

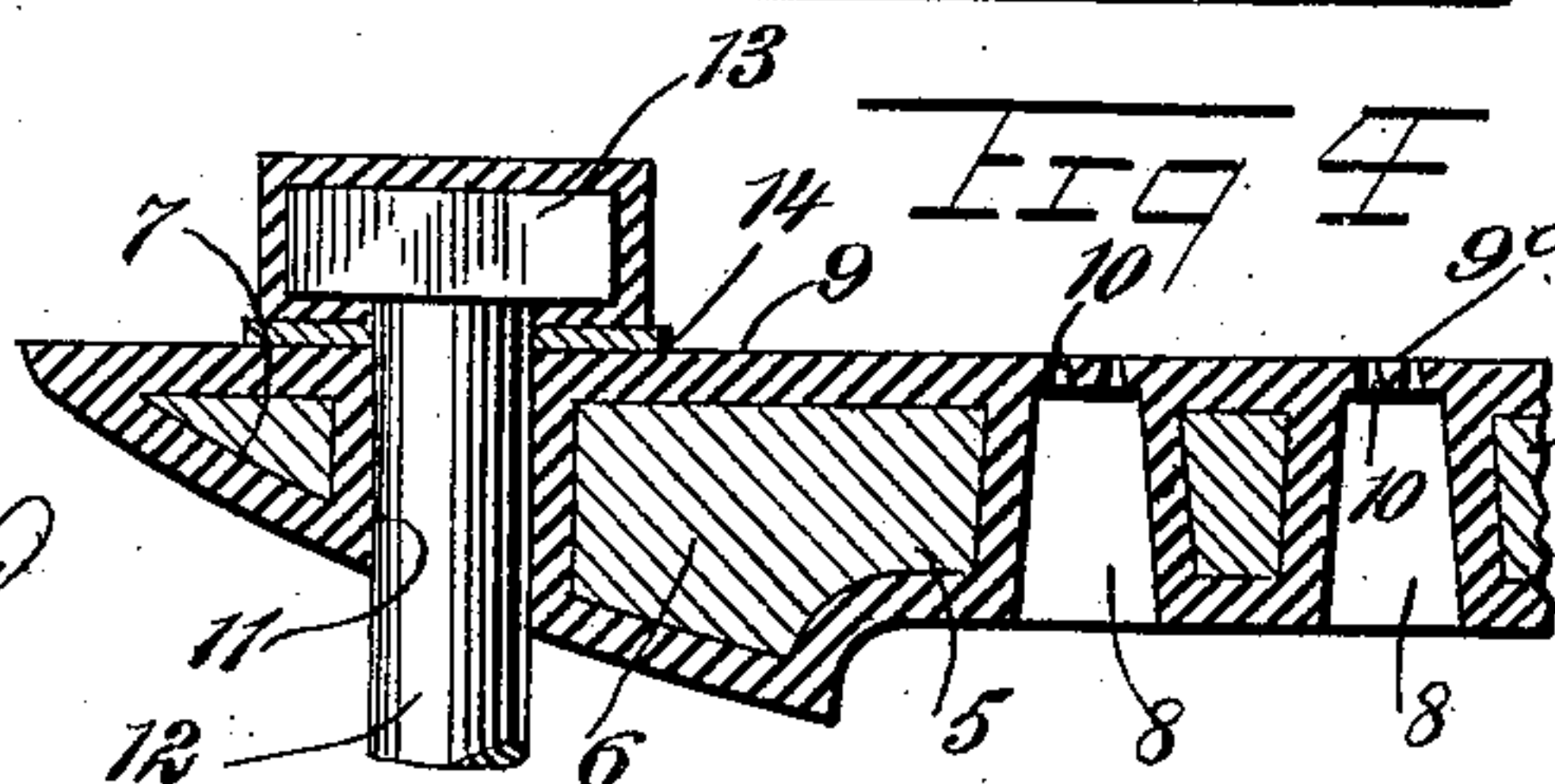
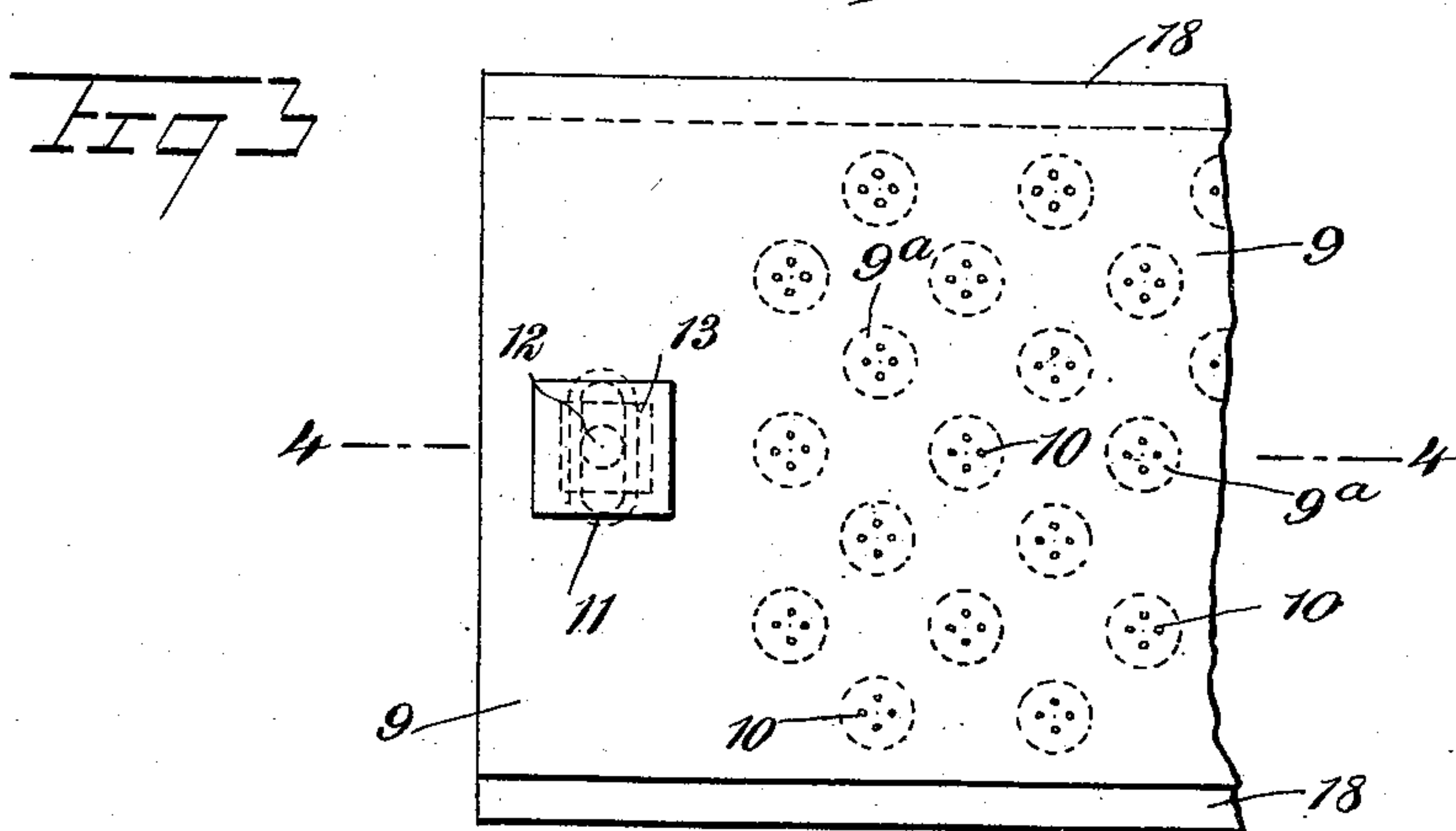
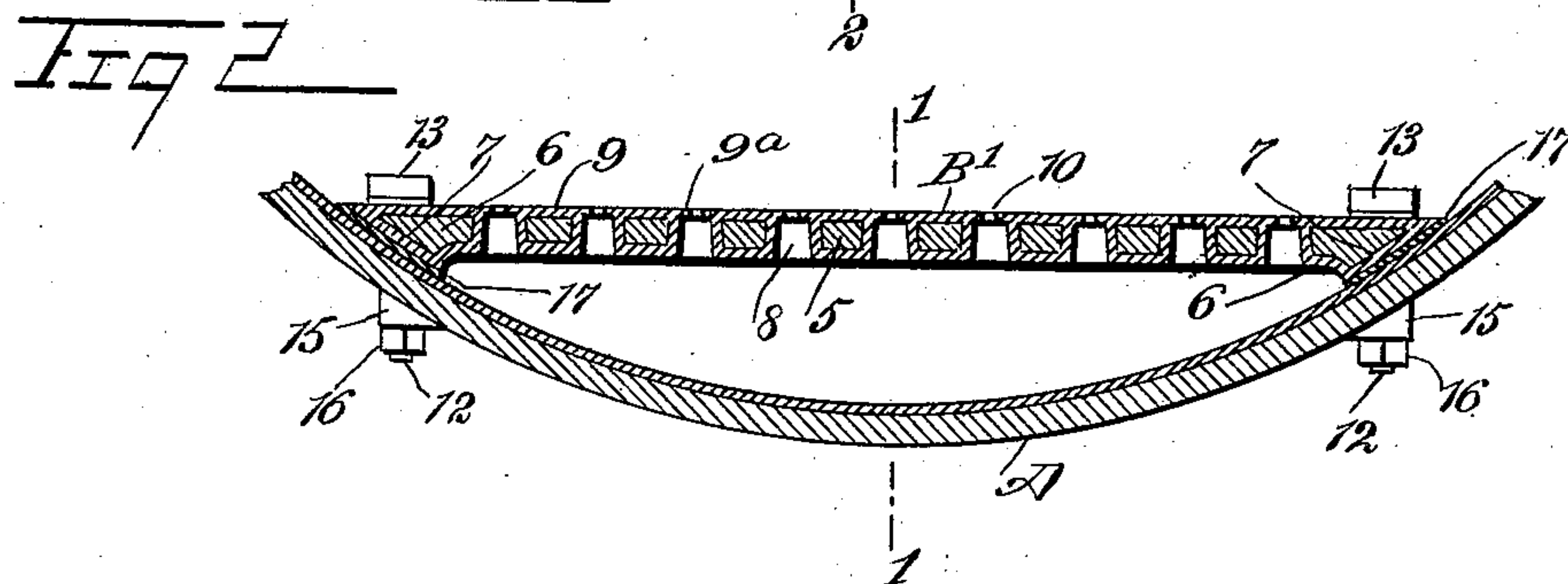
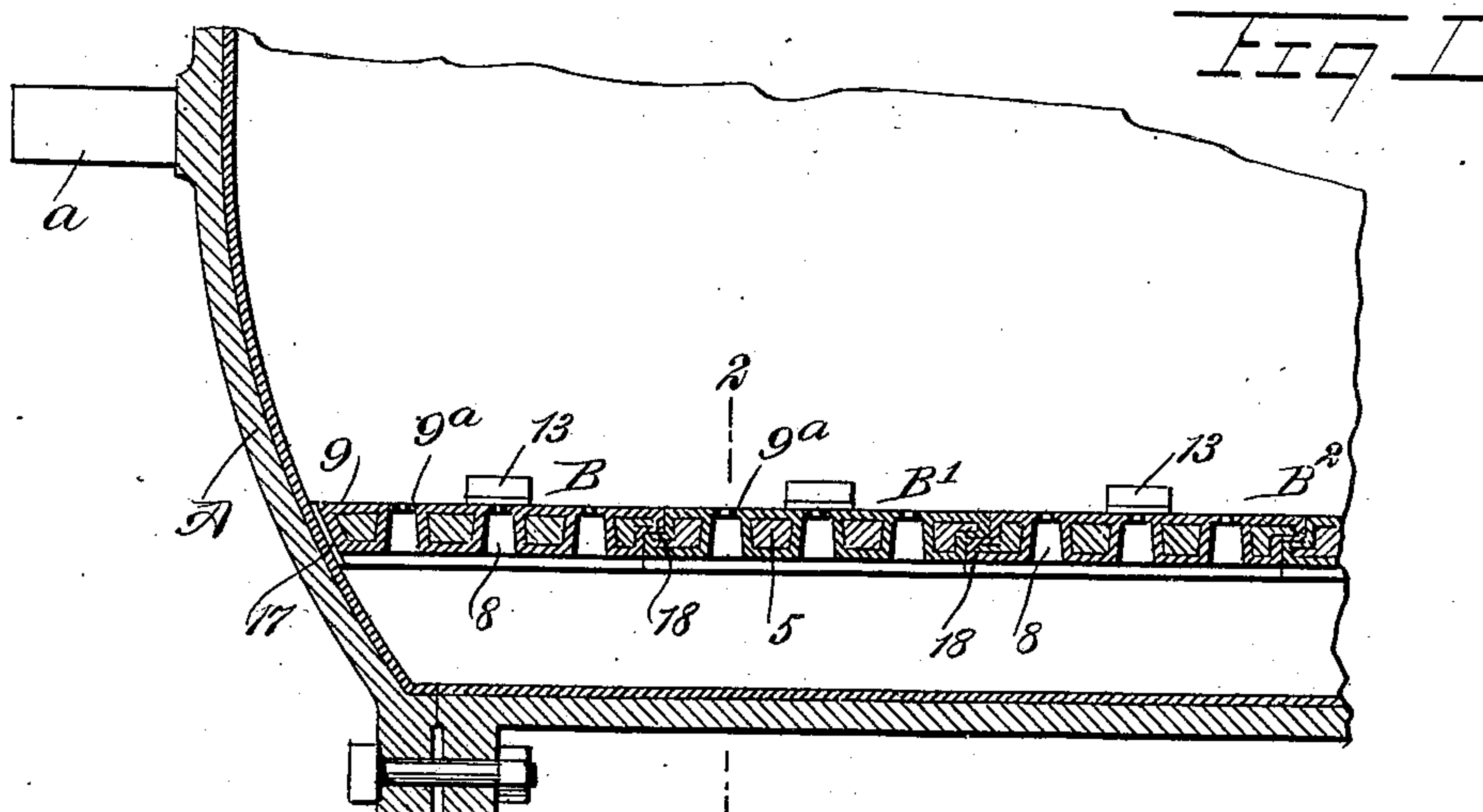
No. 712,963.

Patented Nov. 4, 1902.

J. J. PRINDLE.
BARREL FILTER.

(Application filed July 15, 1902.)

(No Model.)



WITNESSES:

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BARREL-FILTER.

SPECIFICATION forming part of Letters Patent No. 712,963, dated November 4, 1902.

Application filed July 15, 1902. Serial No. 115,609. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. PRINDLE, a citizen of the United States, and a resident of Colorado City, in the county of El Paso and State of Colorado, have invented new and useful Improvements in Barrel-Filters, of which the following is a full, clear, and exact description.

My invention relates to improvements in barrel-filters especially designed for the extraction of precious metals from ore by the "chlorination process;" and the primary object that I have in view is the provision of a simple, durable, and cheap construction which effectually retains sand or pulverized ore in the cask while the valuable solution is being forced to the bottom of the same, so as to pass out through an outlet.

Further objects of the invention are to provide a metallic filter-platform of light construction, which can be easily coated with a film or layer of lead in all its parts, which reduces the superficial area of the platform that is required to stand the pressure of water pumped into the barrel after or during the drainage of the liquor therefrom, to make the platform fit snugly to the inner surface of the barrel, and to provide means for holding the platform securely in place while allowing a limited adjustment of its parts relative to one another to insure easy fitting thereof.

With these ends in view the invention consists in the novel combination, construction, and arrangement of parts, which will be hereinafter fully described and claimed.

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

Figure 1 is a sectional elevation taken longitudinally through a portion of a barrel or tank embodying my improved filter, the plane of the section being indicated by the dotted line 1 1 of Fig. 2. Fig. 2 is a transverse section through a part of the barrel in the plane of the dotted line 2 2 of Fig. 1. Fig. 3 is a plan view, on an enlarged scale, of a part of one of the flat members adapted to form a filtering-platform; and Fig. 4 is a transverse sectional view in the plane of the dotted line 4 4 of Fig. 3.

A designates a part of a barrel or tank

having a trunnion α and similar in all substantial respects to devices which are ordinary in the art of extracting precious metals from ore by the chlorination process.

The improved filter contemplated by the present invention is flat and arranged transversely across the lower part of the barrel or tank, as distinguished from a concavo-convex filter arranged in a transversely-curved position within the tank, so as to form a crescent-shaped space at the bottom thereof, filters of this type being well known to those skilled in the art.

The improved filter consists of a number of flat members $B B' B^2$, disposed in the same horizontal plane and having overlapping relation, as shown more clearly by Fig. 1, any suitable number of these members being employed.

In the manufacture of the filter-platform I employ a series of iron plates, (indicated more clearly at 5 in Fig. 4.) Each plate is cast in a single piece of metal, and it is of rectangular form except at the end portions thereof, said end portions being thickened transversely, as indicated at 6, and provided with a curved under face 7, which forms a heel adapted to fit snugly to the inner curved surface of the barrel or tank. The metallic plate is provided with a plurality of holes 8, which extend in series longitudinally and transversely across the plate, as shown by Figs. 1 to 3, inclusive, each hole being of the tapered form. (Represented more clearly by Fig. 4.) The perforated plate is coated by depositing a film or layer of lead throughout the entire area thereof, and this leaden film 9 covers the top and bottom faces of the plate, the curved heels 7 thereof, and the walls of the conical perforations 8. The leaden coating or film extends solidly across the smaller ends of the conical openings 8 and on the top face of the plate, so as to produce the integral heads 9^a at the upper ends of the conical passages; but after the leaden coating shall have been properly deposited on the metallic plate these heads 9^a are punched in order to produce a plurality of small filter openings or passages 10. (Shown more clearly by Figs. 3 and 4.) The lead film or coating is applied to the plate or platform members by molding, casting, or burning it thereon. The iron plate 5 is fur-

thermore provided in each heel portion thereof with transverse slots 11, which are coated by the leaden film 9, and through these slots are adapted to pass the supporting-bolts 12, the same having lead-covered heads 13 and adapted to bear on washers or gaskets 14, which are interposed between the coated upper face 9 of the section forming a part of the platform. These bolts 12 pass through slots in the end portions of each member B B' B² of the platform, so that the members of the latter are fastened or supported individually within the lower part of the barrel or tank, and the slots 11 allow the limited lateral adjustment of the members with relation to the bolts and the barrel in order that the workman may easily fit the platform members within the tank. The bolts 12 pass through suitable openings provided in the walls of the tank, and around the protruding parts of the bolts are placed the bearing-washers 15, against which the nuts 16 are adapted to bear, as shown by Fig. 2. In fitting the members of the platform to the interior face of the barrel or tank the curved lead-covered heels 7 of the members are brought in opposing relation to the curved interior surface of said barrel, and between these curved heels of the members and the inner surface of the barrel is interposed a gasket or packing 17, which may be of rubber or any other suitable packing material designed to secure tight joints between the barrel and the filter-platform, thus minimizing leakage of the solution through the bolt passages or holes. In my improved construction the end portions of the sections or members comprising the platform are provided with integral enlargements, which are formed on their lower sides with prolonged curved faces, thereby producing the supporting-heels, which conform to the curvature of the barrel in which the filtering-platform is intended to be used. These curved heels are especially provided for the purpose of supporting the filtering-platform, which has no other support in the barrel except the bolts, and the curved faces of the enlarged heels fit the inner surface of the barrel, so as to reduce the liability of wearing, pinching, or cutting the lead film on the inner surface of the barrel and the lead film which covers the plate or section of the platform. The members B B' B² at their meeting edges are rabbeted, as shown by Fig. 1, and the flanges 18 thereby produced in said meeting edges are adapted to overlap to an extent sufficient to form close joints between said members. The intermediate members B' B² of the platform are provided at their end portions with the curved heels 7; but the members B at the end portions of the platform should be curved on their side edges, so as to fit snugly to the walls of the tank.

One of the important features of my invention consists in making the filter-platform of flat sections, which is advantageous because the leaden film can be deposited more easily

upon the flat perforated plates than on curved plates, the sections are lighter in weight, and the flat sections are of less superficial area than curved plates, so as to better sustain the pressure of the water, which is pumped under forty-five pounds per square inch into the barrel or tank on the discharge of the valve-bearing solution from the apparatus. The passages in the metallic filter-platform are partially closed by heads formed by the leaden film, said heads being provided with the drainage-holes 10, which are always open for the passage of the solution. The water-pressure on the flat platform is equalized, so as to be uniform throughout the surface of the platform, whereas in concavo-convex platforms the water-pressure goes through the filter at certain points before the solution passes through other parts of the filter, thus mixing the water and the solution and reducing the strength of the solution per ton of ore. The overlapping of the members forming the platform present a substantially continuous surface, which effectually excludes the passage of sand or pulverized ore through the platform, particularly at the joints between the members.

I desire to call attention to the fact that each member is a complete section of a filter and platform and that by removing the bolts at the ends of each section the latter may be removed and replaced by a new one without removing any other part of the filter.

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

1. In a chlorination barrel-filter, a platform consisting of flat, coated members united by overlapping joints at their contiguous edges.

2. In a chlorination barrel-filter, a metallic-coated platform having conical passages, the upper ends of said passages being covered by heads which are integral with the coating and are provided with drainage-holes which open into the passages.

3. In a chlorination barrel-filter, a platform consisting of flat, perforated members arranged in the same plane and having their contiguous edges disposed in overlapping relation.

4. In a chlorination barrel-filter, a platform comprising a series of perforated members or sections having the end portions thereof thickened or enlarged, said enlarged portions provided on their lower sides with prolonged curved faces forming supporting-heels which conform to the curvature of the barrel in which the filter-platform is adapted to be used, and bolts passing through said curved heels and cooperating therewith in holding the platform in place.

5. In a chlorination barrel-filter, a series of flat, perforated, coated members disposed in lapping relation, and bolts which individually fasten the members of said platform to a barrel or tank.

6. In a chlorination barrel-filter, a sectional

platform consisting of flat members disposed in lapping relation and provided at their ends with slots, and bolts passing through said slots and adapted to fasten the platform
5 firmly to a barrel.

7. In a chlorination barrel-filter, a platform consisting of metallic perforated plates having curved heels and slots opening through said heels, a leaden film covering the entire
10 surface of the plates and forming heads which are provided with perforations that open into

the openings of the flat plate, and bolts fitted in the slots of the coated plates and adapted to individually fasten the members to a barrel.

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

JOHN J. PRINDLE.

Witnesses:

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O. L. TRIBBLE.