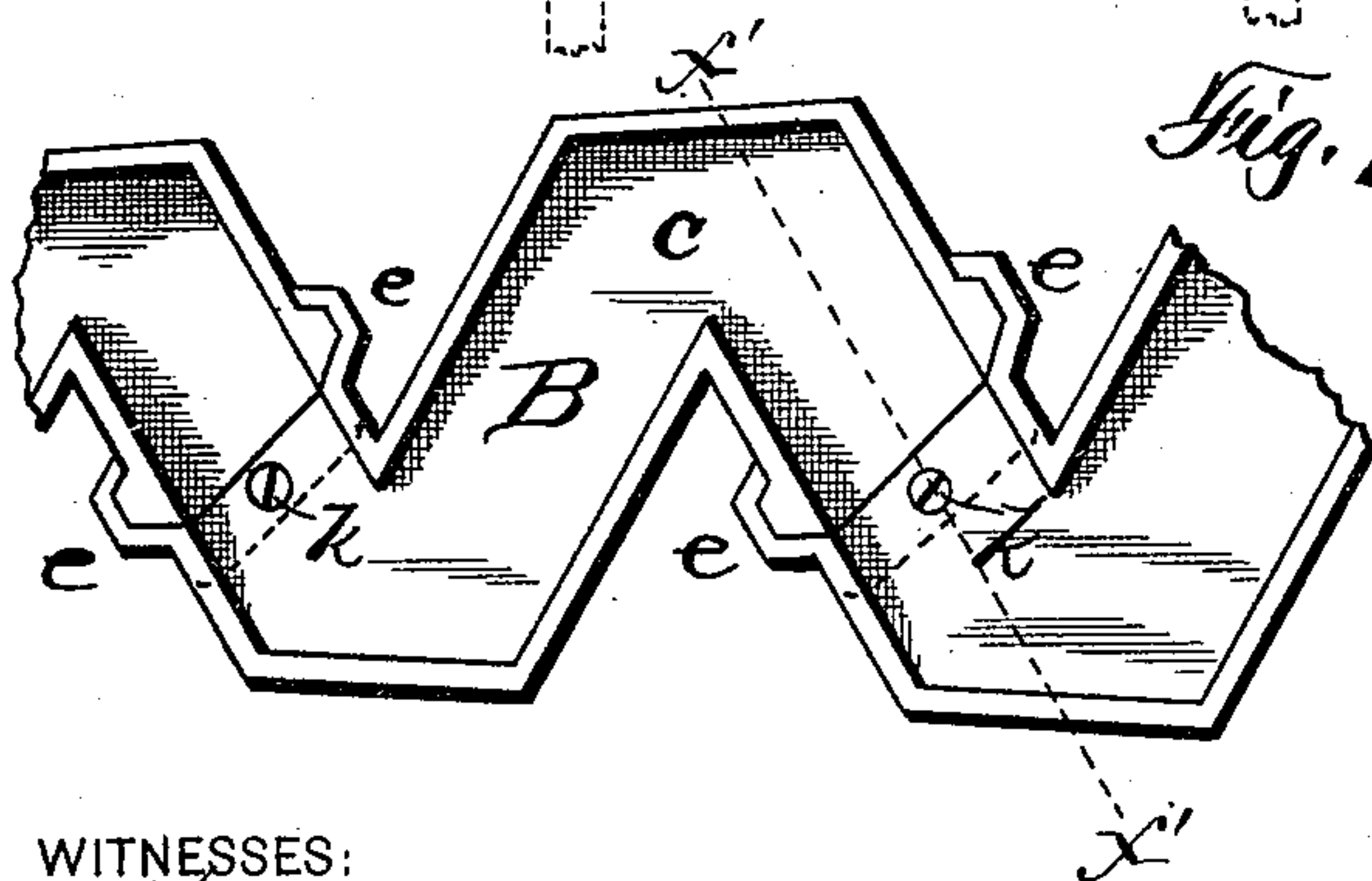
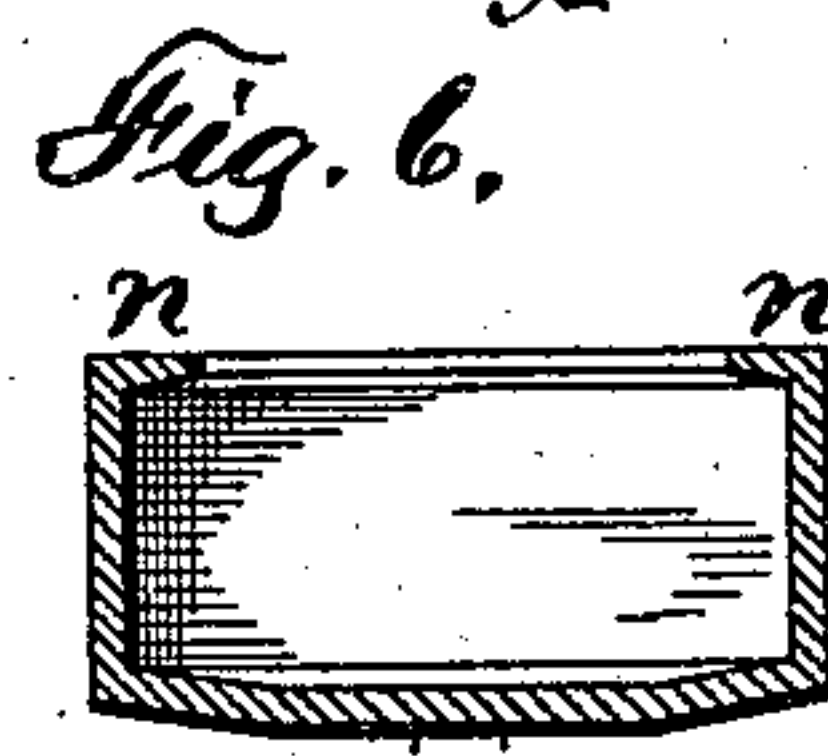
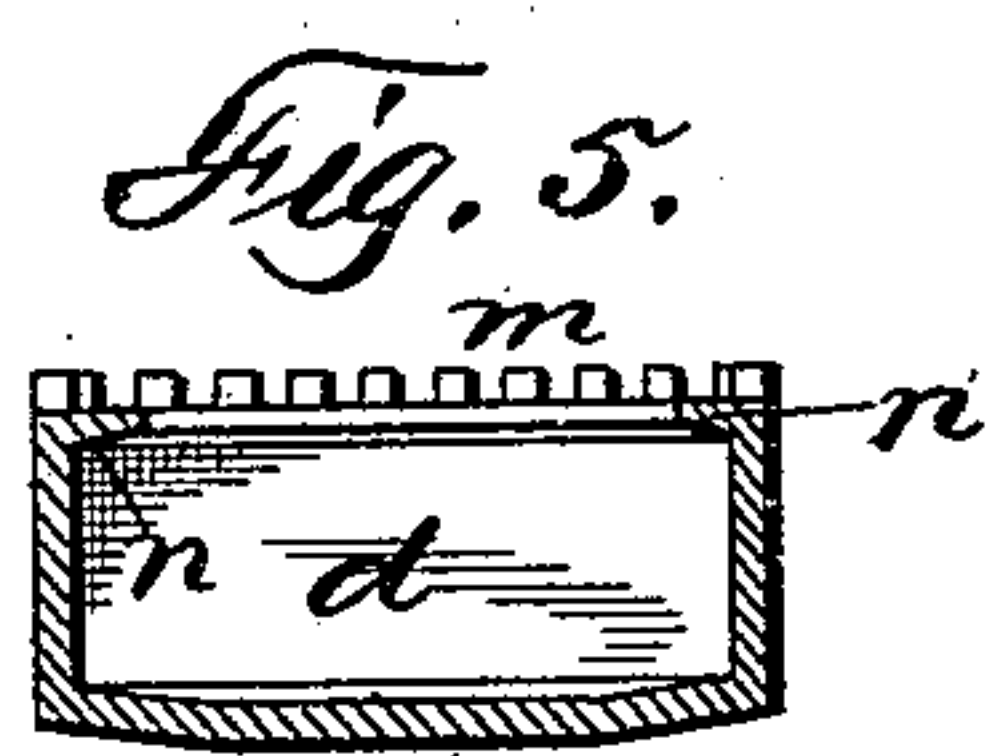
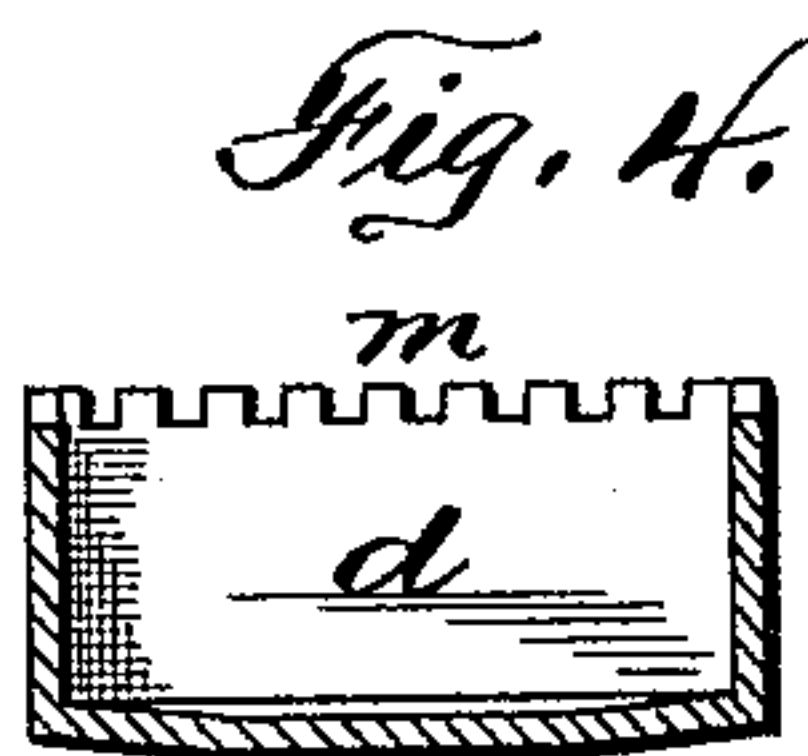
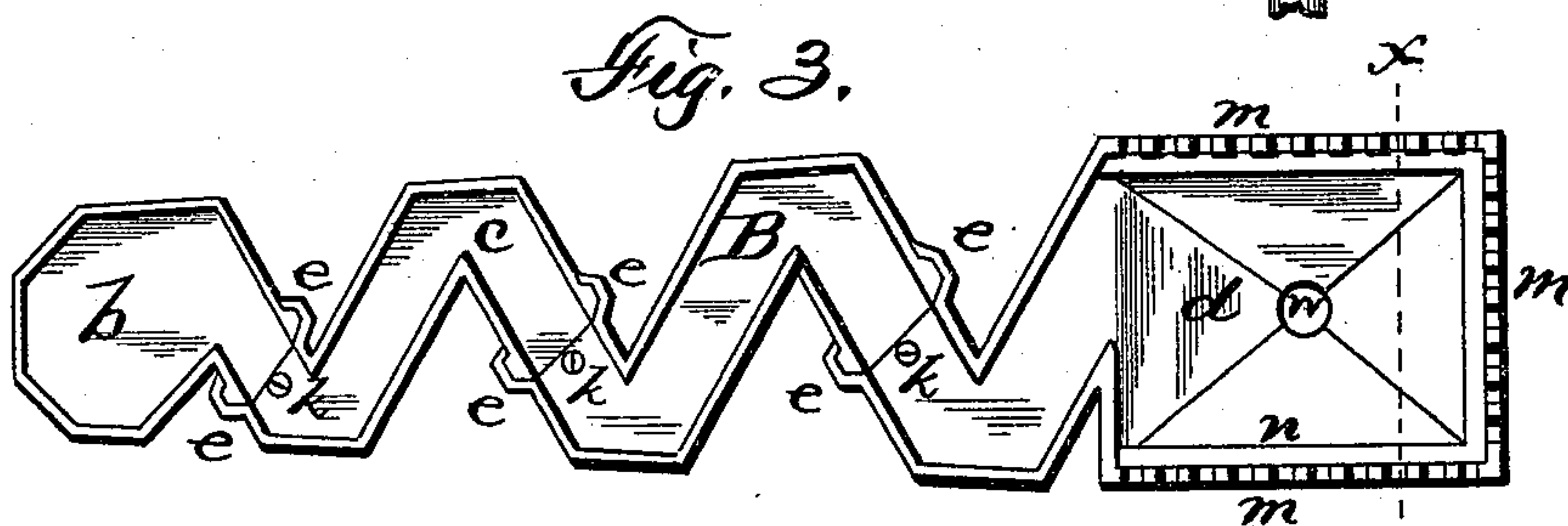
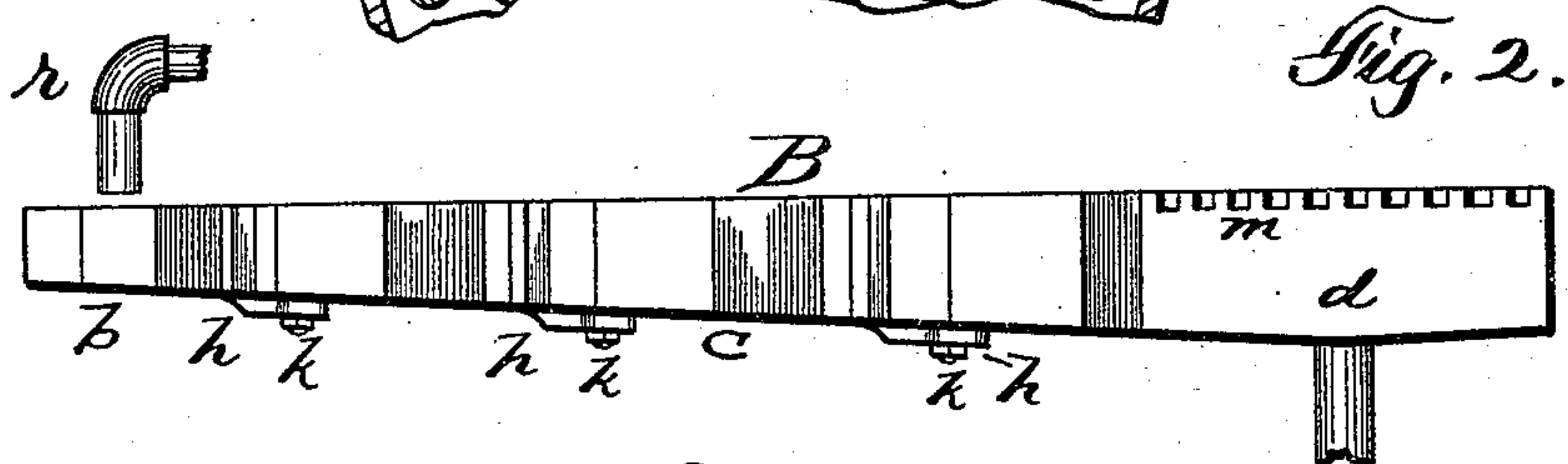
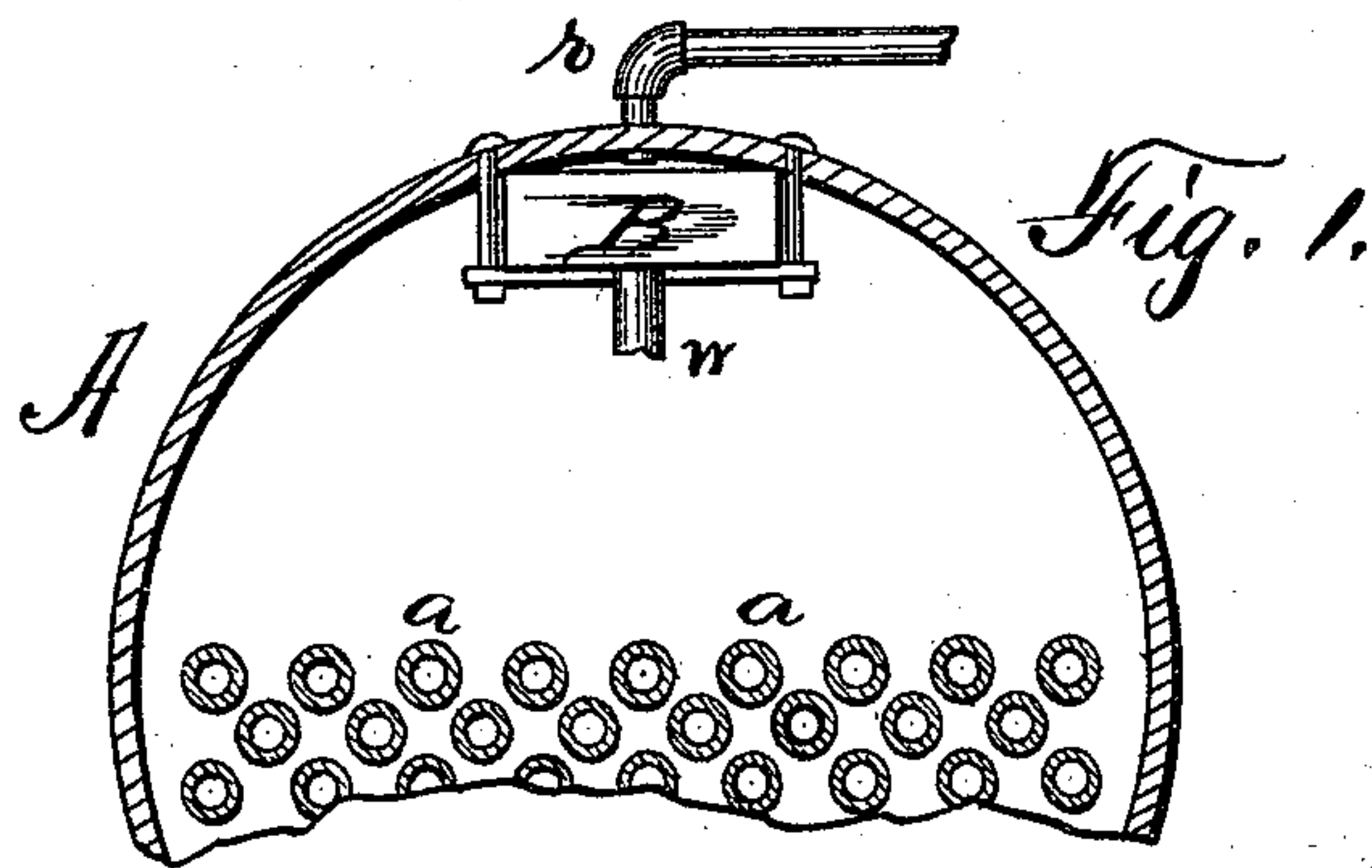


(No Model.)

W. V. WALKER.  
FEED WATER APPARATUS.

No. 491,825.

Patented Feb. 14, 1893.



WITNESSES:

H. A. Carhart  
C. B. Kinn

INVENTOR

William V. Walker  
by Smith & Denison  
his ATTORNEYS.



# UNITED STATES PATENT OFFICE.

WILLIAM V. WALKER, OF MORAVIA, NEW YORK, ASSIGNOR OF ONE-HALF  
TO HENRY M. JEWETT, OF SAME PLACE.

## FEED-WATER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 491,825, dated February 14, 1893.

Application filed November 3, 1892. Serial No. 450,825. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM V. WALKER, of Moravia, in the county of Cayuga, in the State of New York, have invented new and  
5 useful Improvements in Feed-Water Apparatus, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to feed-water purifiers;  
10 adapted to be supported or suspended within a boiler shell, and in which the water is primarily heated so that substantially all of the impurities are precipitated before the heated water is discharged into the water chamber  
15 of the boiler.

My object is to improve the construction of the purifier, by connecting its sections by a tongue and groove joint and a lap of one under the other; by providing means whereby  
20 the discharge is broken up; and by providing means whereby the surging of the water in the pan is controlled and the discharge regulated, particularly in locomotives, road engines or other portable boilers, while they are  
25 in motion.

My invention consists in the several novel features of construction and operation herein-  
after described and which are specifically set forth in the claims hereunto annexed. It is  
30 constructed as follows, reference being had to the accompanying drawings, in which

Figure 1, is a transverse section of a boiler, also showing, in end elevation the feed-water purifier suspended therein. Fig. 2, is a side  
35 elevation of the purifier, detached. Fig. 3, is a top plan of same. Fig. 4, is a transverse section of the precipitating pan, having notched edges on line  $x x$  without the inward flange. Fig. 5, is a like view of the same with the  
40 flange and notched edges. Fig. 6, is a like view of the same with the flange and without the notches. Fig. 7, is a top plan of part of the conduit portion enlarged. Fig. 8, is a vertical transverse section on line  $x', x'$ , in Fig. 7.

A—, is a boiler shell having flues — $a-a$ — 45 all of ordinary construction.

B—, is the feed-water purifier consisting of a bottom, and vertical side walls creating a water receiver — $b$ —, a zigzag conduit — $c$ — and a precipitating pan — $d$ —, though the 50 form of the conduit may be varied, as the form shown is only for illustration. The purifier is constructed in sectional parts, connected by tongue and groove joints — $e$ — in the vertical walls, and a flange — $h$ — on one 55 section projecting under the adjacent end of the adjoining section, and a bolt — $k$ — through the bottom of one section and the flange of the other. In the top of the edges of the pan I cut notches or otherwise serrate them as at 60 — $m$ —, in order to break up the water as it flows over the top of the pan. In conjunction with these notches, or without them, I provide the top of the pan with the inwardly projecting flange — $n$ — which will prevent the wa- 65 ter in the pan from surging and splashing over, when the purifier is in a locomotive, road-engine or other portable boiler under motion. The purifier is provided with an ordinary water induction pipe — $r$ — and blow- 70 off pipe — $w$ —.

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

1. A feed water purifier constructed in sectional parts, connected by tongue and groove 75 joints in their vertical walls.

2. A feed-water purifier consisting of sectional parts, having their vertical walls connected by tongue and groove joints in their vertical walls, and a flange on each section 80 projecting under the adjoining section, and means to secure said flanges.

In witness whereof I have hereunto set my hand this 24th day of October, 1892.

WILLIAM V. WALKER.

In presence of—

HENRY M. JEWETT,

E. D. COOPER.