

H. SCHAUBEL.
Superheater for Steam-Boilers.

No. 220,670.

Patented Oct. 14, 1879.

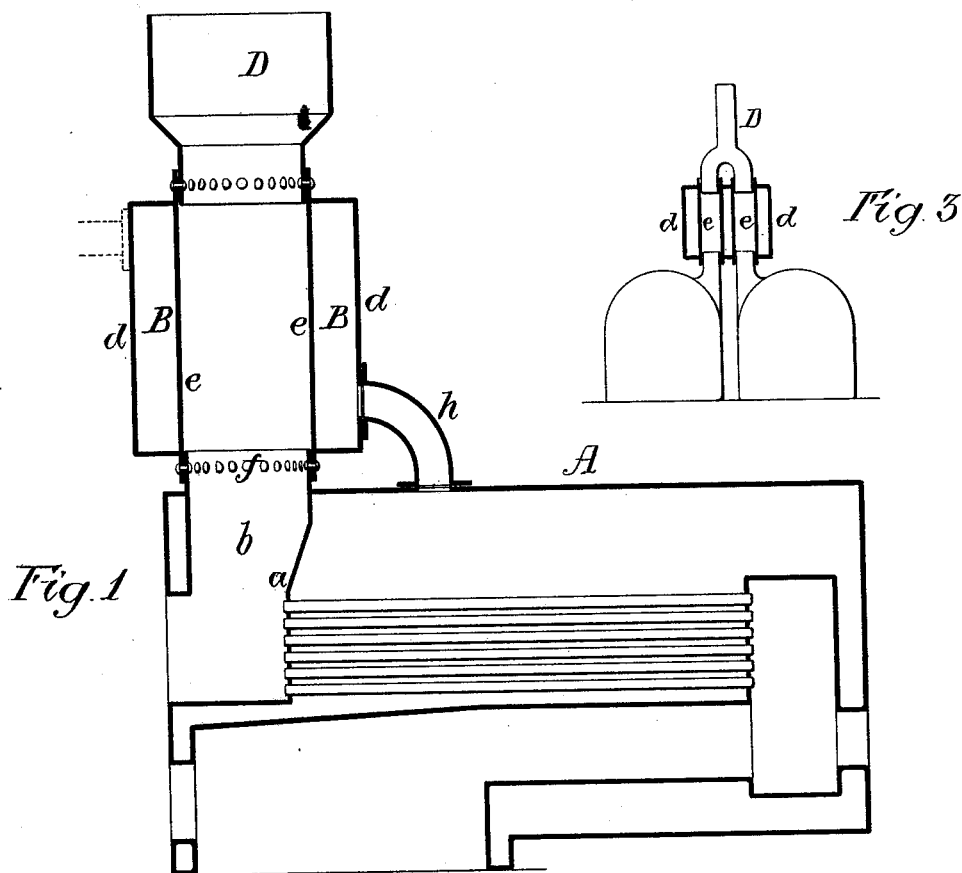
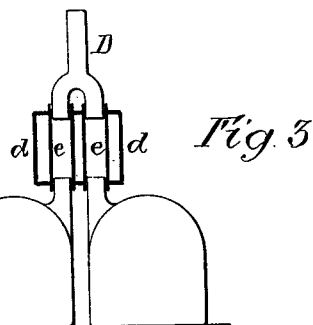
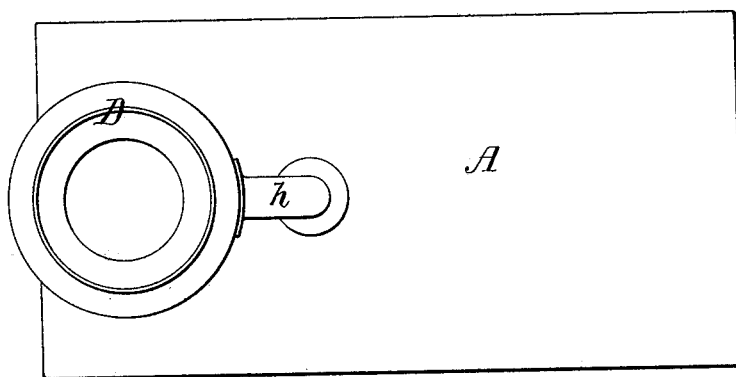


Fig. 2.



WITNESSES.

McDermott.
Henry Houston for

INVENTOR

Henry Schaubel
by his Attorneys
Houston & Son

UNITED STATES PATENT OFFICE.

HENRY SCHAUBEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF OF HIS RIGHT TO EDMUND L. LEVY, OF SAME PLACE.

IMPROVEMENT IN SUPERHEATERS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **220,670**, dated October 14, 1879; application filed
July 28, 1879.

To all whom it may concern:

Be it known that I, HENRY SCHAUBEL, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Superheaters for Steam-Boilers, of which the following is a specification.

My invention relates to that class of superheaters for steam-boilers in which a superheating-chamber is combined with a chimney; and my improved superheater consists of an outer casing combined with an inner casing, which forms a detachable section of the chimney, but which is permanently secured to the said outer casing, the main object of my invention being to avoid the expense incurred in securing the superheater directly to the shell of the boiler, as usual, a further object being to permit the ready removal of the superheater and the ready application of a new one.

In the accompanying drawings, Figure 1 is a vertical section of a steam-boiler, illustrating my invention; Fig. 2, a plan view of the same, and Fig. 3 a modification.

The boiler to which my invention is applied in the present instance is of the marine-flue and return-tubular type; but it will be understood that it may be used in connection with all kinds of steam-generators.

A represents the shell of the steam-boiler; *a*, the front tube-sheet; *b*, the smoke-chamber; B, the superheating-chamber; *d*, the outer casing of the same; *e*, the inner casing; D, the chimney, and *h* the pipe forming a communication between the steam-space of the boiler and the superheating-chamber, which has also an appropriate outlet-pipe, as shown by dotted lines.

The inner casing, *e*, of the superheater constitutes a section of the chimney, the lower portion of this casing being bolted or riveted

to a branch, *f*, on the shell of the boiler, and the upper end to the chimney proper, D.

Before the superheater is secured in its position it is a complete structure—that is to say, the inner and outer casings are permanently riveted together, so as to be in a steam-tight condition.

Several advantages are derived from this arrangement: First, the inconvenience and expense of securing the outer casing of the superheater to a continuous chimney in a steam-tight condition is obviated; second, the superheater can be readily detached from the chimney for repairs or to make way for a new one; and, third, the boiler is not weakened by cutting away the shell at the point where the superheater is attached.

In Fig. 3 I have shown a modification, in which the superheater is made in duplex form, and is combined with a pair of boilers having two outlet-flues, the ordinary breeches-pipe being used at the top of the superheater.

I do not desire to claim, broadly, the combination of a superheating-drum with a chimney which passes through the said drum; but I claim as my invention—

The combination of a superheater, consisting of an outer casing, *d*, and inner casing, *e*, permanently secured together, with a chimney, the continuity of which is interrupted for the reception of the superheater, the inner casing of the latter forming a part of the chimney, all as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY SCHAUBEL.

Witnesses:

ALEXANDER PATTERSON,
HARRY SMITH.