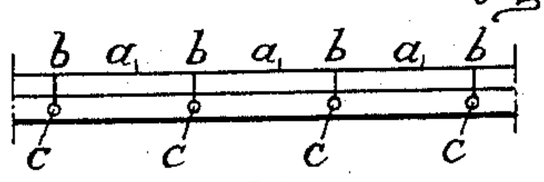
Oct. 7, 1930. L. RIGOLLET ET AL 1,777,679

ARTICULATION FOR LINK JEWELS

Filed March 18, 1925 2 Sheets-Sheet 1

Fig. 1.



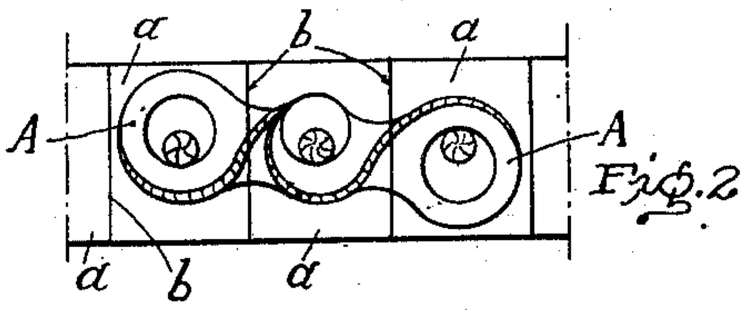


Fig. 2

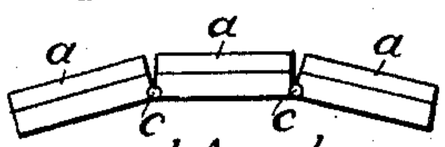


Fig. 3.

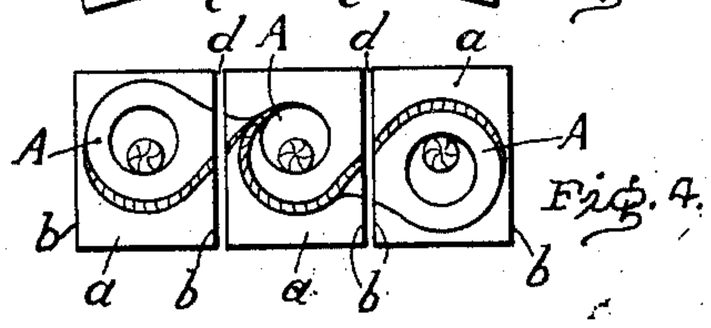
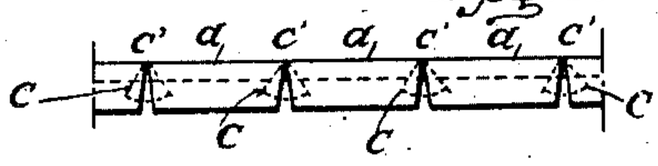


Fig. 4.

Fig. 5.



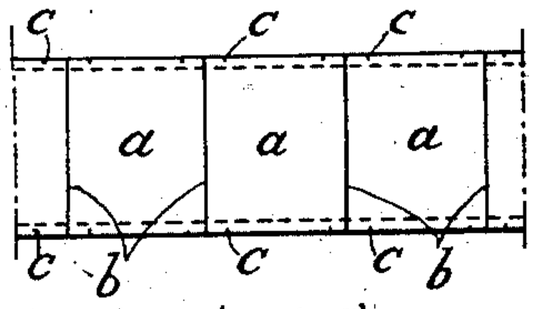


Fig. 6.

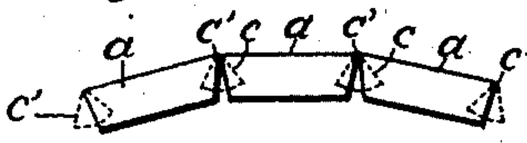
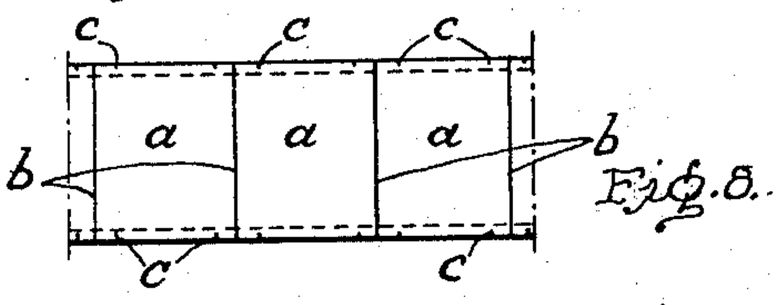


Fig. 7.



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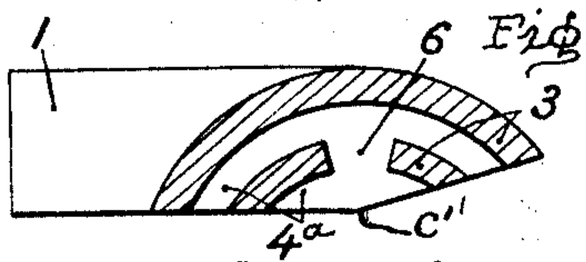


Fig. 9.

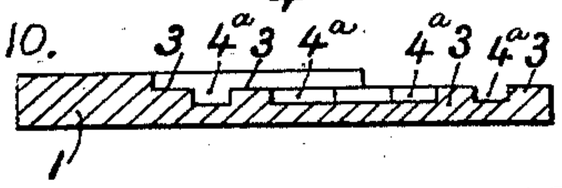


Fig. 10.

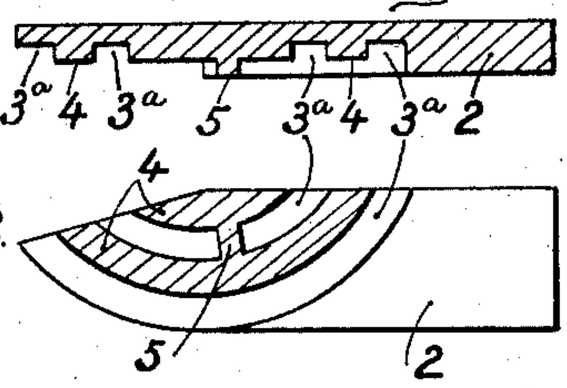


Fig. 11.

Fig. 12.

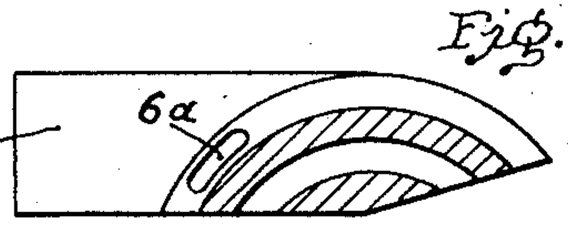


Fig. 13.

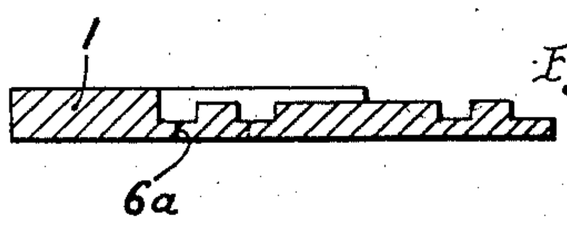


Fig. 14.

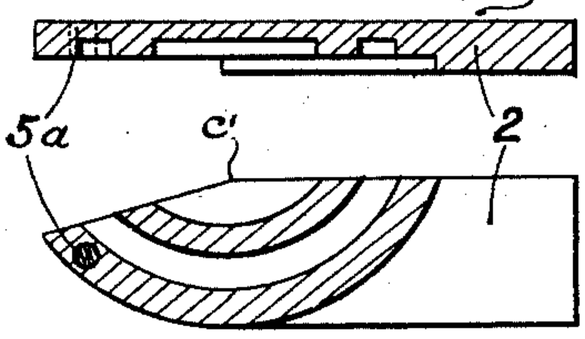


Fig. 15

Fig. 16.

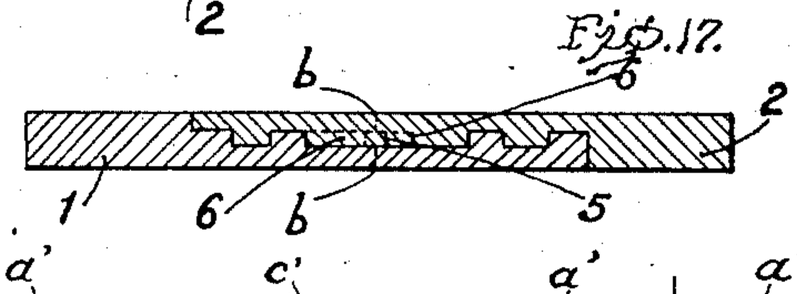


Fig. 17.

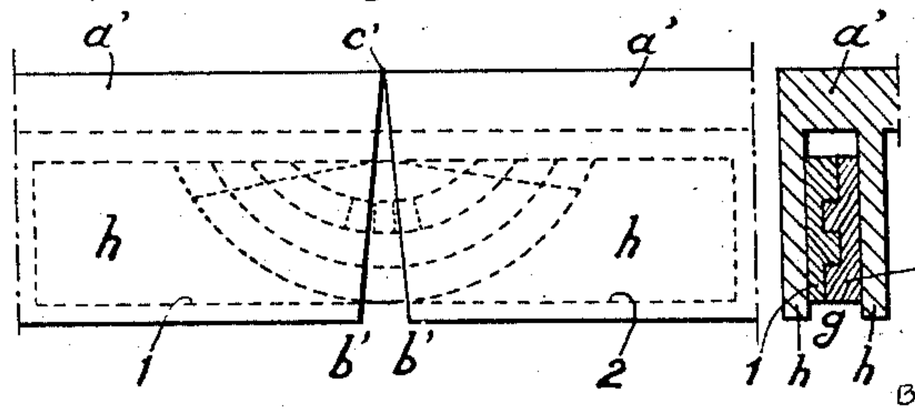


Fig. 18.

Fig. 19.

Louis Rigollet
Serafino Zoppini
INVENTORS
By Otto Rosenbach
their ATTORNEY.

Oct. 7, 1930. L. RIGOLLET ET AL 1,777,679

ARTICULATION FOR LINK JEWELS

Filed March 18, 1925 2 Sheets-Sheet 2

Fig. 20.

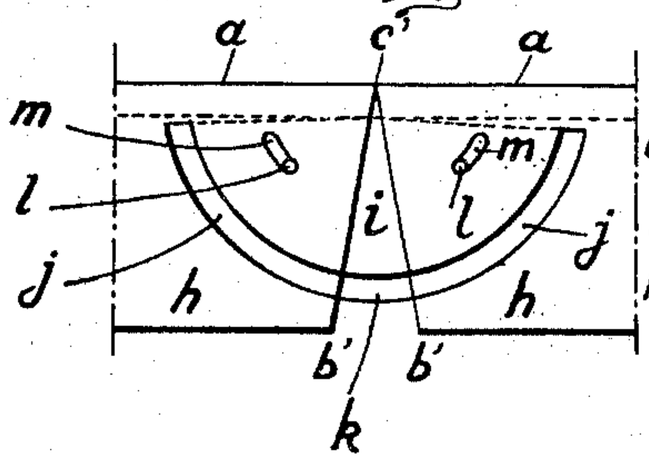


Fig. 21.

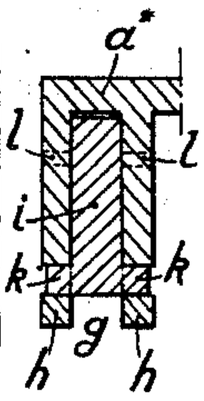


Fig. 22.

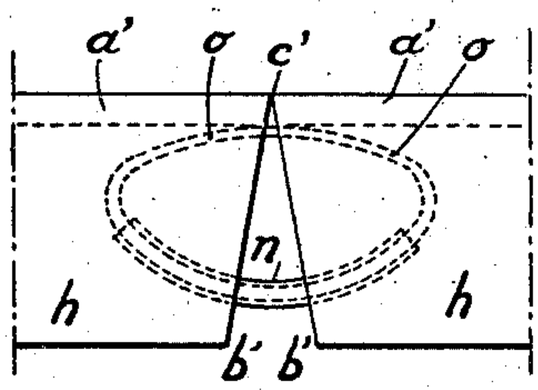


Fig. 23.

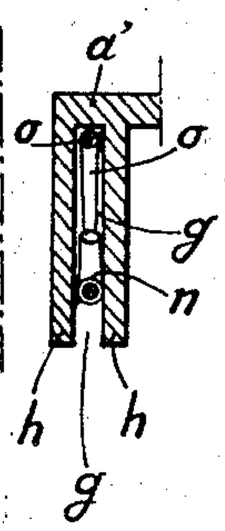
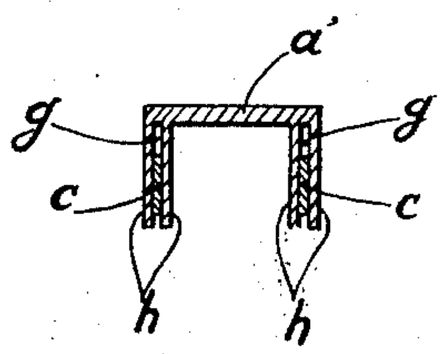


Fig. 24



Louis Rigollet
Serafino Zoppini
INVENTORS
By Otto Munn
his ATTORNEY.

Patented Oct. 7, 1930 1,777,679

UNITED STATES PATENT OFFICE

LOUIS RIGOLLET AND SERAFINO ZOPPINI, OF PARIS, FRANCE; SAID ZOPPINI ASSIGNOR TO SAID RIGOLLET

ARTICULATION FOR LINK JEWELS

Application filed March 18, 1925, Serial No. 16,426, and in France May 8, 1924.

Link-jewels such as chains, bracelets, necklaces and the like having adjacent visible outer faces usually ornamented or decorated as at present manufactured have the serious defect of gaping at the joints, i. e. their junction lines open owing to the said adjacent outer faces being constrained to take a certain degree of obliquity with respect to one another so as to permit the link-jewel (a link-bracelet for example) to tightly and accurately encompass the part of the human body intended to wear such jewel (the wrist in the case of a link-bracelet). Such gaping of the adjacent faces of the jewel is very conspicuous and it unpleasantly interrupts the æsthetic continuity of the lines, curves or decorations composing the ornaments or decorative effects provided on the said faces. It is due to the fact that the axis of articulation of said adjacent outer faces is situated at a certain distance below their level, the said distance being in proportion to the thickness of the links, to permit the latter to be socketed for the purpose of accommodating therein the bottom of gems adapted for adorning them.

The present invention has for its object to provide an improved articulation for link-jewels, said articulation being adapted for permitting their adjacent outer faces to remain closely joined irrespective of the varying obliquity which they must take to one another when for instance the jewel (a link-bracelet or a link-armlet for example) encompasses the wrist or the arm of the wearer. Such result is attained by arranging the axis of articulation of the outer visible faces of the link-jewel exactly flush with said outer faces and accurately on their junction line.

With this main object in view and such others as will incidentally appear hereafter, the invention comprises the novel construction and arrangement of parts that will now be described.

In the accompanying drawings:—

Figs. 1 to 4 illustrate in edge and plan views and straight and curved positions respectively a portion of a link-jewel as manufactured heretofore.

Figs. 5 to 8 illustrate in similar views and positions a portion of an improved link-jewel as manufactured now according to the present invention.

Figs. 9 to 16 illustrate the details of construction of two embodiments of the novel articulation according to the invention.

Figs. 17 to 19 illustrate on a larger scale the mounting of said articulation on two adjacent links.

Figs. 20 and 21 illustrate a further embodiment of this novel construction of articulation.

Figs. 22 and 23 illustrate a still further embodiment of this novel articulation.

Fig. 24 illustrates a detail of the said construction.

Like references designate like parts throughout the said figures.

In Figs. 1 to 4 is illustrated in edge and plan views respectively and in rectilinear and convex positions a length of a link-jewel as manufactured heretofore and comprising by way of example three adjacent links, the outer faces *a* of which are joined at *b* when in their rectilinear position, said links being articulated at *c*. A designates a decorative effect provided on said faces. As will be seen, as soon as the links are curved with respect to one another as shown in Figs. 3 and 4, their outer faces *a* cease to be joined at *b* since angles *d* (varying with the degree of curvature) having their apices at said articulations *c* occur between the contiguous faces of said links and cause them to gape, thus unpleasantly and conspicuously interrupting the æsthetic lines or curves of their outer decorative effects such as A or disturbing the proper position occupied by the gems thereon, as is shown in Fig. 4.

Such drawbacks are entirely obviated by the novel construction and arrangement of parts that will now be fully described. In Figs. 5 to 8 is illustrated in similar respective views and positions a portion of a link-jewel manufactured in accordance with the invention, and also comprising by way of example three adjacent links *a* having flat outer faces for carrying gems or the like and articulated to one another by means of special devices diagrammatically shown in dotted lines

at c and having their axis of articulation at c' flush with the outer visible flat faces of said links whereby the said faces are always joined at b irrespective of the link-jewel lying on the flat as shown in Figs. 5 and 6 or occupying a curved position as shown in Figs. 7 and 8. This novel arrangement of the articulations between the adjacent links eliminates their gaping and the concomitant inæsthetic disturbance of their decorative effects.

Several embodiments of the novel articulation diagrammatically shown in dotted lines at c will now be described in details with reference to Figs. 9 to 24 inclusive of the drawing.

According to the embodiment illustrated in Figs. 9 to 12, each articulation c comprises two companion elongated plates 1, 2 having their cooperating ends curve-bevelled shaped in opposite directions and formed respectively with curvilinear segmental ribs 3, 4 and grooves 4^a, 3^a, the ribs 3 on the plate 1 being adapted for engaging the corresponding grooves 3^a in the plate 2 whereas the ribs 4 on such latter plate are adapted for engaging the corresponding grooves 4^a in the plate 1, all such ribs and grooves being concentric with respect to a geometrical centre c' (not shown in Figs. 9 to 12) situated on the junction line b of the two adjacent links of the jewel, as clearly represented in Figs. 5 to 8. The ribs and grooves have a sliding fit so as to allow of the necessary angular displacement when the adjacent links require to take a certain obliquity to one another to properly conform to the corresponding part of the human body. Such angular displacement is limited by the provision of a narrow shoulder 5 on the middle part of the plate 2 (see Fig. 12) and by the provision of a comparatively wide notch 6 on the corresponding part of the plate 1 (see Fig. 9), said shoulder 5 engaging said notch 6 and thus limiting the angular displacement to its width. In Figs. 17 to 19 is shown the juxtaposition of the companion plates 1, 2 and their mounting with respect to the adjacent links of the jewel. Fig. 17 shows how said plates 1, 2 are imbricated and interconnected with their respective ribs and grooves in engagement. Each link a' is formed or provided on both sides (see Fig. 24) with a pair of slightly spaced lugs or flanges h, h at right angles to its outer visible face a, said pairs of lugs being terminally obliquely cut for providing between the lugs on the adjacent links invented V-shaped clearances having their apices flush with the junction line of the links. Moreover, the space g between said lugs is so dimensioned as to provide a sliding fit for the two juxtaposited companion plates 1, 2 as shown in Fig. 19. The plate 1 is soldered, welded or otherwise secured to the outer lug h on the one link a' whereas the plate 2 is similarly soldered, welded or otherwise secured to the inner lug h on the adjacent link a', or vice versa. As the ribs and grooves on the plates 1, 2 are concentric relatively to a geometrical centre c' situated on the junction line b of the two adjacent links and moreover have a sliding fit, they can be mutually displaced under a curving stress exerted upon the said links whereby the jewel is caused to take a convex shape for embracing the wrist or other part of the human body without gaping to any extent irrespective of its convexity. The latter is however limited by the width of the notch 6 on the plate 1, said width being so calculated as to suit practical requirements.

According to the modification illustrated in Figs. 13 to 16, the notch 6 in the plate 1 is done away with and replaced by an elongated opening 6^a (see Fig. 13) whereas the shoulder 5 on the plate 2 is also done away with and replaced by a pin 5^a (see Fig. 16) which can freely move in said opening 6^a and allows the two adjacent links to be spread apart over a distance equal to $b'—b'$ (see Fig. 18).

According to a further embodiment of the invention illustrated in Figs. 20 and 21, the articulation device c presents the shape of an inverted T and is located between the lugs h; the web portion i of such T is inserted into the groove g whereas its wing portions k are located in two arcuate grooves j both having their centre at c', on the junction line of the outer faces a, a of two adjacent links; these grooves are formed in each of the lugs h. In order to limit the degree of tilt that the said outer faces can take to one another, pins l are provided on the articulation c and are adapted to slide within slots m formed in the lugs h.

Lastly, according to a still further embodiment of the invention illustrated in Figs. 22 and 23, the articulation device c is constituted, on the one hand, by a curved tube n located within the groove g between the lugs h, soldered, welded or otherwise secured to the inner wall of one lug pertaining to one of the links and having its centre of curvature at c' and, on the other hand, by a wire o soldered, welded or otherwise secured to the inner wall of the opposite lug pertaining to the adjacent link, said wire being inserted into the curved tube n. Owing to this arrangement, the adjacent outer faces a, a of the contiguous links can freely pivot about the imaginary centre c' so as to take several mutual inclinations without producing any gap on their visible surface, whereby the continuity of the lines constituting their decorative effects is preserved.

It will be understood that such an articulation device c as has been described is duplicated on both sides of the links constituting the jewel and accommodated between each of the two pairs of lugs h formed or provided

on said sides of the links, as clearly shown in Fig. 24.

While the preferred embodiments of the invention have been described, it will be appreciated that numerous modifications could be made without departing from its spirit and scope. Thus other articulation devices *c* than the ones described and illustrated in the accompanying drawings might be devised, all such devices being characterized by this crucial feature that their axis of articulation *c'* would always be situated flush with the outer faces *a* of the links and on their junction line *b*.

What we claim and desire to secure by Letters Patent is:—

1. An articulation device for adjacent links having flat and rectangular outer gem-carrying faces of articles of jewelry such as bracelets, comprising a pair of flanges carried by each of the two longitudinal edge portions of each link, and angularly movable pairs of cooperating hinge members carried respectively by said adjacent links and located pairwise between their flanges, the rectilinear geometrical axis about which said pairs of hinge members can be angularly moved coinciding with the rectilinear meeting edges of the link outer faces.

2. An articulation device for adjacent links having flat and rectangular outer gem-carrying faces of articles of jewelry such as bracelets, comprising pairs of inward flanges formed integral with the longitudinal edge portions of each link and terminally beveled out, and pairs of relatively movable interengaging hinge plates carried by the links and located pairwise between each pair of their flanges, the rectilinear geometrical axis about which said pairs of hinge plates can be angularly moved coinciding with the rectilinear meeting edges of the link outer faces.

3. An articulation device for adjacent links having flat and rectangular outer gem-carrying faces of articles of jewelry such as bracelets, comprising pairs of inward flanges formed integral with the longitudinal edge portions of each link and terminally beveled out, and pairs of hinge plates having interengaging recesses and projections carried respectively by the adjacent links and located pairwise intermediate their respective pairs of flanges, the rectilinear geometrical axis about which said pairs of hinge plates can be angularly moved coinciding with the rectilinear meeting edges of the link outer faces.

4. An articulation device for adjacent links having flat and rectangular outer gem-carrying faces of articles of jewelry such as bracelets, comprising pairs of inward side flanges formed integral with the longitudinal edge portions of each link and terminally beveled out, pairs of hinge plates having interengaging recesses and projections carried respectively by the adjacent links and located pairwise intermediate their respective pairs of flanges, and means for limiting the angular movement of the hinge plates with respect to one another, the rectilinear geometrical axis about which said pairs of hinge plates can be moved angularly coinciding with the rectilinear meeting edges of the link outer faces.

5. An articulation device for adjacent links having flat and rectangular outer gem-carrying faces of articles of jewelry such as bracelets, comprising pairs of inwardly directed side flanges formed integral with the longitudinal edge portions of each link substantially at right angle thereto, and terminally beveled out, hinge plates each having alternately arranged segmental ribs and grooves, the ribs of one plate entering the grooves of the contiguous plate, said hinge plates being carried respectively by the adjacent links and located pairwise intermediate their respective pairs of flanges, said ribs and grooves having their centers of oscillation on the rectilinear meeting edges of the link outer faces.

6. An articulation device for adjacent links having flat and rectangular outer gem-carrying faces of articles of jewelry such as bracelets, comprising pairs of inwardly directed side flanges formed integral with the longitudinal edge portions of each link and terminally beveled out, hinge plates each having alternately arranged segmental ribs and grooves, the ribs of one plate entering the groove of the contiguous plate, said hinge plates being carried respectively by the adjacent links and located pairwise intermediate their respective pairs of flanges, said ribs and grooves having their centers of oscillation on the rectilinear meeting edges of the link outer faces, and means for limiting the angular movement of the hinge plates relatively to one another.

In testimony whereof we have signed our names to this specification.

LOUIS RIGOLLET.
SERAFINO ZOPPINI.