

No. 770,148.

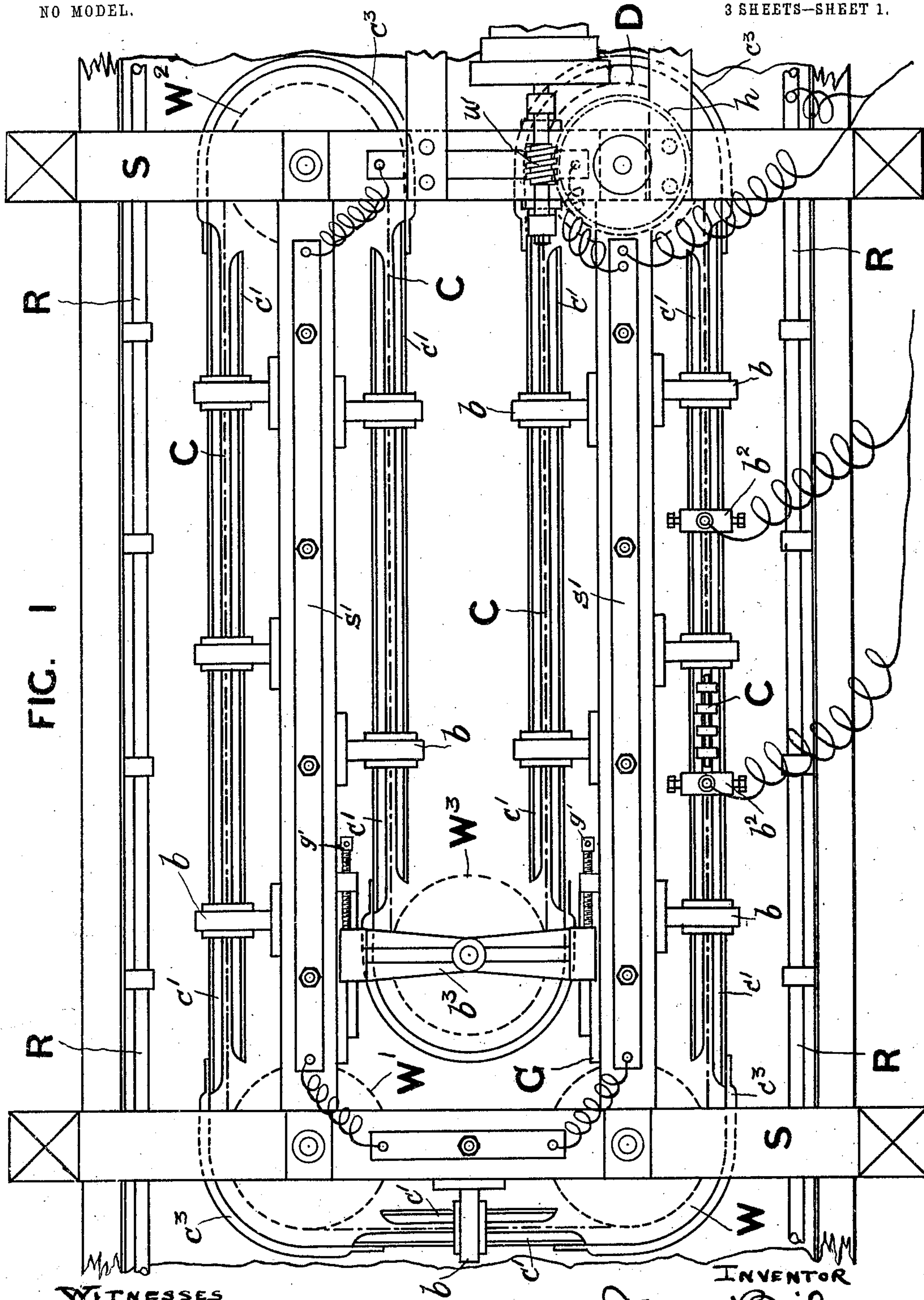
PATENTED SEPT. 13, 1904.

J. BAILEY.
ELECTROPLATING MACHINE.

APPLICATION FILED FEB. 14, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES

Adombrady
E. H. Perkins

INVENTOR

James V. Bailey
By J. G. [Signature]

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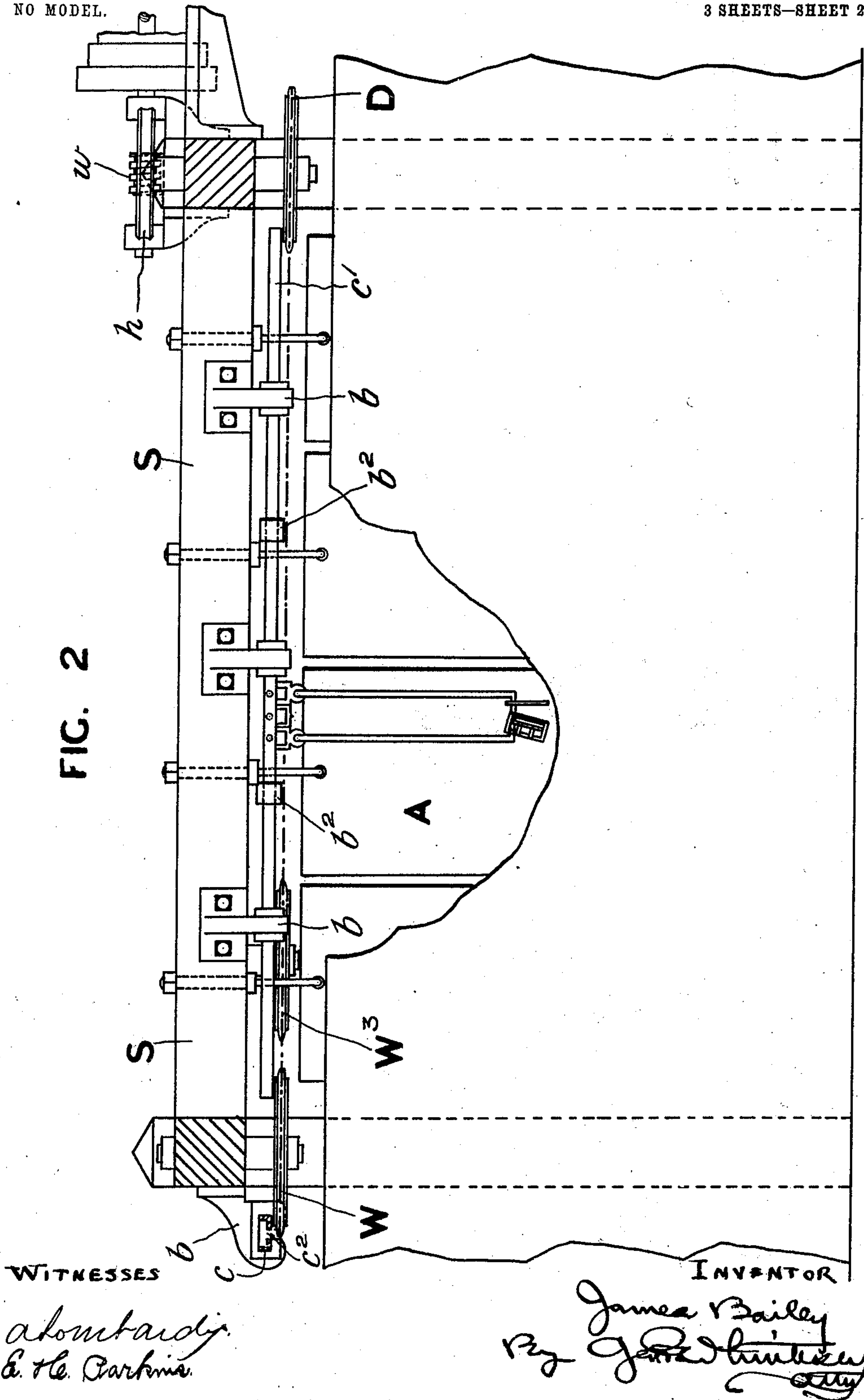
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

FIG. 3

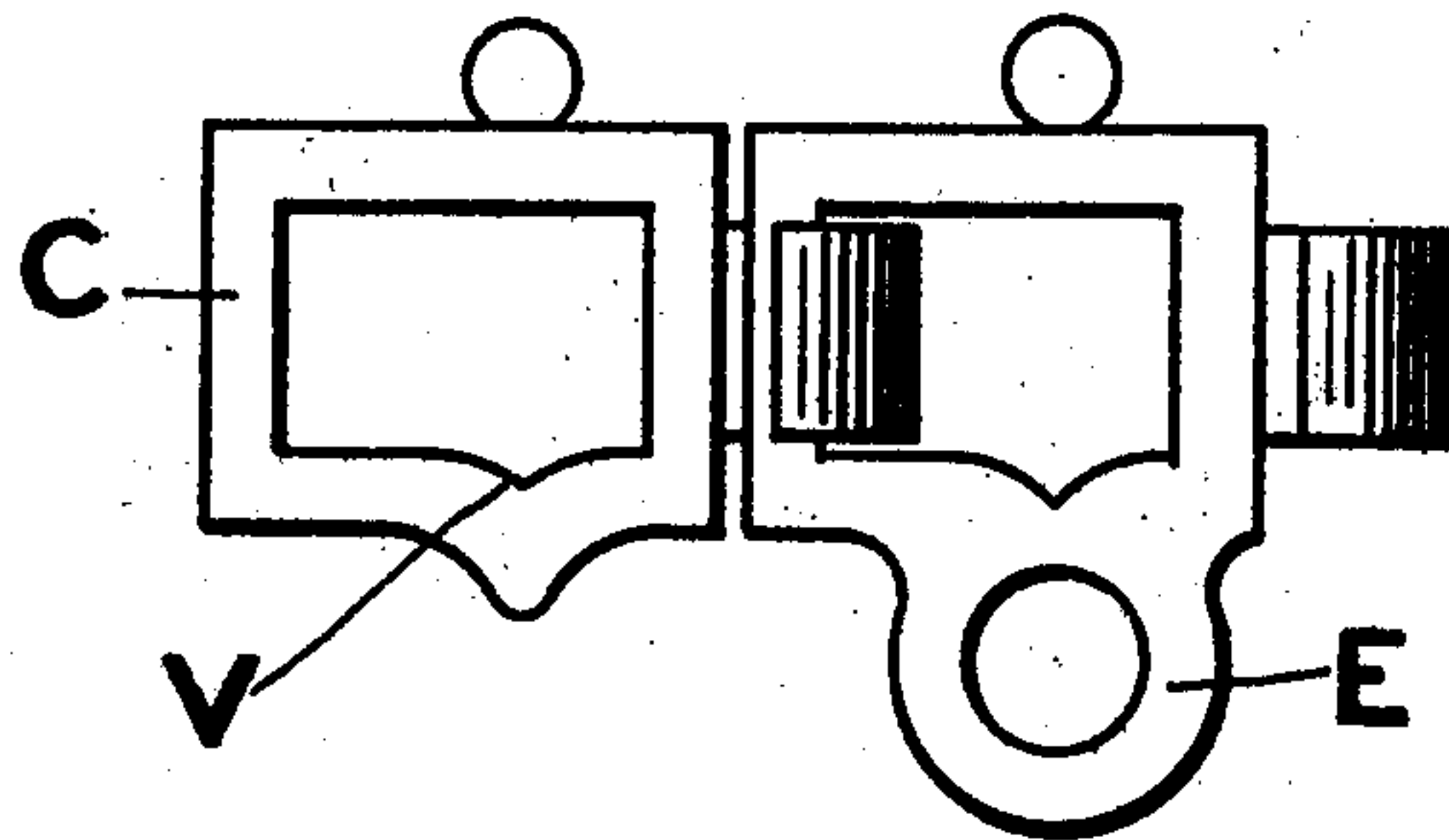


FIG. 4

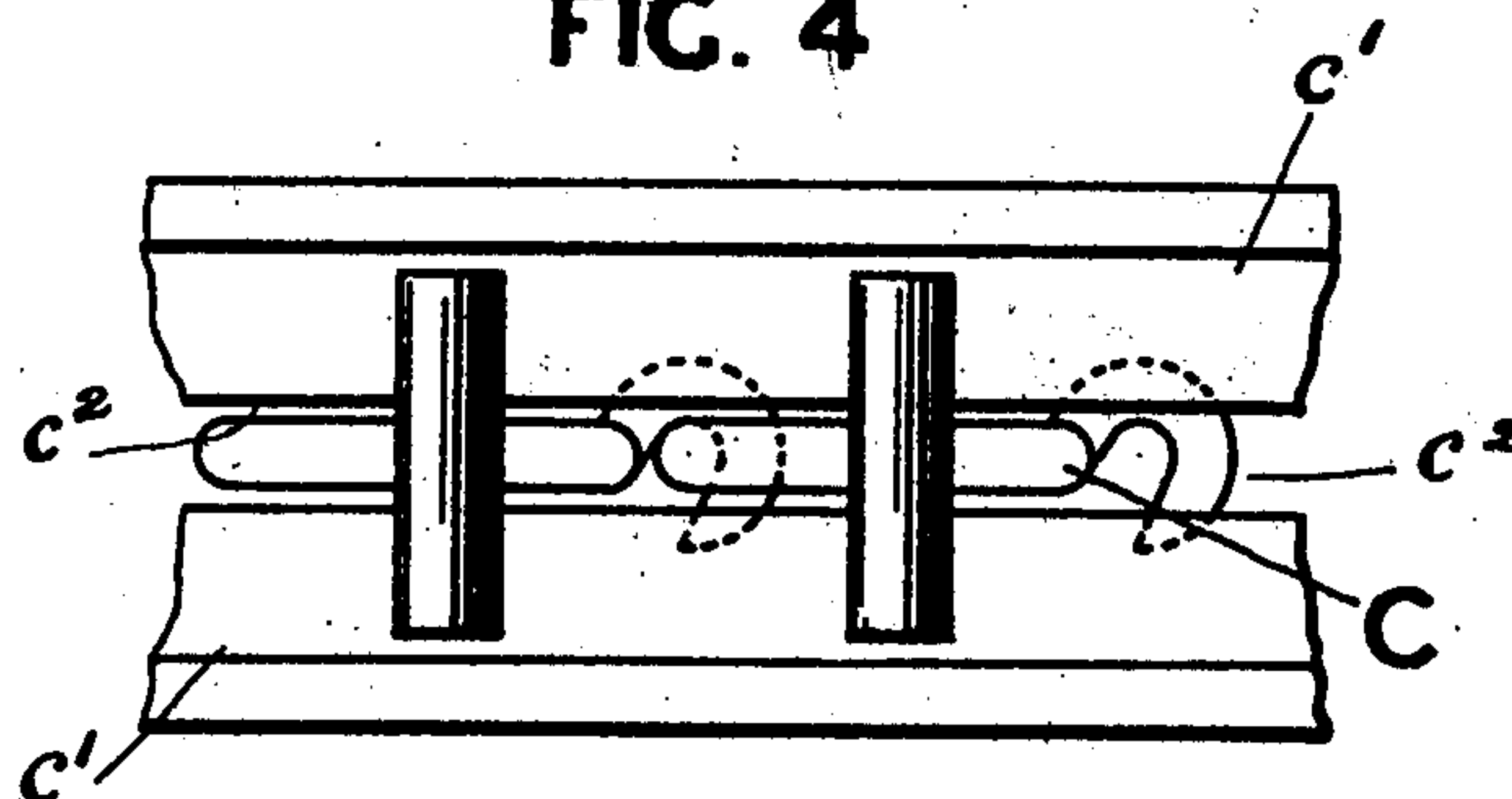


FIG. 5

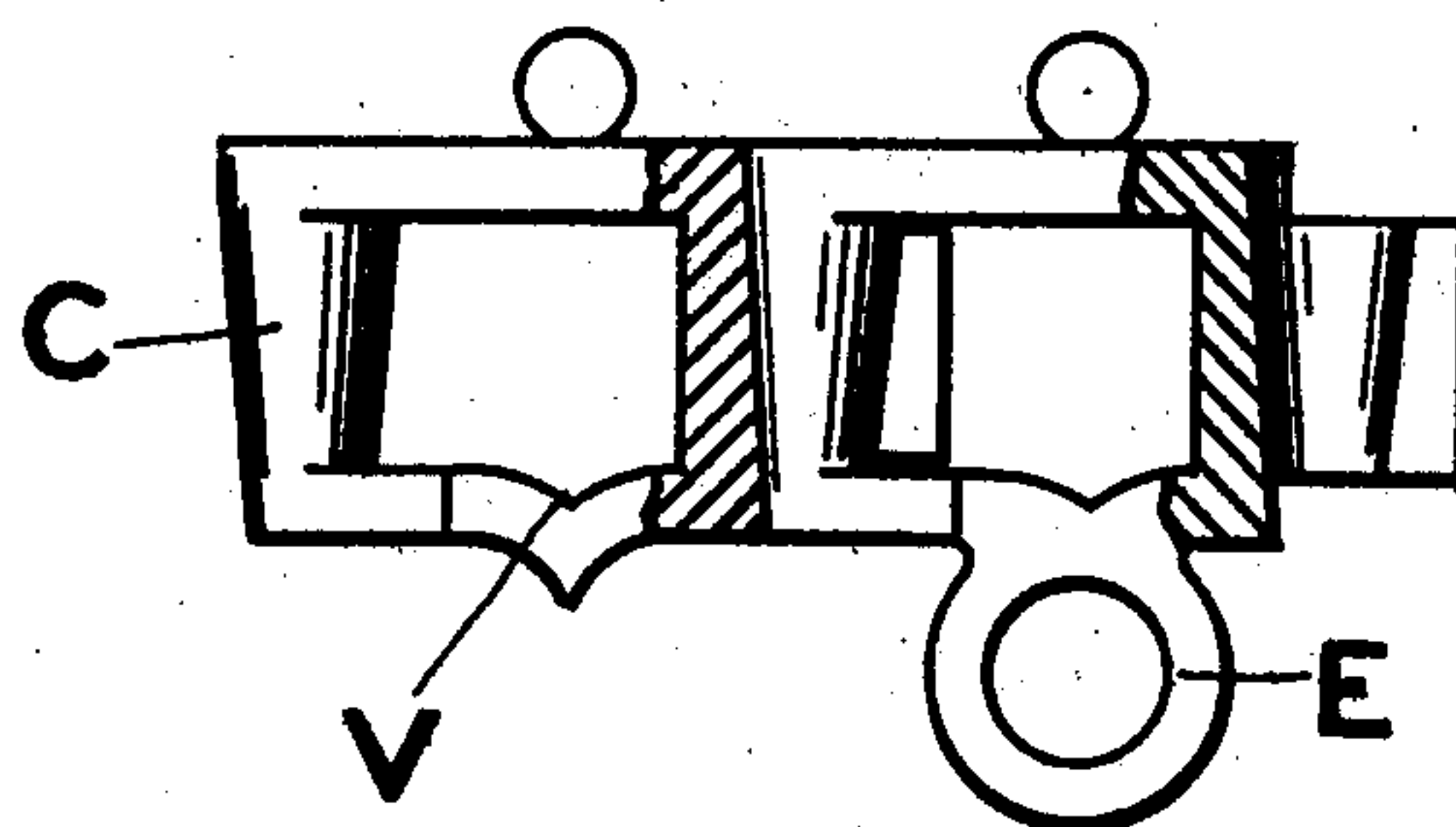
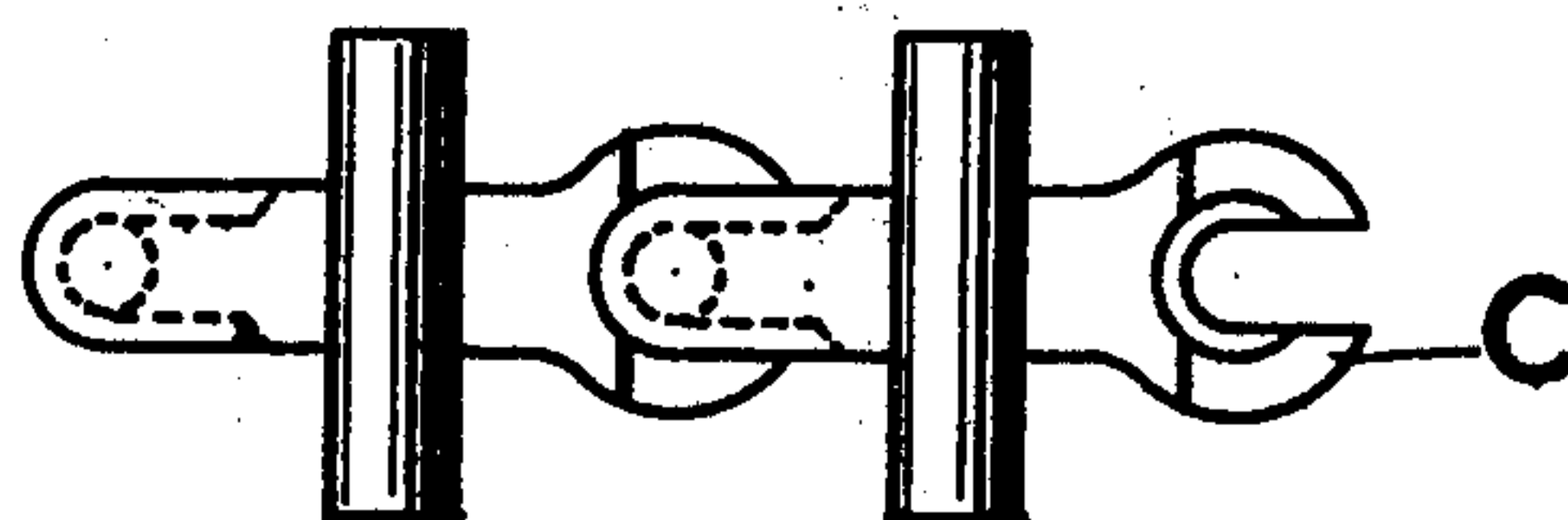


FIG. 6



WITNESSES

Adonitardy
E. H. Perkins.

INVENTOR

James Bailey
By J. W. Huntley
att.

UNITED STATES PATENT OFFICE.

JAMES BAILEY, OF WALSALL, ENGLAND.

ELECTROPLATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 770,148, dated September 13, 1904.

Application filed February 14, 1903. Serial No. 143,464. (No model.)

To all whom it may concern:

Be it known that I, JAMES BAILEY, manufacturer, a subject of the King of Great Britain, residing at Crown Mills, Wolverhampton street, Walsall, in the county of Stafford, England, have invented certain new and useful Improvements in Electroplating-Machines, of which the following is a specification.

My invention comprises improvements in the mode and means for electroplating, by which the plating of the articles is greatly facilitated and certain articles are capable of being plated which could not be so readily effected by the revolving drum or similar process as at present used without difficulty, nor yet by the well-known process of wiring the articles to be plated in groups and suspending in stationary vats. Moreover, a larger number of articles may be treated at one operation and are plated with great rapidity.

In order to facilitate conception of my invention and enable same to be carried into practice, Figure 1 is a plan of my vat with the structure and conveying mechanism for operating the work during electrolysis. Fig. 2 is an elevation of Fig. 1 with parts of the vat, &c., broken away, the illustration being confined to the conveying cathode-chain and its accessories. Fig. 3 shows a piece of the cathode-chain conveyer in elevation. Fig. 4 shows a plan of the conveyer running in its channeling. Fig. 5 is an elevation, partly in section; and Fig. 6 is a plan view of a modification.

In carrying out my invention I provide over an ordinary electroplating-vat a wooden structure S, from which is suspended a traveling conveyer C, which is driven in the horizontal plane a short distance above the surface of the electrolyte around chain-wheels through any suitable driving medium from the shop-shafting, such as a pulley and beveled gear-wheels, or a pulley, as shown in Fig. 1, driving through a worm *w* and helical wheel *h*, which is above the structure S, and on the lower end of the same spindle the driving chain-wheel D is fixed. The other chain-wheels, W, W', and W² and W³ are all mounted freely in the same horizontal plane as D and form rotatable supports for the conveyer-chain C, which is con-

tinuous and travels as indicated in Fig. 1 by arrows and rests by its T-links in a channel *c'*, supported by brackets *b* from the wooden structure, as seen clearly in Figs. 1 and 2. The cross T-links of the chain, already referred to, are seen clearly in plan in Fig. 4, where the channeling *c'* is shown with its central slot C² C², through which the chain passes, and it will be easily understood by reference to Figs. 3, 4, 5, and 6 how the chain is readily separated link from link, and it will also be understood that eyes E may be provided on every link or only every other, in which the wire carrying the work to be plated is hung. Small wired articles are, however, hung in the recess V at the bottom of each link.

The anodes A are hung around the vat on a metal rail R, and there are four rows, two being suspended by special bolt-hooks, which pass through the members of the structure and are electrically in contact by means of a copper strip which is laid in or along the top of each of the internal members of the structure S, as seen in Fig. 1. The cable from the + pole of the dynamo is divided up and is connected at various points to the anode-rail R and strip *s'*, while the cable from the negative pole of the dynamo is similarly divided and makes contact through special little bridges *b'* with the metal channeling *c'*, in which the conveyer travels, and the ends of the channeling may be connected by thick copper wires *c'* in every case in order to avoid any possible loss of current, although of course the continuous traveling conveyer C, which is literally the traveling cathode and the principal point in my invention, would carry the current round. It may here be noted that wheel W³ is mounted in a bridge *b'*, which is slidable on guides G, allowing the tension of the conveyer-chain to be adjusted by the turning of the tommy-screw *g'*.

The process of plating with my apparatus is very simple and expeditious. The work may either be slung on a plain swing of wire, as shown in Fig. 2, or hung onto straight hooks, which may be inserted in every link of the conveyer. The work then traverses up and down continuously between four rows of anodes whose combined area is much greater

than that of the work, so that the plating is deposited very rapidly as compared with processes hitherto employed, and by the constant circulation the deposit is found to be smooth
5 and perfect and not in the least granular, showing that depolarization is almost entirely absent—*i. e.*, reduced to a minimum.

It will be readily understood that once the cathode-conveyer is loaded with work the
10 process is continuous, and as plated work is taken off fresh work may be hung on.

What I claim then is—

In an electroplating-machine, the combination with a tank, of a non-conducting frame-

work suspended above said tank, a continu- 15
ous chain conveyer serving as a cathode and arranged in parallel lengths and supported by said framework, anodes supported by said framework between the lengths of said conveyer, means for electrically connecting said 20
anodes, and means for driving said cathode.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JAMES BAILEY.

Witnesses:

A. BARKER LAKE,
EMMA MOLD.