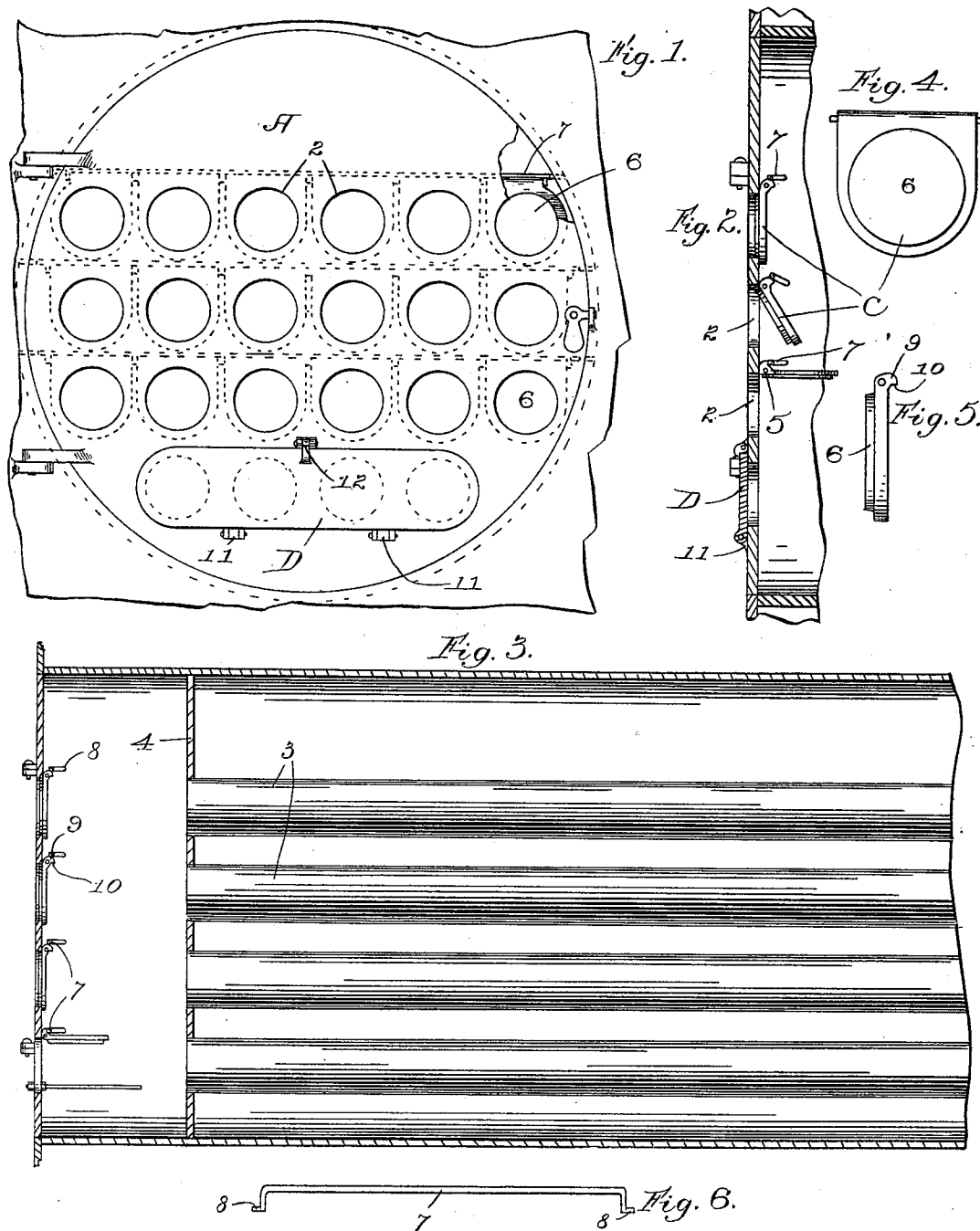


(No Model.)

V. KLINGLER.
STEAM BOILER FLUE FRONT.

No. 582,746.

Patented May 18, 1897.



Witnesses:

V. G. Bradley
H. Johnson

Inventor:

Victor Klingler.

per: *T. O. Merwin*
Attorney.

UNITED STATES PATENT OFFICE.

VICTOR KLINGLER, OF SLAYTON, MINNESOTA.

STEAM-BOILER-FLUE FRONT.

SPECIFICATION forming part of Letters Patent No. 582,746, dated May 18, 1897.

Application filed July 10, 1896. Serial No. 598,693. (No model.)

To all whom it may concern:

Be it known that I, VICTOR KLINGLER, a citizen of the United States, residing at Slayton, in the county of Murray, in the State of Minnesota, have invented a new and useful Improvement in Steam-Boiler-Flue Fronts; and I hereby declare the following to be a clear and exact description of my invention.

My invention relates to improvements in steam-boiler-flue fronts or doors, its object being to provide a construction of the same which will allow access to the boiler-tubes, so as to clean them from soot, without exposing the flue-sheet to the cold air. I attain this object by providing the flue front or door with openings registering with the boiler-tubes and in fitting these openings with covers or flaps, either with a separate cover for each opening or for a series or row of openings, so that access is permitted to any of the boiler-tubes without exposing the remainder of the flue-sheet. I also provide means for holding separate covers or flaps in open position, the flaps standing open being adapted to be automatically closed by the opening of another flap in the same row.

My invention further consists in the features of construction hereinafter particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a front view of a flue-door fitted with my invention. Fig. 2 is a vertical section of the same, showing part of the flaps for the flue-door openings closed and part open. Fig. 3 is a partial longitudinal vertical section of a boiler, showing the flue-door fitted with my invention. Figs. 4 and 5 are details of one of the flaps, and Fig. 6 is a detail of the locking-bar for holding the flaps in raised or open position.

In the drawings, A represents the flue-door of the boiler B, provided with openings 2, registering with the ends of the boiler-tubes 3, secured in the flue-sheet 4. These openings are provided with either of the styles of flaps shown in the drawings, (marked C and D, respectively.) The form C consists of a separate flap for each opening, the flap having hinged connection 5 with the inside of the flue-door above the opening and being formed with a raised portion 6, adapted to fit in the

opening when the flap is closed. These flaps are adapted to be held in open position by means of the yoke-shaped bar 7, extending across the flue-door and having hinge connection 8 in the opposite side walls of the boiler, as shown in Figs. 2 and 3. The flaps are each formed with a rounded cam 9 upon its top, upon which the bar 7 rests when the flaps are closed. When a flap is opened, the bar 7 is raised by the cam 9, the bar dropping into engagement with the shoulder 10, formed by the cam, when the flap is in full open position, thus holding the flap raised, as shown in Fig. 2. When another flap in the same row is lifted, its cam 9 raises the bar 7, disengaging it from the open flap and allowing the latter to drop into closed position, the bar then similarly locking the last flap in raised position. Thus each raised or open flap is automatically released and allowed to drop into closed position by the raising of another flap in the same row, or, if desired, a poker may be used to disengage the bar from a raised flap to allow the same to close, where it is not desired to open another flap to automatically release the bar.

In the other form the flap D has hinge connection 11 with the outside of the flue-door below a row of openings and is adapted to be locked in raised or closed position to cover said openings by means of a suitable catch 12. In this form the flap preferably covers an entire row of openings.

I claim—

1. In combination, the boiler-flue front or door formed with series of openings registering with the several flues, the series of flaps or covers for the openings in said flue-door, and the locking device for securing a flap or cover in open or raised position, said device being actuated by the opening of another flap of the series to automatically close said raised flap.

2. In a boiler of the class described, the combination with its flue front or door, having series of openings severally registering with the flue-openings, of the series of hinged flaps for closing the openings in said door, the locking means for each series of flaps adapted to automatically secure said flaps in raised or open position, said locking means

being actuated by the opening of any flap to automatically release any flap in the same series standing in open position.

3. In a boiler of the class described, the
5 combination with its flue-door provided with series of openings registering with the flues, of the series of hinged flaps adapted severally to close the openings in said flue-door, the
10 locking-bar for each series of flaps, and the catch upon each flap adapted to engage said bar when raised, and to be held by it in open position, said bar being automatically tripped
15 so as to release said flap by the catch of another flap in the same series when opened.

4. In a boiler of the class described, the combination with its front having series of

openings registering with the flues, of the series of hinged flaps adapted severally to close said front openings, the yoke-shaped bar pivoted transversely adjacent each series of
20 flaps, and the shouldered cam upon each flap adapted to engage and lift said bar in the opening movement of the flap, and be engaged thereby to hold said flap when full open, said bar being tripped by the opening
25 of a second flap of the series, so as to release the one previously opened.

VICTOR KLINGLER.

Witnesses:

MARK N. TISDALE,
T. H. THOMPSON.