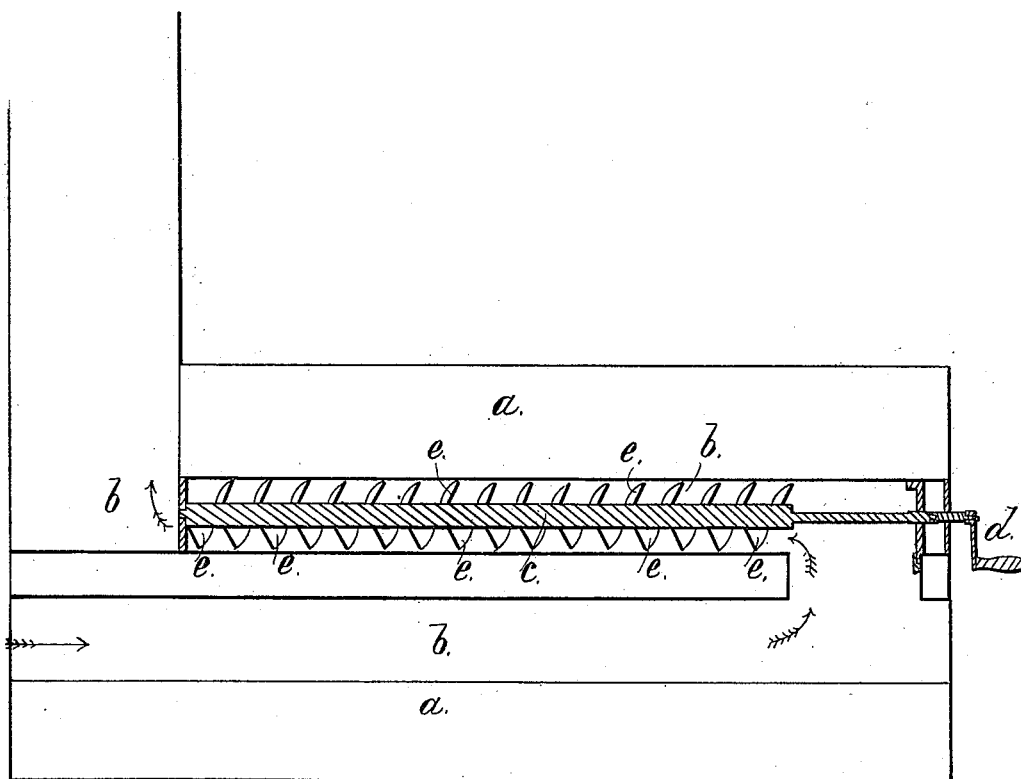
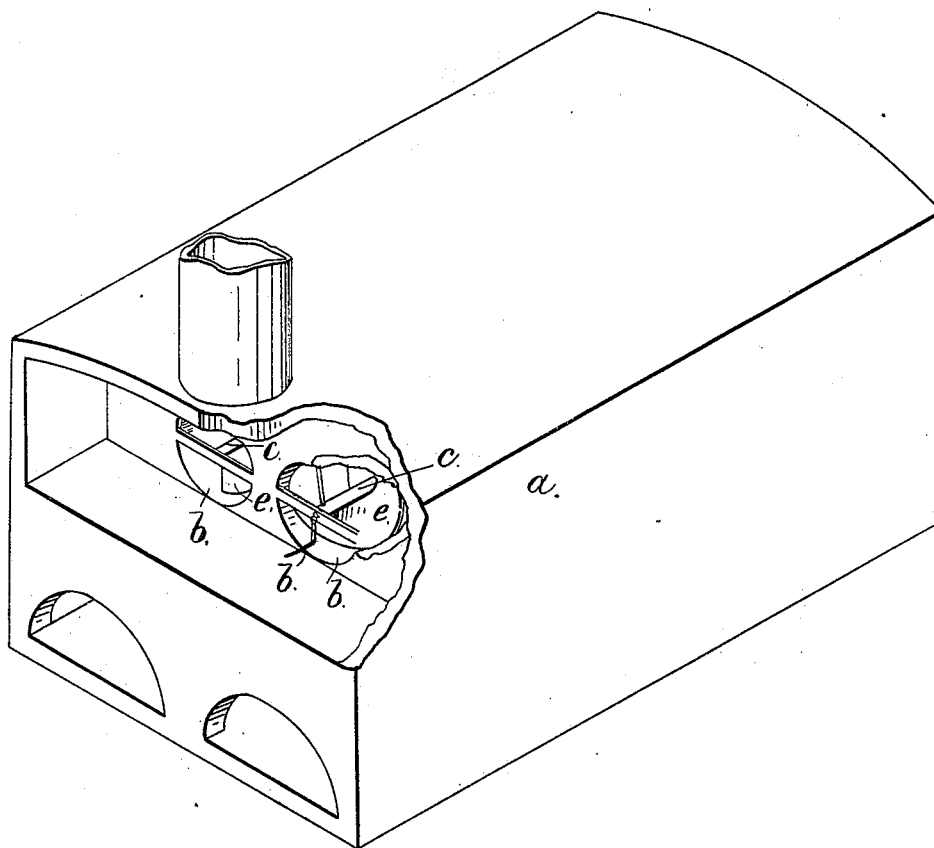


2 Sheets-Sheet 1.

*A. Chapman,*  
*Steam-Boiler Cleaner.*  
*No 6,595.      Patented July 17, 1849.*



*2 Sheets-Sheet 2.*  
*A. Chapman,*  
*Steam-Boiler Cleaner.*  
*N<sup>o</sup> 6,595.      Patented July 17, 1849.*



# UNITED STATES PATENT OFFICE.

ABNER CHAPMAN, OF FAIRFAX, VERMONT.

## METHOD OF INCREASING THE EFFECTIVE LENGTH OF AND CLEANSING BOILER-FLUES.

Specification of Letters Patent No. 6,595, dated July 17, 1849.

*To all whom it may concern:*

Be it known that I, ABNER CHAPMAN, of Fairfax, in the county of Franklin and State of Vermont, have invented certain new and useful Improvements in Flues to Steam-Boilers, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawing, which is a vertical section of the flues.

The nature of my invention consists in furnishing the horizontal flues of a steam boiler with spiral partitions, which partitions can be made to revolve to clear the flue, by which arrangement I am enabled to obtain all the advantages of a spiral flue which has been heretofore essayed and found useful until it became choked with ashes, &c., when it was found impossible to clean it, but by my construction the inside or spiral flue can be revolved, and thus be made to clean the flue perfectly, while it retains all the advantages of the stationary spiral flue.

The boiler, in which this apparatus is placed can be made of any of the ordinary forms, one of which is in part shown in the sectional drawing herewith accompanying, (a,) being the boiler, (b, b,) the flues; in

one of which my apparatus is fixed. This apparatus consists of a shaft (c,) running through the center of the flue, and having its bearings at each end, so that it can be made to revolve by means of a crank key (d,) that is inserted through the man holes; around this shaft a flat thread (e,) of plate metal, is affixed, that extends from the shaft to the walls of the flue, as clearly shown in the drawing, forming a spiral flue from one end to the other, by which the heat is more perfectly retained and fuel is thus economized; and it serves also the double purpose of a brace to prevent the flue (b,) from collapsing, and as a scraper to keep it clean.

Having thus fully described my improvement, I wish it to be understood that I do not claim forming a spiral flue within a steam boiler, as that has already been done, but

What I do claim as my invention and for which I desire to secure Letters Patent, is—

Spiral partitions, forming a spiral flue within the flues of a steam boiler, substantially as described, said thread being affixed to a shaft independent of the flue so that it can be made to revolve to scrape the flue, and clean it when it gets foul.

ABNER CHAPMAN.

Witnesses:

J. J. GREENOUGH,  
WM. GREENOUGH.