H. R. BOISSIER.

ELECTROPLATING DEVICE.

APPLICATION FILED JUNE 1, 1914.

1,154,604.

Patented Sept. 28, 1915.

3 SHEETS—SHEET 1.

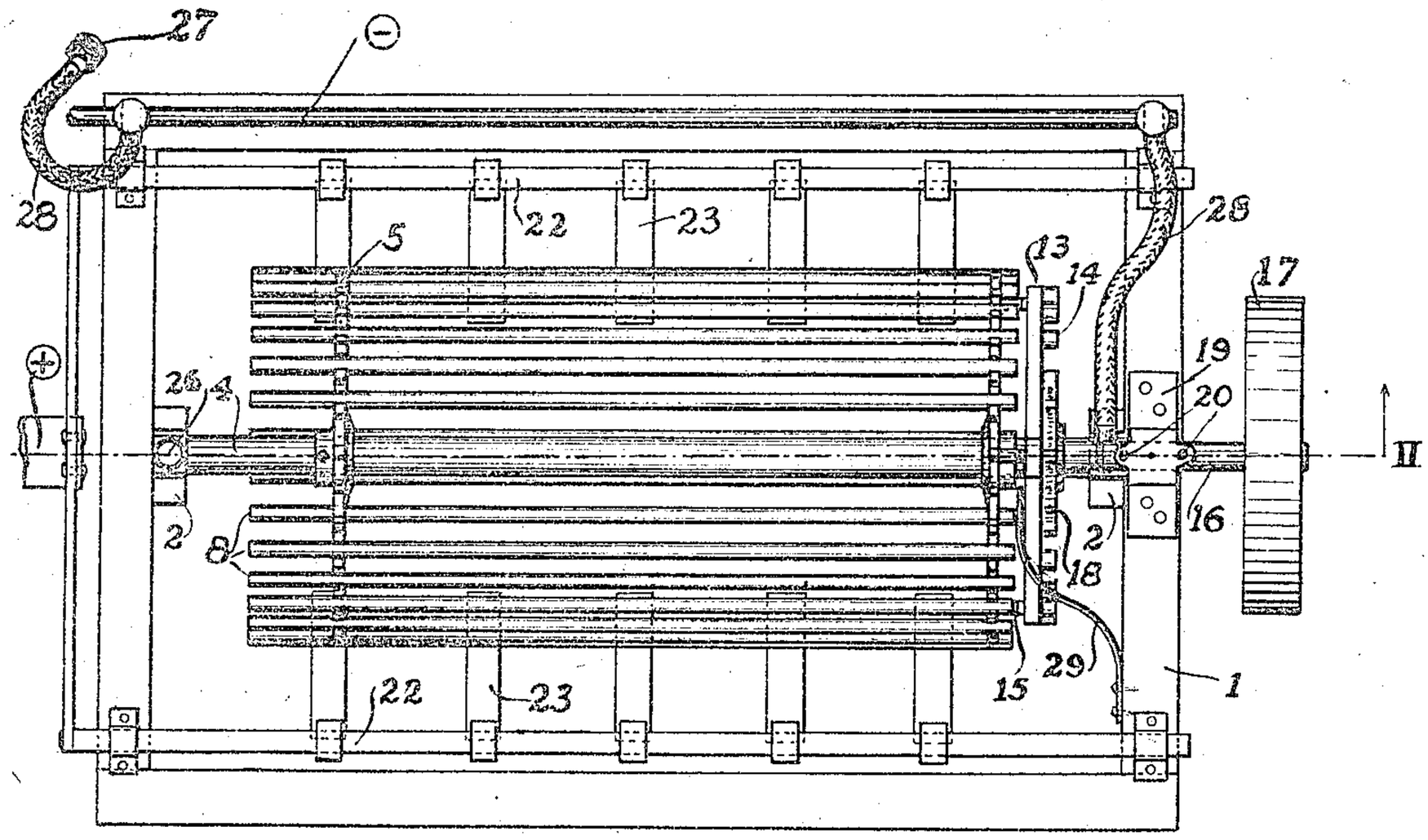

Fig. 1

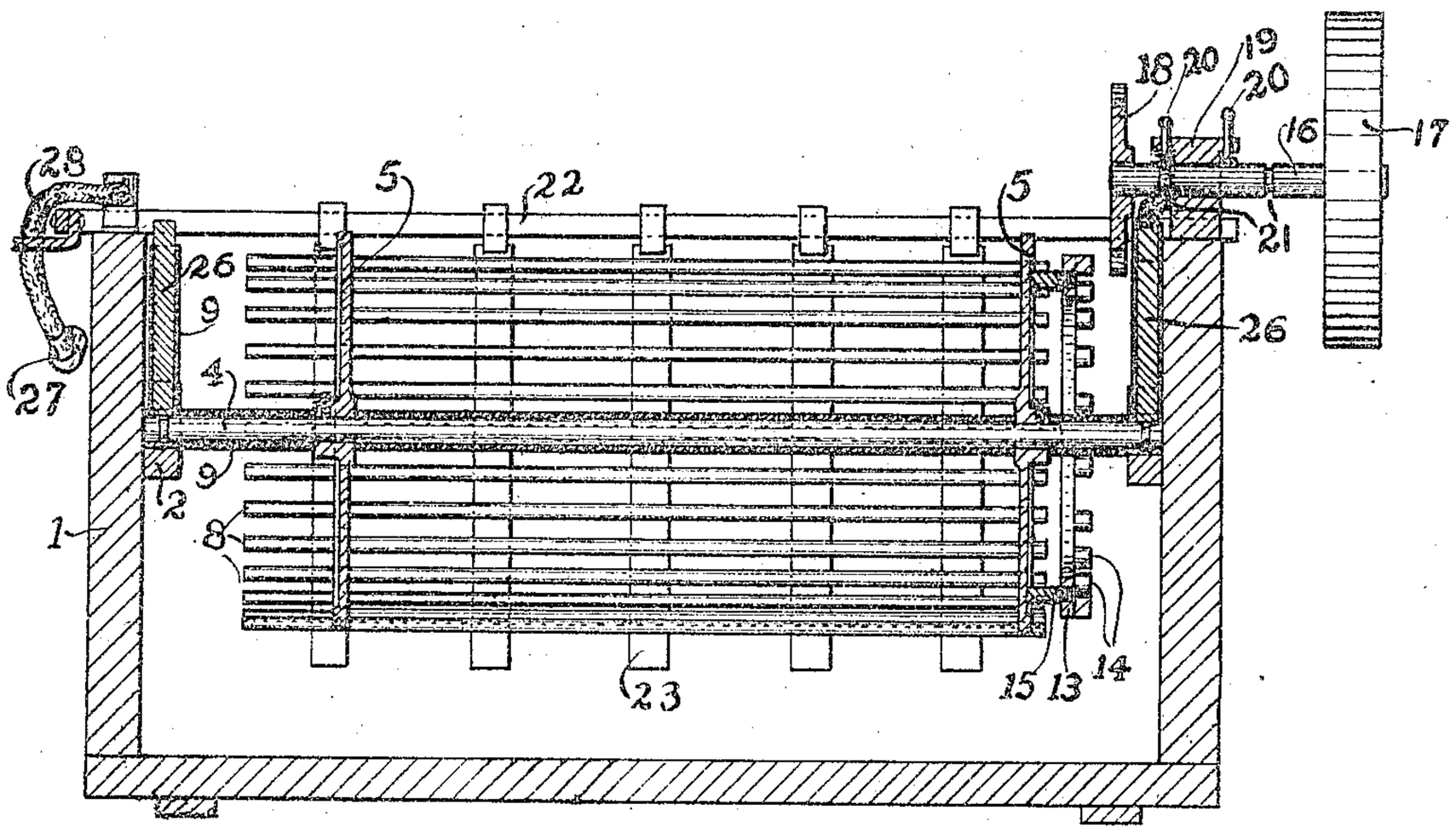

Fig. 2

Witnesses

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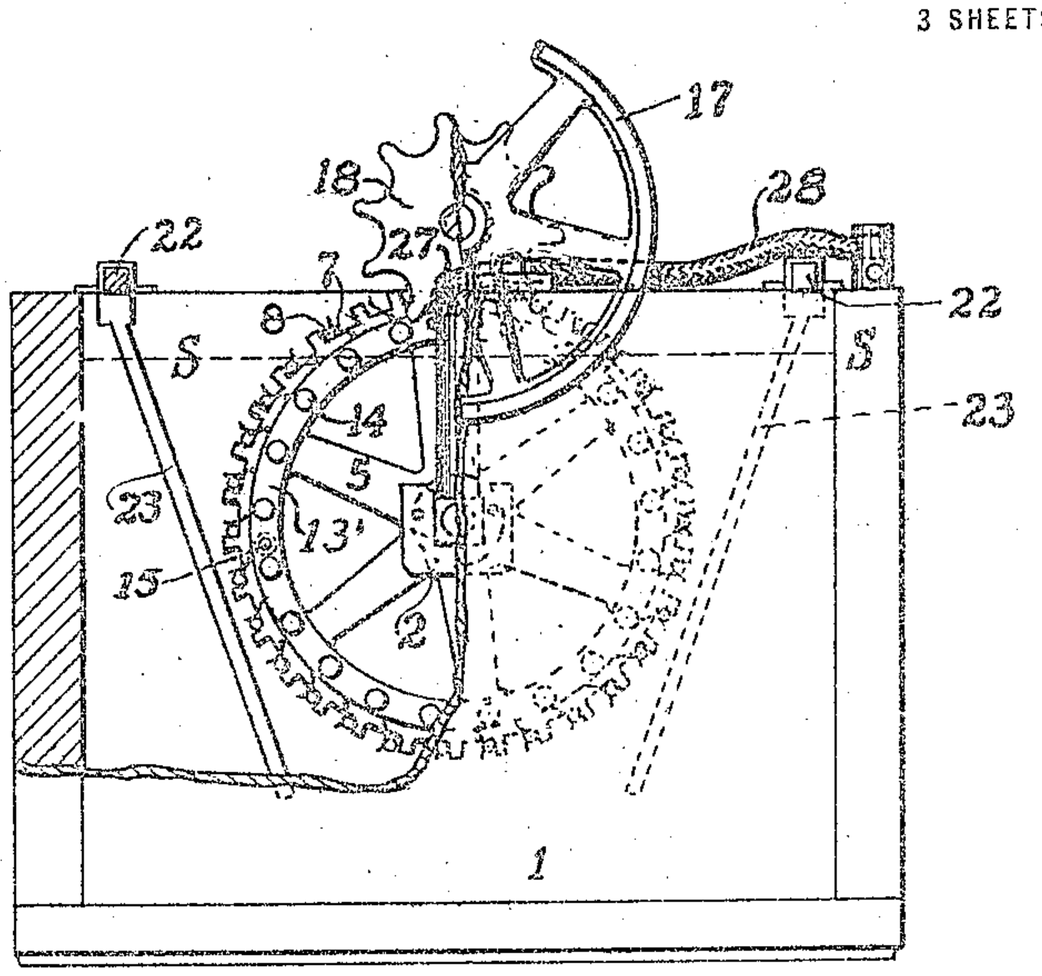

Fig. 3

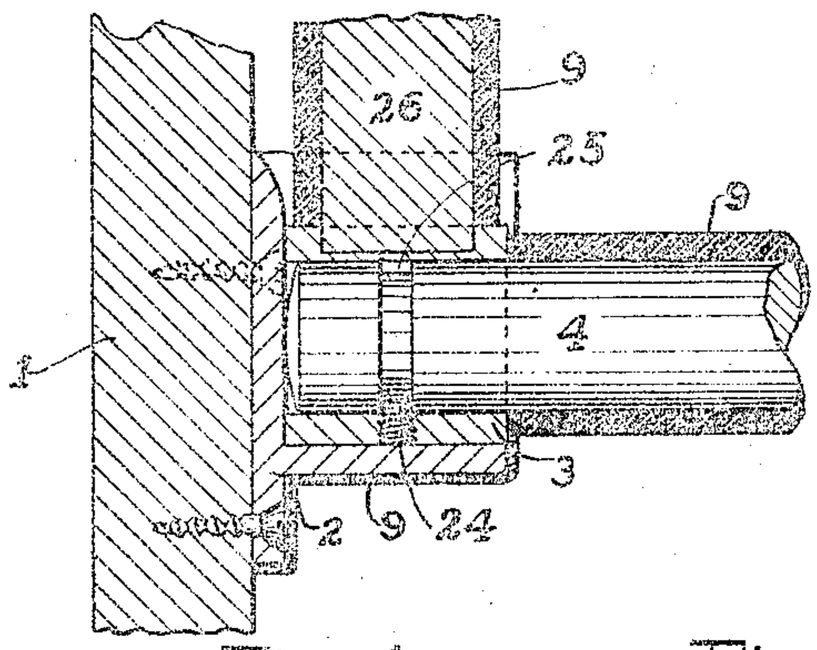

Fig. 4

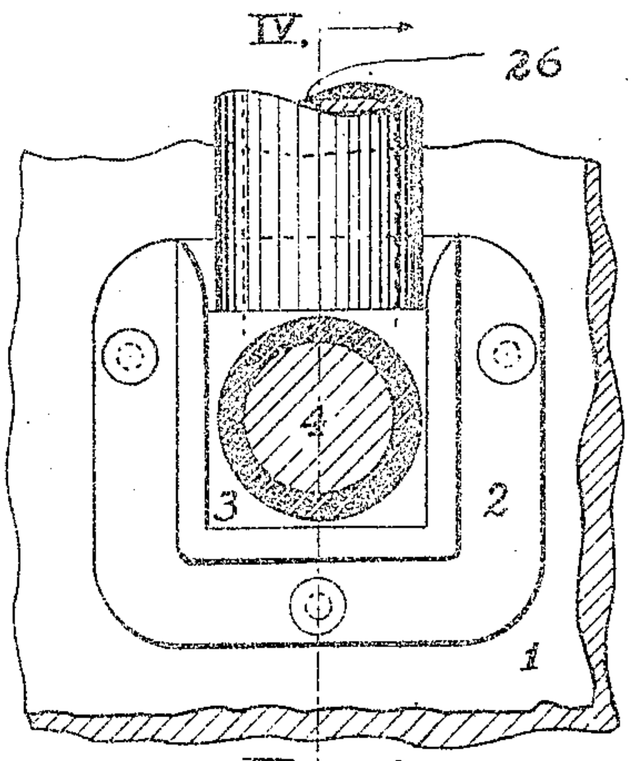

Fig. 5

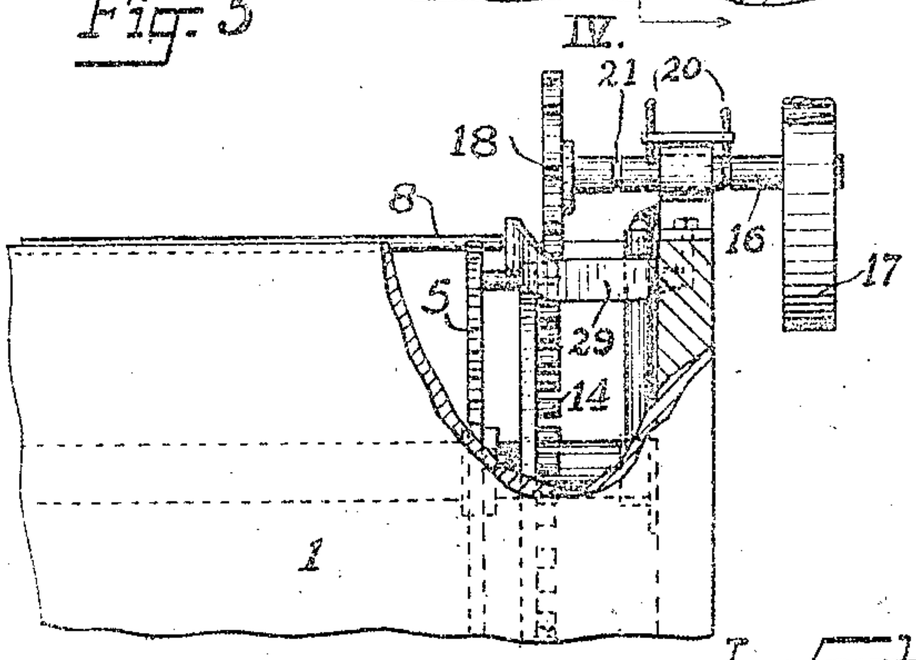

Fig. 6

Witnesses
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3 SHEETS—SHEET 3.

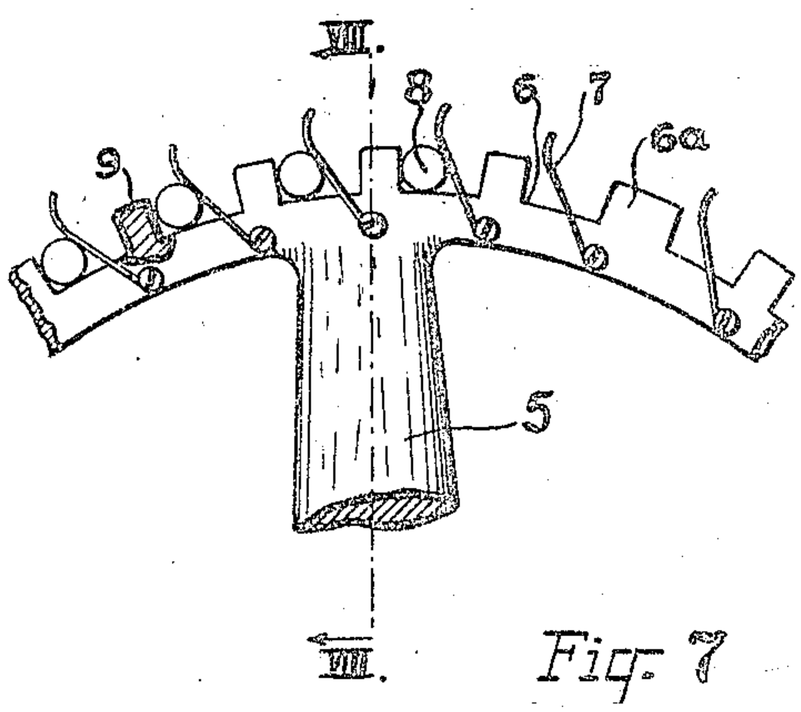

Fig. 7

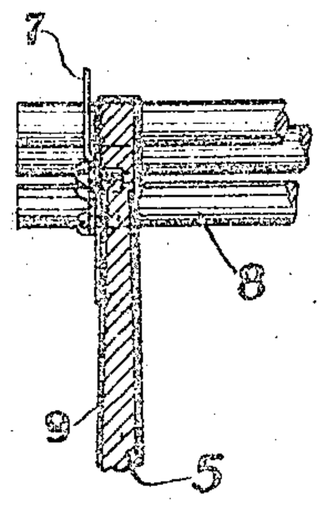

Fig. 8

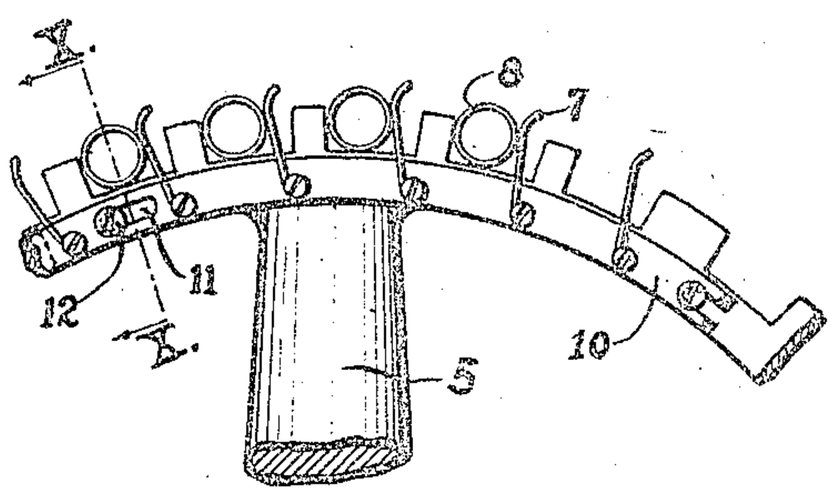

Fig. 9

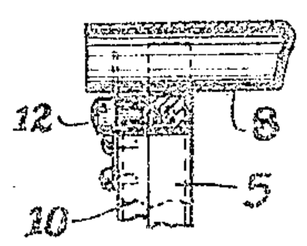

Fig. 10

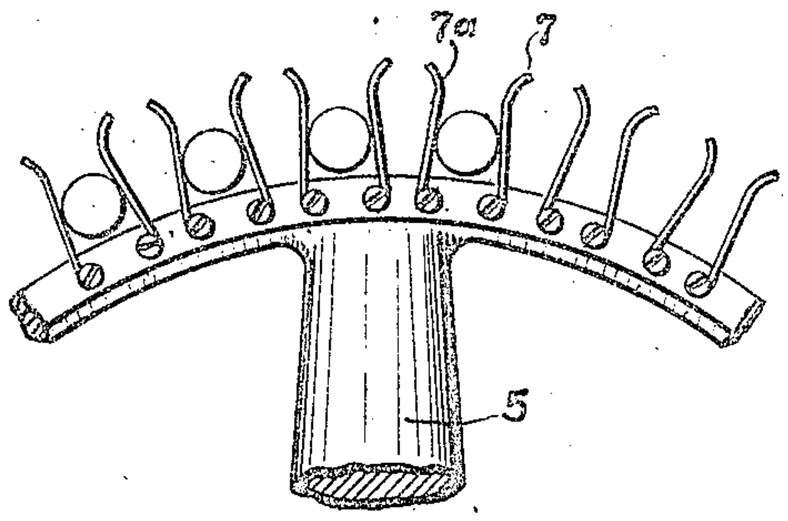

Fig. 11

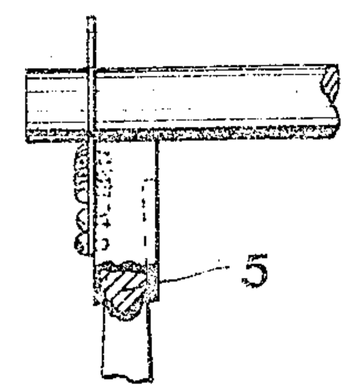

Fig. 12

Witnesses

Seth Johnson

T. V. Mackinnon

Inventor

Hermann R Boissier

By F. Amos Johnson Att'y

UNITED STATES PATENT OFFICE.

HERMANN R. BOISSIER, OF GREAT NECK, NEW YORK.

ELECTROPLATING DEVICE.

1,154,604. Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed June 1, 1914. Serial No. 842,032.

To all whom it may concern:

Be it known that I, HERMANN R. BOISSIER, a citizen of the United States, and a resident of Great Neck, in the county of Nassau and State of New York, have invented certain new and useful Improvements in Electro-plating Devices, of which the following is a specification.

My invention relates to electro-plating and my improvements as herein shown are embodied in an apparatus which is designed especially to facilitate the plating of rods, such as curtain rods, and the like; although some of the improvements are capable of a wider use.

In the following detailed description reference is made to the accompanying drawings, in which:

Figure 1 is a plan; Fig. 2 is a front sectional elevation on the line II—II of Fig. 1; Fig. 3 is a right end elevation with some of the parts broken away; Figs. 4 and 5 are details in section and elevation respectively of one of the supporting sockets of the cathode-carrying frame; Fig. 6 is a small portion of a front elevation; Fig. 7 is a detail showing a partial end elevation of one of the cathode-carrying wheels; Fig. 8 is a sectional view on line VIII—VIII of Fig. 7, showing the springs fixed; Figs. 9 and 10 are similar views showing the springs movable and Figs. 11 and 12 are similar views showing an alternative construction of the same parts.

The tank 1 has secured to inner opposite ends a pair of socket pieces 2, each of which removably holds a bearing block 3 for the journal 4 of the cathode-carrying frame or rack which is composed of the shaft 4 and a pair of end wheels 5 which are exactly alike and which are provided with notches 6. There is a spring 7 for each notch which tends to press toward one side of the notch so as to clamp the bars or rods 8 which are being plated, as shown clearly in Fig. 7. The shaft 4, except in its bearings, and the end wheels are covered with an insulating material 9. This may be effected by a coating of liquid celluloid, leaving only the springs 7 exposed to the depositing action of the current in the plating solution and when they become too badly incrusted they are easily replaced.

When rods of a larger or smaller diameter are to be plated the springs 7 may be attached to a ring 10 as shown in Figs. 9 and 10. This ring is provided with slots 11 and it is held by screws 12—the construction permitting the springs to be bodily adjusted to and from the sides of the notches against which the rods are clamped. For convenience in counting an extra wide space 6^a may be left between every ten notches of the frame.

The cathode-carrying rack or frame has at one end a pin gear composed of a rim 13 and pins 14, the rim being secured by studs 15 to one of the wheels 5. A horizontal shaft 16 having a drive pulley 17 on its outer end and a spur gear 18 on its inner end is carried in a bearing block 19 which is mounted on the tank. The shaft is slidable lengthwise in its bearings so as to permit the two gears to be thrown into and out of mesh with each other—one of a pair of pins 20 in the bearing block coöperating with one of a pair of annular grooves 21 in the shaft to hold the shaft locked in either of these positions.

The anode rods 22 and anodes 23 are the usual construction. The height of the solution is indicated by the line S—S. The bearing blocks 3 have retaining screws 24 which enter grooves 25 near the ends of the journal 4 and they are also provided with contact rods 26, the upper ends of which fit sockets 27 of the return leads 28. By this construction the entire cathode-carrying rack or frame is insulated, except the small retaining contact springs 7, as already pointed out. By disconnecting the leads 28 the cathode-carrying frame with its bearing blocks and connecting rods can be readily lifted from the tank for repairs or to permit the tank to be used in the ordinary way. An alternative construction is shown in Fig. 11 in which springs 7^a are used to clamp one side of the rods that are being plated instead of clamping them in the notches 6.

Sufficient current can be carried to the rods to plate them in one revolution of the cylinder, making the action of the apparatus continuous—the attendant removing the plated rods from that portion of the rack which is above or out of the solution and putting in new rods in their place. A guard strip 29 secured to the tank as shown in Figs. 1 and 6 is provided to keep the rods out of the gears.

What I claim is:

1. In an electro-plating device, a revoluble cathode-carrying frame or rack comprising a shaft; a pair of wheels secured to

said shaft—the rims of said wheels being provided with a plurality of recesses or notches; a corresponding plurality of springs secured to said rims and adapted to press toward one side of said notches, whereby a plurality of rods or bars may be held in longitudinal arrangement with relation to said shaft.

2. In an electro-plating device, a revoluble cathode-carrying frame or rack comprising a shaft; a pair of wheels secured to said shaft—the rims of said wheels being provided with a plurality of recesses or notches; a corresponding plurality of springs secured to said rims and adapted to press toward one side of said notches and means for bodily adjusting said springs to and from the sides of said notches.

3. In an electro-plating device, a revoluble cathode-carrying frame or rack comprising a shaft; a pair of wheels secured to said shaft; a plurality of springs secured to the rims of said wheels, all of said parts except said springs being covered with a coating of insulating material—whereby a plurality of rods or similar articles to be plated may be held in the plating solution and revolved with only the contact springs of the holding device subject to the action of the current.

4. An electro-plating device comprising a tank; a pair of socket pieces secured to inner opposite sides of said tank; a revoluble cathode-carrying rack or frame; bearing blocks for the axis of said frame—said bearing blocks being removably held in and supported by said socket pieces; a gear mounted on said frame concentric with its axis; a drive shaft mounted on said tank and a gear on said shaft—said drive shaft being slidable in its bearings to bring said gears into and out of mesh with each other.

5. In a plating device, the combination of the following elements: a tank; a pair of socket pieces secured on inner opposite sides of said tank; a revoluble cathode-carrying rack or frame supported by said socket pieces; a gear mounted on said frame or rack by means of which it is turned; a shaft mounted on said tank and a gear on said shaft—said shaft being slidable endwise in its bearing to bring said gears into and out of mesh with each other and having an annular groove formed therein and a locking pin adapted to enter said groove to lock said shaft in a position with said gears in mesh.

6. In a plating device, a revoluble cathode-carrying frame or rack provided with a plurality of pairs of gripping contact springs, the springs of each pair being secured to opposite ends of said frame.

7. In a plating device, a revoluble cathode-carrying rack or frame provided with a plurality of pairs of gripping contact springs the springs of each pair being secured to opposite ends of said frame, in combination with a gear on said frame concentric with the axis thereof; a drive gear in mesh with said frame gear and a guard interposed between said springs and said gears.

In testimony whereof I affix my signature in presence of two witnesses.

HERMANN R. BOISSIER.

Witnesses:

ADOLPH A. MERZ,

EDGAR BOISSER.