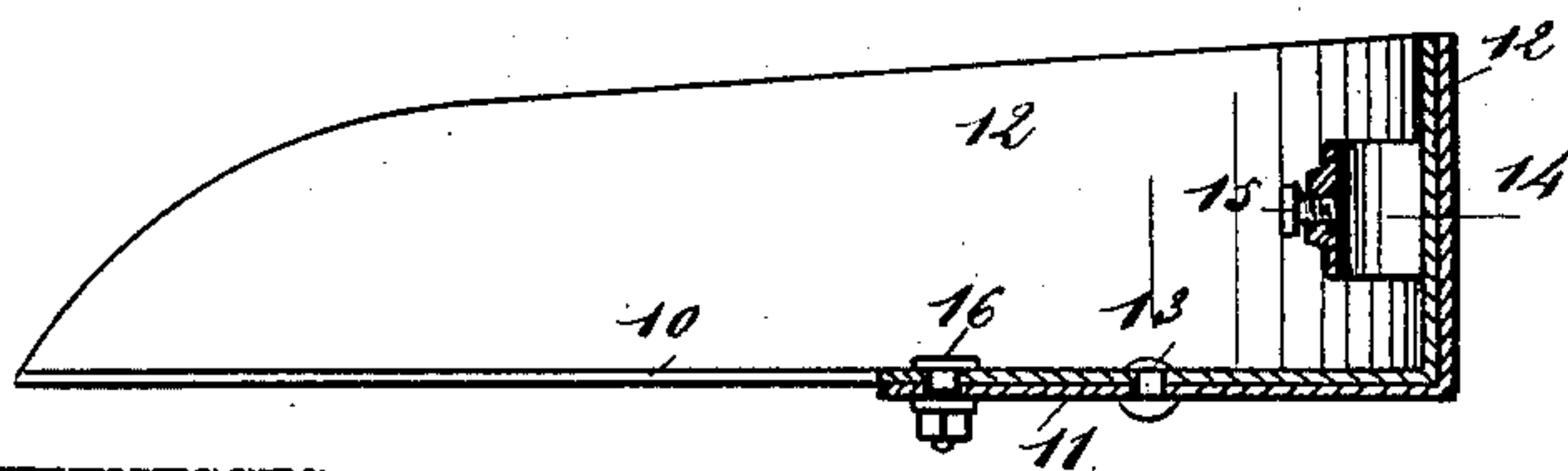
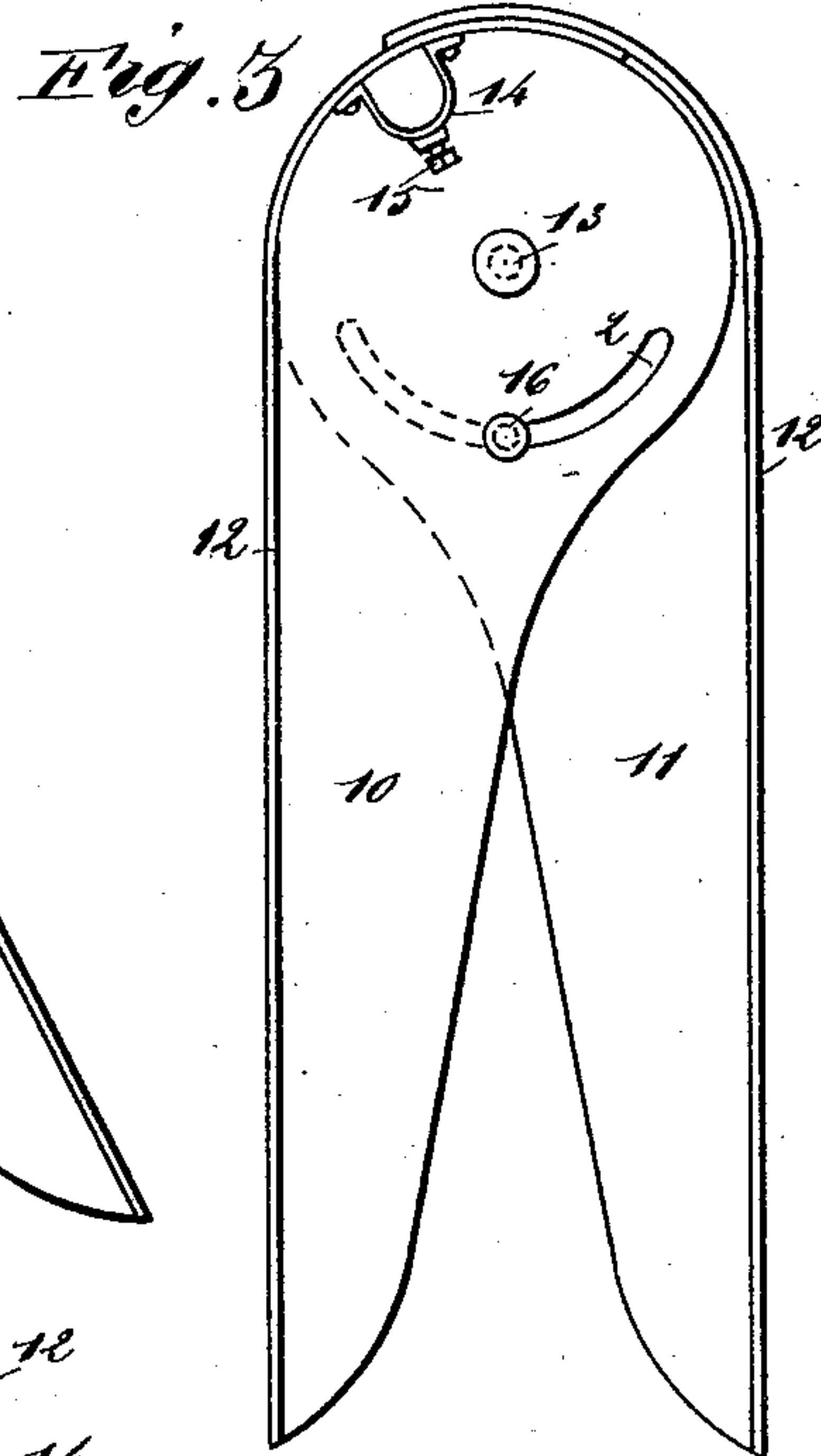
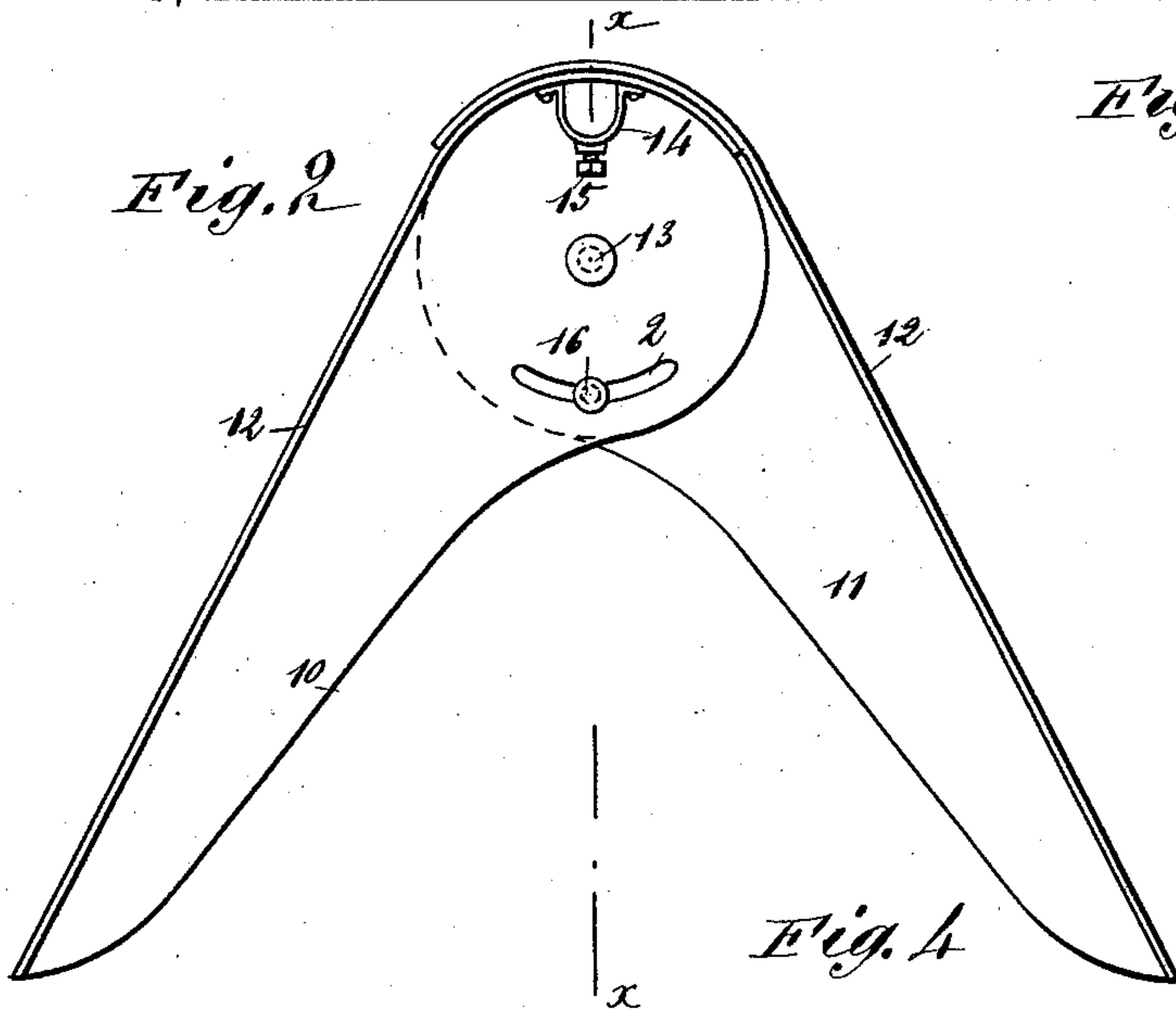
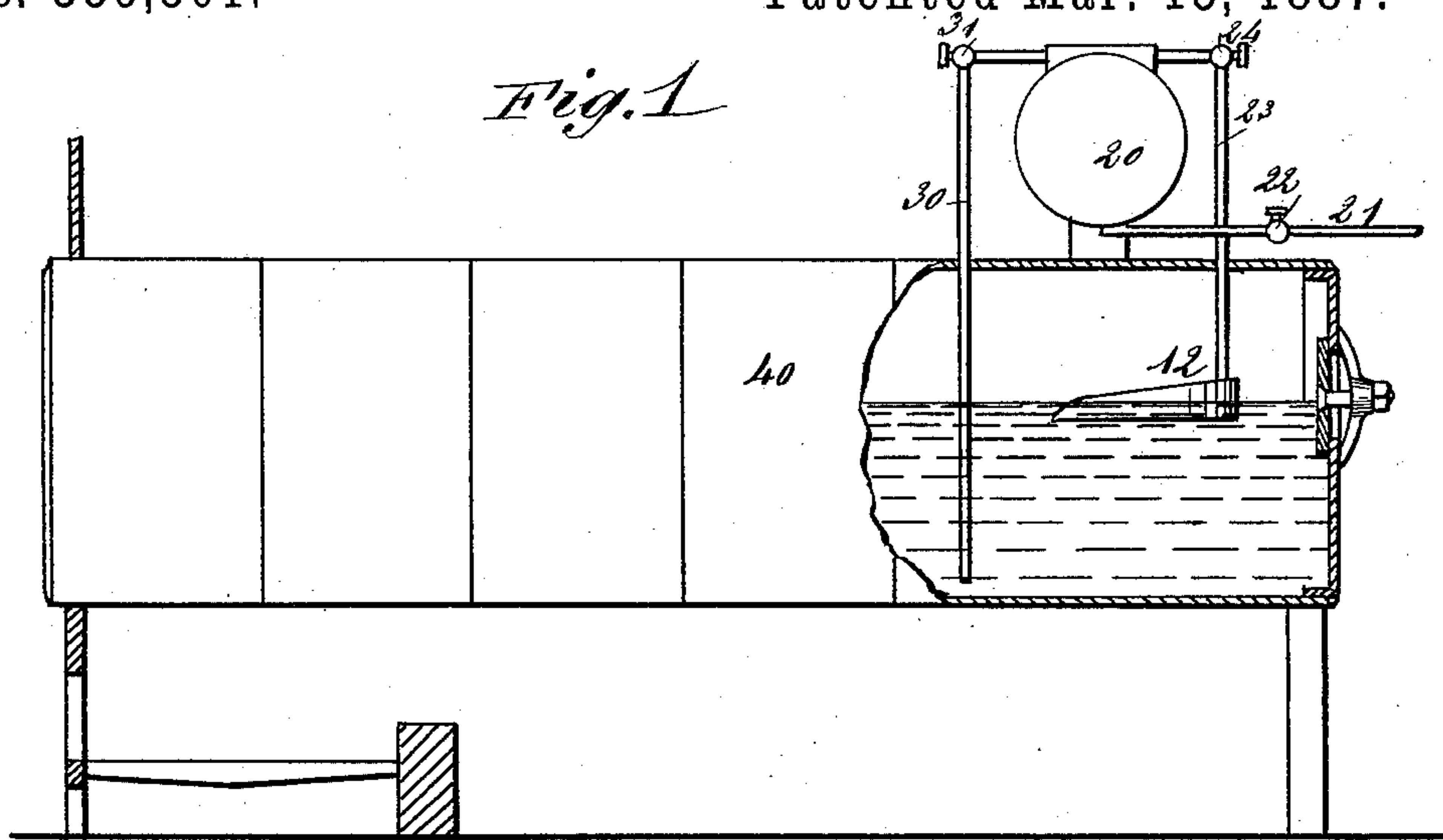


(No Model.)

A. DE CAMP.
BOILER CLEANER.

No. 359,501.

Patented Mar. 15, 1887.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALBERT DE CAMP, OF CHATTANOOGA, TENNESSEE.

BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 359,501, dated March 15, 1887.

Application filed October 19, 1886. Serial No. 216,653. (No model.)

To all whom it may concern:

Be it known that I, ALBERT DE CAMP, of Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and Improved Boiler-Cleaner, of which the following is a full, clear, and exact description.

The object of my invention is to provide a form of skimmer applicable for use in the removing of impurities from the water of steam-boilers, thus preventing the formation of scale, incrustations, &c., the invention consisting, essentially, in the novel form of skimmer proper, as will be hereinafter more fully described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side view of a boiler provided with my improved form of skimmer, a portion of the boiler being broken away in order to disclose the location and general arrangement of the skimmer. Fig. 2 is an enlarged plan view of the skimmer proper, the parts being represented in the position they assume when expanded for use. Fig. 3 is a view of the skimmer illustrated in Fig. 2, the parts in this case, however, being shown in the position they assume when folded, in order that they may be introduced through the man-hole of the boiler. Fig. 4 is a sectional view taken on line *xx* of Fig. 2.

My improved form of skimmer consists, essentially, of two leaves, 10 and 11, formed with rounded ends and partially surrounded by upwardly-extending flanges 12, the flange 12 of each section extending partially around the rounded end of the leaf, as best shown in Figs. 2 and 3. The sections 10 and 11 are united by a bolt or rivet, 13, and each section is formed with a circular slot, as 2, that is concentric to the axis of the pivot 13. A clamping-bolt, 16, is passed through the slots 2, and by tightening the nut of this bolt the two leaves may be clamped together in any desired position. To the flange 12 of the upper section, 10, there is secured a strap, 14, having a set-screw, 15.

The skimmer above described is employed in connection with a blow-off attachment—such as the one illustrated in the drawings—wherein 20 is a settling-drum having a blow-off pipe, 21, that is provided with a valve, 22. To this drum 20 there is secured a pipe, 23, provided with a valve, 24, the pipe 23 passing downward and into the boiler 40, as clearly shown in Fig. 1. A water-supply pipe, 30, having a valve, 31, leads from a point beneath the water-level of the boiler to the settling-drum 20.

The skimmer described is inserted through the man-hole in the boiler and secured to the lower end of the pipe 23, said pipe being encircled by the strap 14, the set screw 15 being turned to bind against the pipe and lock the parts together. After the skimmer is secured, as described, the two sections 10 and 11 are expanded until their extending ends strike against the walls of the boiler, thus reaching across the water-level at the rear end of the boiler.

When the water in the boiler 40 is boiling, there is a current created from the forward end toward the rear end of the boiler, and by this current the impurities contained in or carried by the water will be directed toward the skimmer, to be intercepted by the flanges 12, and as these impurities are so intercepted they will be carried upward by a current passing through the tube or pipe 23 and into the drum 20, there to settle and to be blown out, as desired, through the discharge-pipe 21. The clear water at the top of the settlings within the drum 20 passes back into the boiler through the tube 30, as will be readily understood.

I am aware that the arrangement of a settling-drum and its connections is old and well known; but I am not aware that a skimmer proper has heretofore been made up of pivotally-united sections which may be adjusted to a width to meet the requirements of most any boiler in connection with which it is desired to employ the skimmer.

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

1. A skimmer made up of pivotally-united

sections adapted to be entered through a man-hole, substantially as described.

2. The combination, in a skimmer, of sections 10 and 11, having flanges 12, a rivet, 13, and a bolt, 16, substantially as described.

3. In a skimmer, the combination, with a section, 10, provided with a flange, 12, and formed with a slot, 2, of a section, 11, also pro-

vided with a flange, 12, and having a slot, 2, a pivot, bolt, or rivet, 13, a clamping-bolt, 16, and a strap, 14, that is provided with a set-screw, 15, substantially as described.

ALBERT DE CAMP.

Witnesses:

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