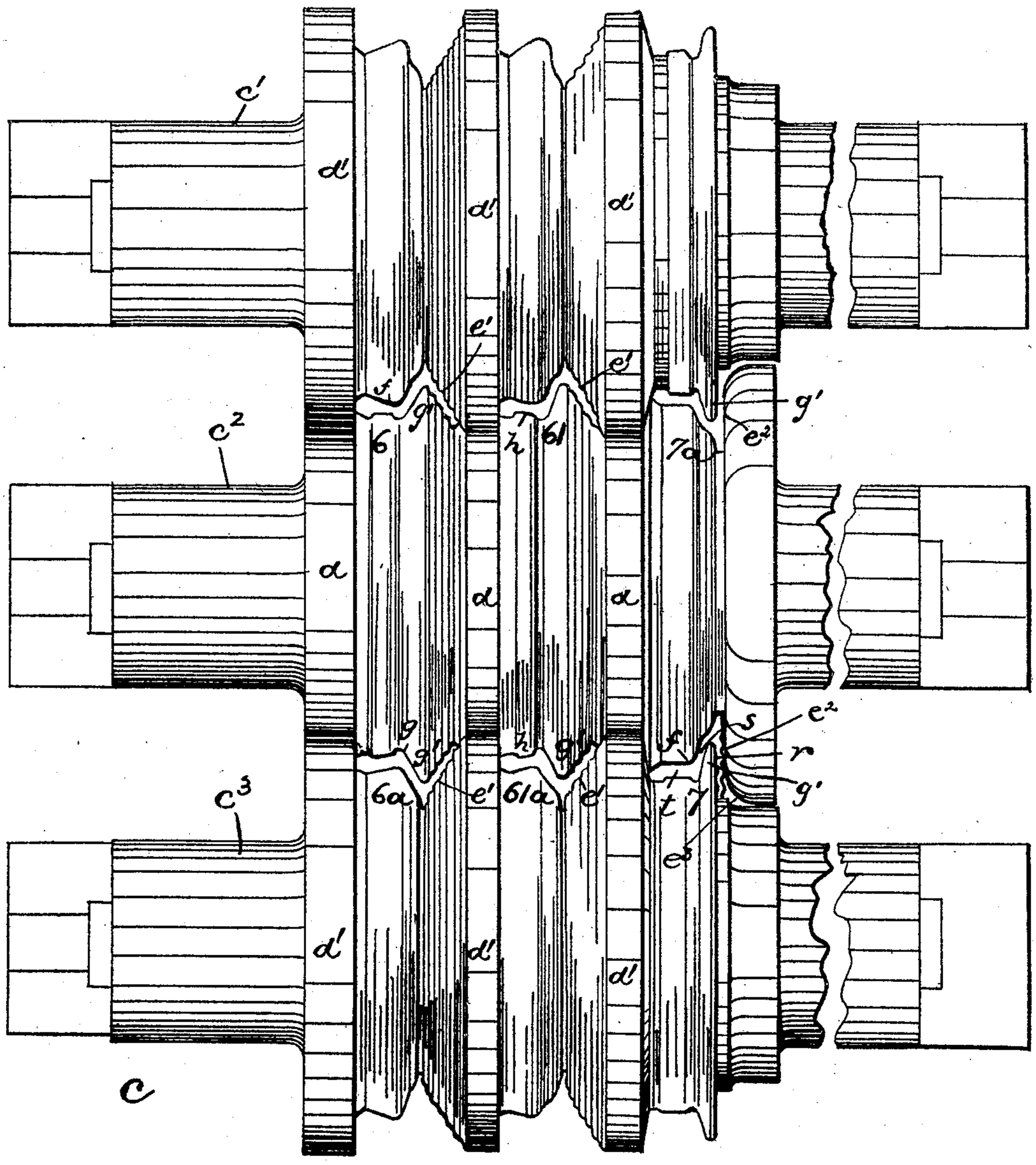
No. 795,801. PATENTED JULY 25, 1905.

R. B. CHARLTON.

MACHINE FOR ROLLING RAIL JOINT OR FISH PLATES.

APPLICATION FILED MAY 7, 1901.



WITNESSES:

Henry Krug

Russell M. Emrich

INVENTOR,

Richard B. Charlton,

BY

Drake & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

RICHARD B. CHARLTON, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO CONTINUOUS RAIL JOINT COMPANY OF AMERICA, A CORPORATION OF NEW JERSEY.

MACHINE FOR ROLLING RAIL-JOINTS OR FISH-PLATES.

No. 795,801. Specification of Letters Patent. Patented July 25, 1905.

Application filed May 7, 1901. Serial No. 59,085.

To all whom it may concern:

Be it known that I, RICHARD B. CHARLTON, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Machines for Rolling Rail-Joints or Fish-Plates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to characters of reference marked thereon, which form a part of this specification.

This invention relates to means for rolling the railway-joint or fish-plate shown in my prior patent, No. 667,499, issued February 5, 1901, and in which the foot member is ribbed or corrugated longitudinally.

The objects of the present invention are to facilitate and improve the rolling of such fish-plates, to provide a finishing-pass from which the fish-plate will be freely delivered, even though its corrugated member is in vertical position, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved rolls and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawing, the single figure shown therein illustrates a set of finishing-rolls embodying my improved construction.

In said drawing, *c* indicates the set of rolls as a whole, comprising top, bottom, and middle rolls, which are formed with circumferential channels *d* and flanges *d'*, interlocking in the same vertical plane, to hold the rolls against longitudinal displacement, as is usual. Between said flanges and channels are passes for metal formed by coöperating grooves and projections in the middle roll and contiguous top and bottom rolls. Two series of passes are provided, one series having two alternate passes 6 and 61 above the middle roll c^2 and a final pass 7 below said middle roll and the other series having two alternate passes 6^a and 61^a beneath the middle roll c^2 and a final pass 7^a above said middle roll. It will be understood by those skilled in the art that the fish-plate bars come to these finishing-rolls from a set of roughing-rolls and that in employing either series of passes not both of alternate passes 6 61 (or 6^a 61^a) are used, but either one or the other, according to the final size desired. Obviously there could be only one of such passes, or there could be more than the two shown, or the general construction of the rolls could be otherwise modified in any manner well known to the art.

Each pass has a straight side adapted to roll the base of the fish-plate, an inwardly-curved side *f*, adapted to roll the outer surface of the fish-plate, and a side *g* to form the inner or bearing surface of the fish-plate. Upon the said last side *g* is a projection *g'*, which serves to enter the angular recess of the fish-plate which incloses the base-flange of the rail. Furthermore, the side *e'* of that portion of the pass which forms the base member of the fish-plate is waved or corrugated, as is also the facing side of the projection *g'*, so that the said base or foot member *r* of the fish-plate is given the requisite ribbed form. A second projection *h* appears between the projection *g'* and that end of the pass farthest from the side *e'*, which projection enters at the inner side of the upright member *t* of the fish-plate, the groove which secures an engagement of the fish-plate against the web of the rail only at its upper and lower edges.

It will be understood that either of the alternate passes 6 61 (or 6^a 61^a) produces a finished plate with corrugated foot or base member, except that said foot member *r* is not bent to its proper angular relation with the oblique member *s*. This bending is effected by the final or seventh pass, the foot member being brought thereby into a vertical position, or perpendicular to the axis of the rolls.

It will be understood that if the foot member was grasped and brought into this position by corrugated sides of the roll-pass the fish-plate would not be freely delivered from the rolls, but would tend to work upward or curl around the roll to the detriment of the product. I have therefore in my improved rolls provided that the operation of corrugating shall be completed in the alternate passes, so that the only thing left to be done in the seventh or final pass is to bend the perfectly

corrugated foot member into the proper plane. This bending is accomplished by having the side e' of the pass and the facing side of the projection g', between which the foot member lies and which sides have in the previous passes been corrugated, now made plain in this pass and separated by a distance equal to or greater than the outside thickness of the corrugated foot member or the thickness between the planes of the tops of the opposite ribs or corrugations. By this construction, which is illustrated in pass 7 of the drawing by a fish-plate lying in said pass, the foot member r is held loosely, and there is nothing to enter and bind in its corrugations, so that the fish-plate in its wholly-finished form is delivered freely and easily from the rolls. Furthermore, the wall e^2 of said finishing-pass which is farthest from the body of the pass is preferably beveled or rounded outwardly at its outer edge, as at e^3, in the drawing. This prevents any possibility of the edge of said wall digging into the corrugations of the base member as the bending operation takes place and further insures a finished product.

Having thus described the invention, what I claim as new is—

1. The herein-described set of rolls for bending or closing into final position the corrugated base member of a fish-plate comprising a vertical portion and a doubled base portion the said base member of which has been left open at a greater angle than the normal in the process of rolling, said rolls providing a pass having a horizontal portion adapted to receive the vertical part of the fish-plate, an obliquely-disposed portion adapted to receive the upper member of the doubled base part and a vertical portion adapted to receive the said corrugated base member of said doubled part, said vertical portion of the pass having plane walls separated by a transverse distance equal to the distance between the tops of the ridges on the opposite sides of the base member and adapted to engage said base member at only said tops of its ridges.

2. A set of rolls for bending or closing in the base member of a fish-plate comprising an upright portion and a doubled lower portion adapted to grasp the flange of a rail, the said base member of said double portion being corrugated and left open in rolling the fish-plate at an angle greater than the normal, the said rolls providing a pass having a horizontal portion adapted to fit the vertical part of the fish-plate, an obliquely-disposed portion fitting the upper member of the doubled part of the fish-plate and a vertical portion adapted to receive the corrugated base member of the said doubled part, the walls of said vertical portion of the roll-pass being plain or devoid of corrugations and at a distance apart equal to the distance between the tops of the ridges on the opposite sides of said base member, and the outer wall or the one farthest from the body of the pass being beveled or rounded at its outer edge.

In testimony that I claim the foregoing I have hereunto set my hand this thirtieth (30th) day of April, A. D. 1901.

RICHARD B. CHARLTON.

Witnesses:

M. E. CHRISTENSEN,

HUGH P. KAYE, Jr.