

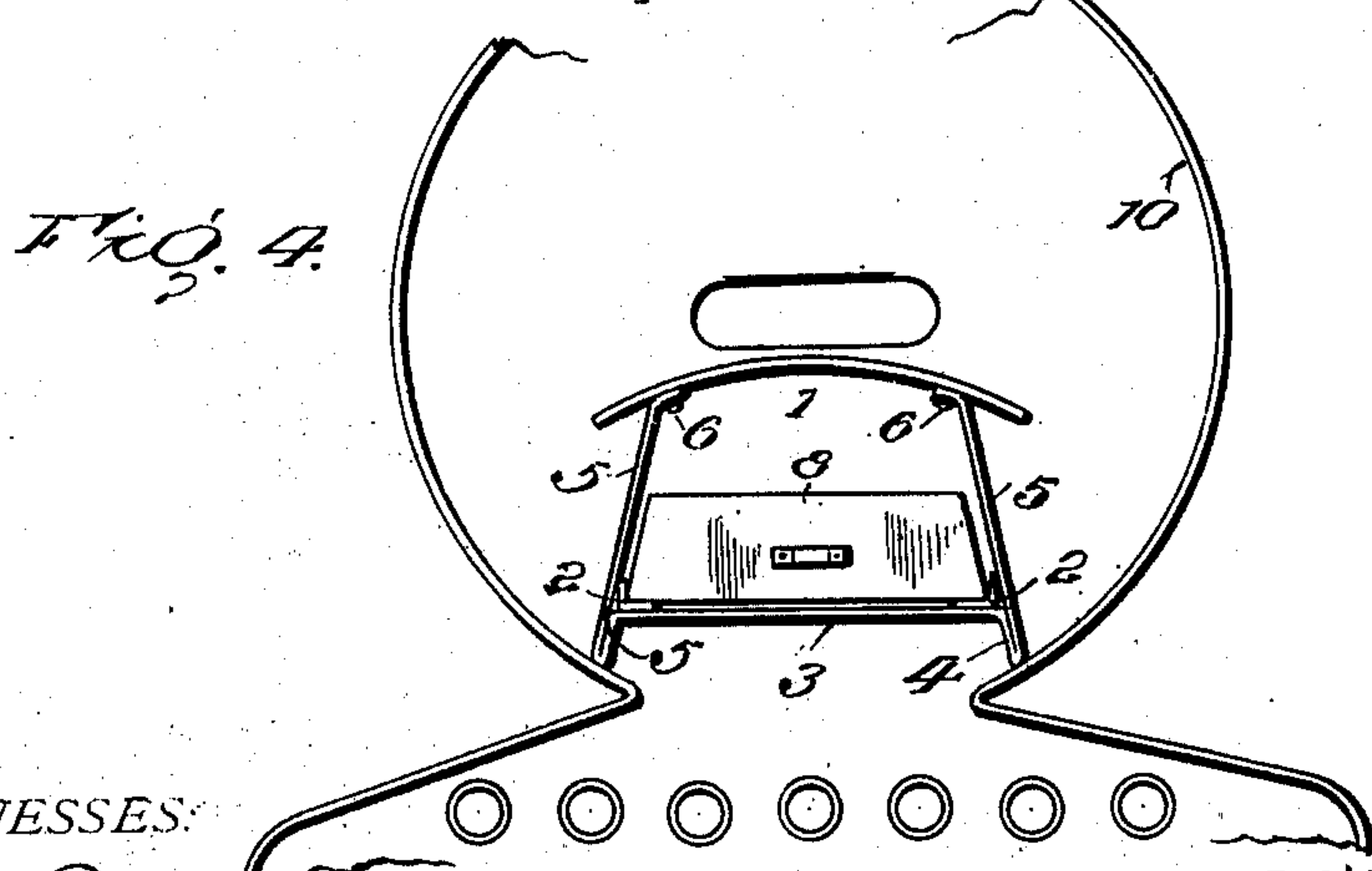
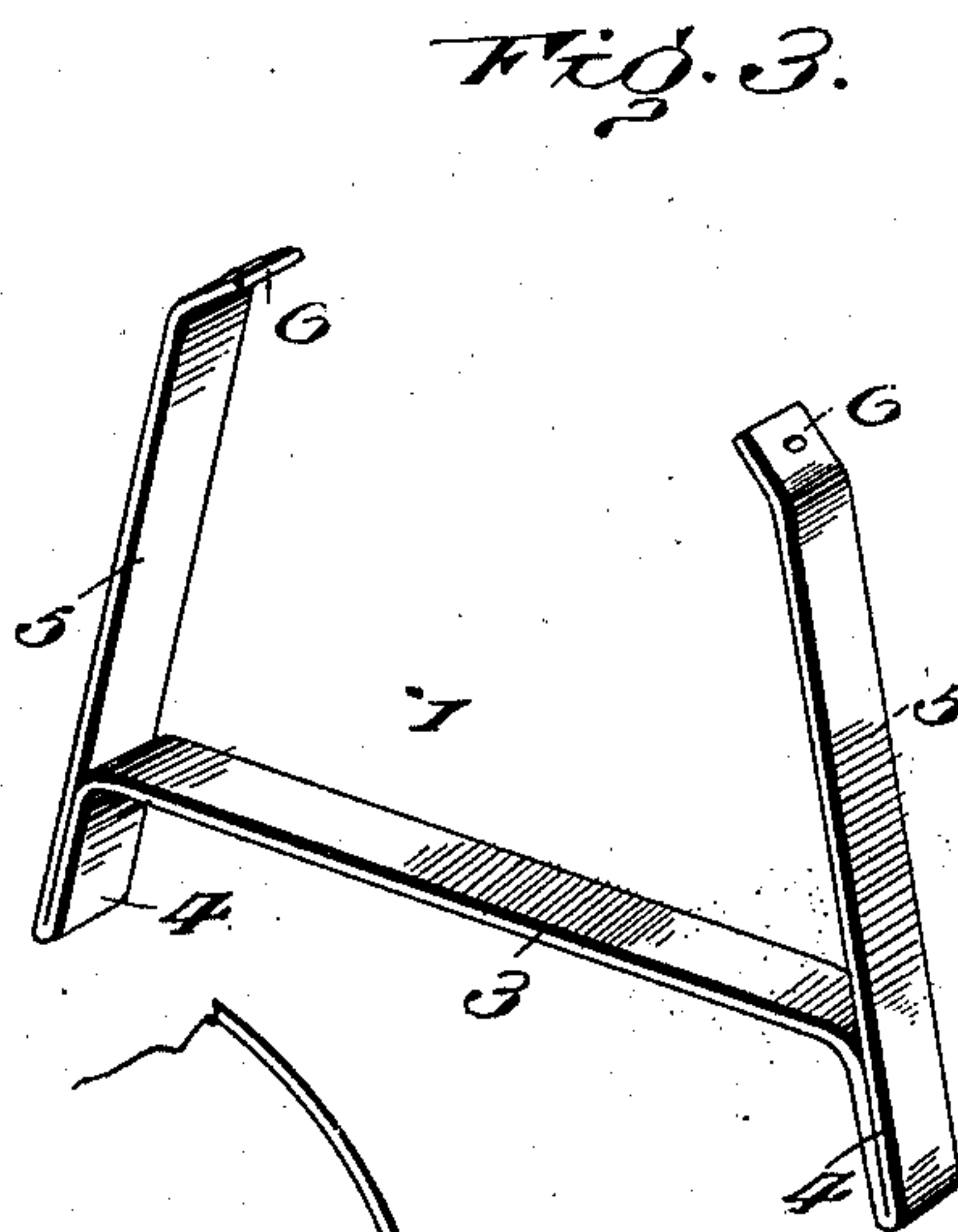
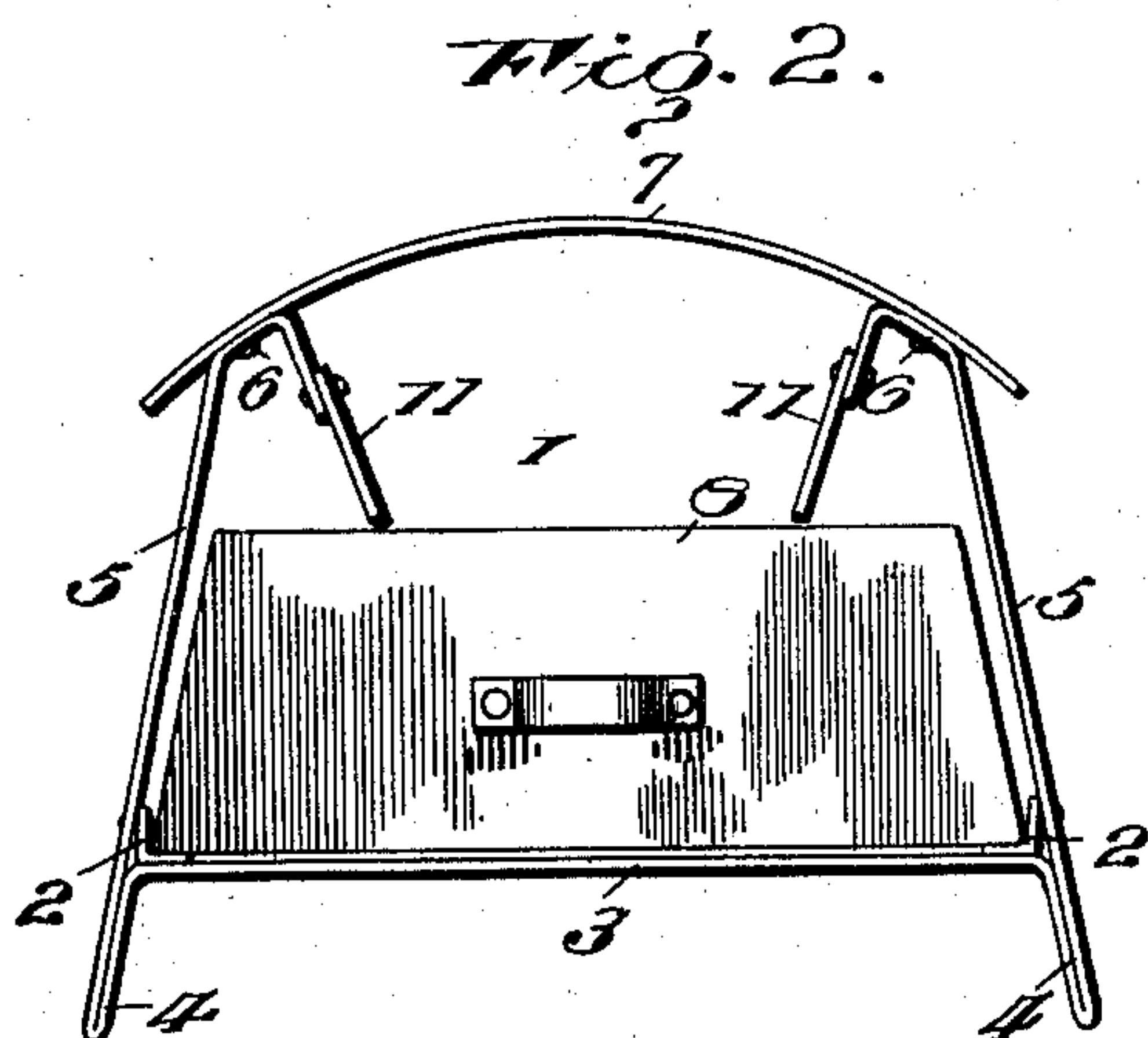
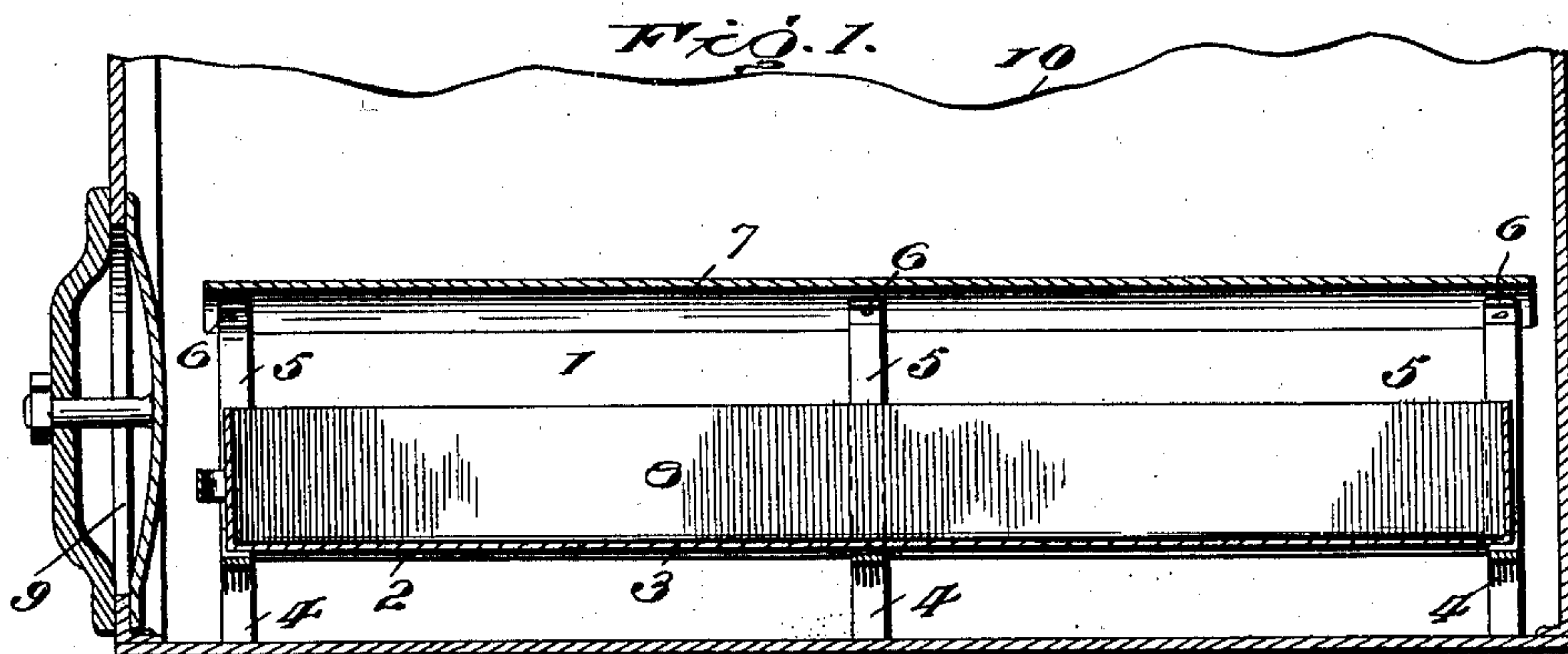
No. 757,382.

PATENTED APR. 12, 1904.

N. W. & S. YANTIS.
PURIFIER FOR STEAM BOILERS.

APPLICATION FILED JUNE 30, 1903.

NO MODEL.



WITNESSES:

INVENTORS

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UNITED STATES PATENT OFFICE.

NOAH W. YANTIS AND SOLOMON YANTIS, OF ASSUMPTION, ILLINOIS.

PURIFIER FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 757,382, dated April 12, 1904.

Application filed June 30, 1903. Serial No. 163,778. (No model.)

To all whom it may concern:

Be it known that we, NOAH W. YANTIS and SOLOMON YANTIS, citizens of the United States, residing at Assumption, in the county of Christian and State of Illinois, have invented certain new and useful Improvements in Purifiers for Steam-Boilers, of which the following is a specification.

This invention provides novel mechanical means for removing mud and other impurities from the water of steam-generators, thereby preventing the formation of scale and the foaming and noises incident to generating steam from water laden with impurities.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a central longitudinal section of the invention, showing its application to a steam-boiler. Fig. 2 is a front view of the purifier. Fig. 3 is a detail perspective view of a support. Fig. 4 is a detail view showing the invention applied to the upper portion of a tubular steam-boiler.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The frame comprises a series of supports 1 and longitudinal rests 2, the latter consisting of angle-irons having their wings secured to vertical and horizontal portions of the supports. Each support consists of a horizontal bar 3, legs 4, and uprights 5, the latter being upwardly converged and having their upper ends inwardly bent, as shown at 6, to conform to the curvature of the cover 7, to which they are firmly attached. The several parts of each of the supports are formed of a single bar or strip bent into the form substantially as shown.

The legs 4 are formed by doubling portions of the bar or strip, and they may extend in

line with the uprights 5 or may be bent laterally, as shown in Fig. 4, according to the specific application of the frame. The angle-bars 2 have one wing secured to the uprights 5 and the other wing secured to the horizontal bar 3 and form rests for the pan 8, which is adapted to slide thereon. By having the angle-bars secured to the parts 3 and 5 in the manner stated the folded portions, comprising the legs 4, are prevented from separating, as will be readily comprehended. The angle-bars 2 in connection with the cover 7 unite the series of supports 1 and result in forming a rigid and substantial structure.

The pan 8 is slidably mounted upon the rests 2, and its longitudinal walls are upwardly converged to conform approximately to the inclination of the uprights 5. The pan may be provided at each or both ends with a handle for convenience of operation. By having the side walls of the pan upwardly converged the bottom portion of the pan is of larger area than the upper, this being of advantage in collection and accumulation of the sediment and preventing disturbance thereof by currents incident to boiling of the water when generating steam. The pan is removable through the manhole 9 of the boiler 10.

The cover 7 is of greater transverse extent than the upper portion of the pan 8, and its longitudinal edge portions project beyond the sides of the pan, so as to catch upward currents of water and direct the same under the cover, whereby separation and precipitation of mud and other impurities are facilitated.

In the event of applying the invention to a boiler or steam-generator already incrustated a compound such as generally supplied to the boiler is added thereto for loosening the scale, the detached particles of which collect in the pan 8, together with other impurities. The pan is removed from the boiler at intervals in order to dump the accumulations and when freed from the impurities and sediment is replaced. The legs 4 serve to space the pan a distance from the bottom of the boiler. Hence the water contained in the pan is still, and the matter accumulating in the pan is not disturbed, because of the quiet state of the water therein.

Plates 11 are arranged above the pan 8 and incline inwardly and downwardly toward their lower edges and are secured near their upper edges to bent portions of the uprights 5.

5 These plates constitute fenders and facilitate the precipitation of impurities contained in the water and prevent agitation thereof by boiling.

Having thus described the invention, what
10 is claimed as new is—

1. In a purifier of the character described, a frame provided with a cover and a rest, and a pan slidably mounted upon the rest and movable beneath the cover, substantially as
15 set forth.

2. In a water-purifier of the character described, the combination of a frame having upwardly-converged supports, a cover secured to the upper ends of the supports, and a pan
20 slidable beneath the cover and having its sides upwardly converged, substantially as described.

3. In a purifier of the character described, a frame comprising a horizontal portion, up-
25 rights, and angle-bars forming rests, said angle-bars having their wings secured to both said uprights and the horizontal portion, and a pan slidably mounted upon said supports, substantially as specified.

30 4. In a boiler-purifier, a frame comprising horizontal and upright portions, angle-bars having their wings secured to the said horizontal and upright portions, a cover secured to the upper ends of the uprights, and a pan
35 slidable upon the angle-bars, substantially as set forth.

5. In a purifier of the character described, the combination of a series of supports, each comprising a horizontal portion, legs, and up-

wardly-converged uprights, a transversely- 40 curved cover secured to the upper ends of the uprights, angle-bars having their wings secured both to the horizontal and upright portions of the supports and constituting rests, and a pan slidable upon the horizontal wings 45 of the angle-bars and having its sides upwardly converged, substantially as set forth.

6. In combination, a settling-pan, a deflector arranged thereabove and longitudinal fen- 50 ders placed between said deflector and settling-pan and downwardly converged toward their lower edges, substantially as set forth.

7. A boiler-cleaner comprising a receptacle, means for supporting the receptacle in the boiler, and a cover spaced from said recepta- 55 cle and projecting beyond the sides of the same.

8. A boiler-cleaner comprising an elongated trough-shaped receptacle, means for support- 60 ing the same within the boiler, and a cover spaced from said receptacle and having its side portions sloped outwardly and downwardly from a medial line and projected beyond the sides of the said receptacle, substantially as
65 specified.

9. A boiler-cleaner comprising a receptacle, means for supporting the same in the boiler, and a detachable cover spaced from said re- 70 ceptacle and projecting beyond the sides of the same.

In testimony whereof we affix our signatures in presence of two witnesses.

NOAH W. YANTIS. [L. s.]
SOLOMON YANTIS. [L. s.]

Witnesses:

CARLETON F. HODGE,
J. SIM HODGE.