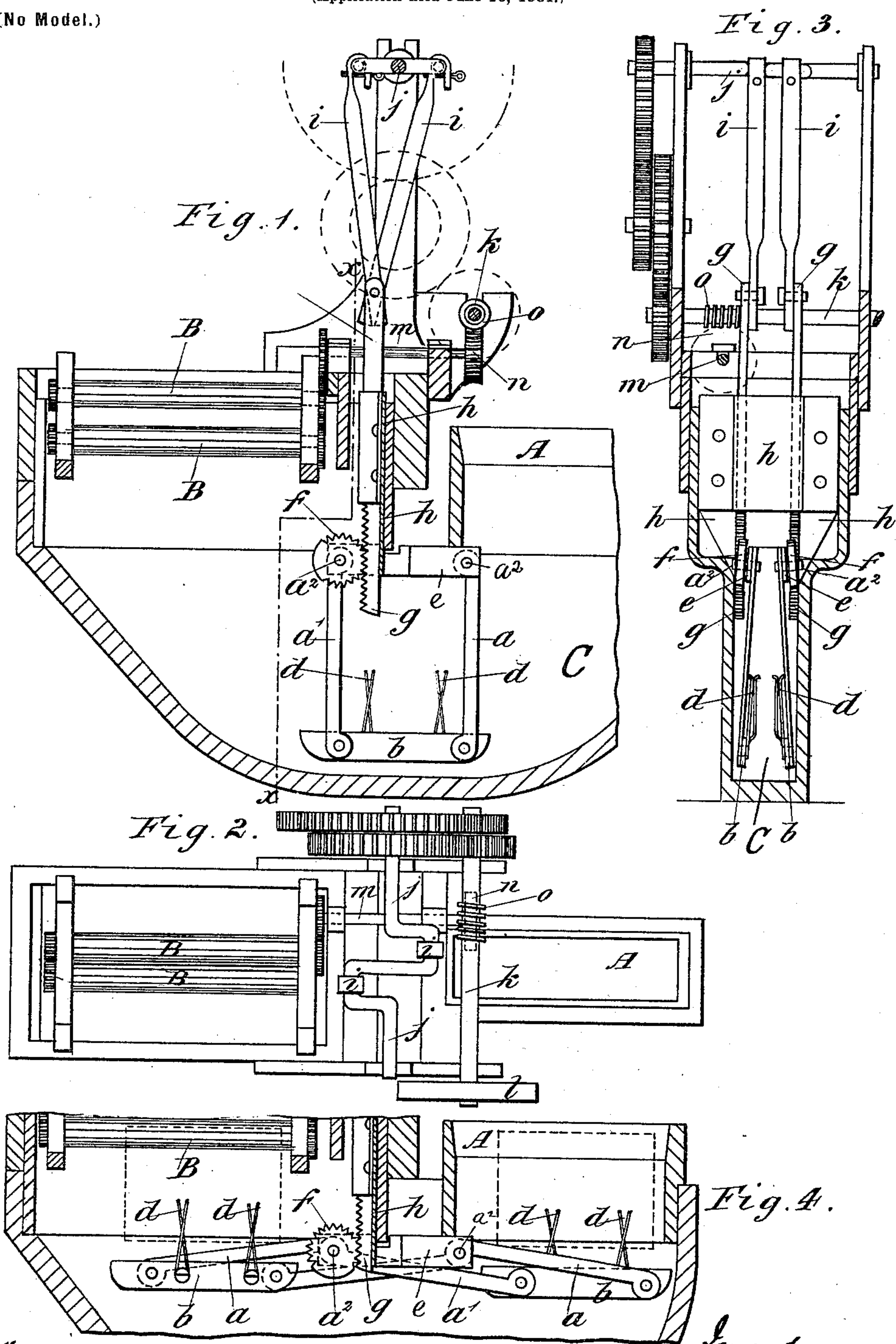


J. H. WILLIAMS.  
APPARATUS FOR COATING METAL PLATES.

(Application filed June 10, 1901.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN HENRY WILLIAMS, OF ABERTILLERY, ENGLAND.

## APPARATUS FOR COATING METAL PLATES.

SPECIFICATION forming part of Letters Patent No. 697,909, dated April 15, 1902.

Application filed June 10, 1901. Serial No. 63,980. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HENRY WILLIAMS, a subject of the King of Great Britain and Ireland, residing at Abertillery, county of Monmouth, England, have invented Improvements in Apparatus for Coating Metal Plates, of which the following is a specification.

This invention relates to an apparatus placed in the bath of coating metal to receive the sheets or pieces of metal at one place and deliver them at another place to the withdrawing-rolls.

In the accompanying drawings, Figure 1 is a longitudinal section of part of a tinning-pot with the present invention applied thereto; Fig. 2, a plan view; Fig. 3, a section on the line  $x x$ , Fig. 1; and Fig. 4, a longitudinal section showing the plate-carriers moved apart to the full extent of their travel.

In the drawings, C is a bath of coating metal heated in any desired manner and containing within it two plate-carriers, each of which consists of a frame, the side arms  $a a'$  of which are pivoted at one end on pins  $a^2$  to a fixed flat bar  $e$  and at the other end carry a bottom member  $b$ . This member  $b$  is provided with clips to receive and hold the metal plates to be coated. These clips may conveniently, as shown, each consist of rods  $d$ , so disposed and shaped as to exert a spring-pressure on a plate that is inserted edgewise between them. Obviously other forms of clips may be employed in lieu of the clips shown. The bars  $e$ , which support the arms  $a a'$  of the frames, are inclined at an angle to the walls of the coating-bath and are fixed to or formed in one with a bracket  $h$ , that is bolted to the grease-box A. On each of the pins  $a^2$  of the arms  $a'$  is keyed or otherwise secured a pinion  $f$ , which gears with a rack  $g$ , that works vertically up and down through guide-channels in the bracket  $h$ . Each of the racks  $g$  is connected through a connecting-rod  $i$  to a crank on the crank-shaft  $j$ . The crank-shaft  $j$  is driven from the pulley  $l$  through a shaft  $k$  and intermediate toothed gearing. The racks  $g$  on the rotation of the crank-shaft are thus caused to reciprocate in the guide-channels and to swing the plate-carriers to and fro in the coating-bath. The carriers, owing to the inclination of the bars  $b$ , are inclined to the walls of the coating-bath, as also are the pin-

ions  $f$ . The plate-carriers, therefore, in swinging backward and forward in the coating-pot cross each other's path without colliding and are presented at the end of their travel the one centrally below the flux-box and the other centrally below the withdrawing-rolls. As one carrier is being charged at the flux-box with a plate to be coated the other carrier is delivering up a plate that has passed through the bath and has been coated to the withdrawing-rolls.

As before stated, the crank-shaft  $j$  is driven from the pulley  $l$  on the shaft  $k$ , the withdrawing-rolls B being rotated through a train of toothed gearing, shaft  $m$ , worm-wheel  $n$  thereon gearing with a worm  $o$  on the pulley-shaft  $k$ .

What I claim is—

1. Apparatus for coating tin, terne and like plates, comprising a coating-bath, oppositely-movable plate-carriers mounted therein and means whereby said plate-carriers may be caused to travel forward and backward alternately from the receiving end to the delivery end of the bath, and from the delivery end to the receiving end, and to pass each other in transit substantially as described.

2. Apparatus for coating tin terne and like plates comprising a coating-bath, oppositely-movable plate-carriers pivotally mounted therein adapted to carry the plates edgewise and means whereby said plate-carriers may be caused to travel backward and forward alternately in the bath and to pass each other during this movement substantially as described.

3. Apparatus for coating tin terne and like plates comprising a coating-bath, oppositely-oscillating plate-carriers mounted therein and provided with means adapted to carry the plates edgewise, means whereby said plate-carriers may be caused to travel backward and forward alternately in the bath and to pass each other during this movement and means for causing the simultaneous oscillation of said carriers substantially as described.

4. An apparatus for coating plates comprising a bath, a plate-carrier pivotally supported at its upper end and depending into said bath and provided at its lower end with means for holding a plate edgewise, and means for os-

cillating said plate-carrier edgewise, for the purpose set forth.

5 5. Apparatus for coating tin, terne and like plates, comprising a coating-bath, oscillating  
plate - carriers pivotally depending therein  
and adapted to describe a sector-like path,  
plate-clipping devices mounted on said car-  
riers, means for oscillating said carriers, com-  
prising a pinion attached to one of the pivots  
10 of each plate-carrier, a reciprocating rack-bar

for each pinion, connecting-rods connected to said racks, and a crank-shaft connected to said rods, substantially as described.

Signed at Bristol, in the county of the same city, this 30th day of May, 1901.

JOHN HENRY WILLIAMS.

Witnesses:

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