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H. DE CASTRO.

SELF COUPLING DEVICE FOR RAILWAY CARS.

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2 SHEETS—SHEET 2.

Fig. 3.

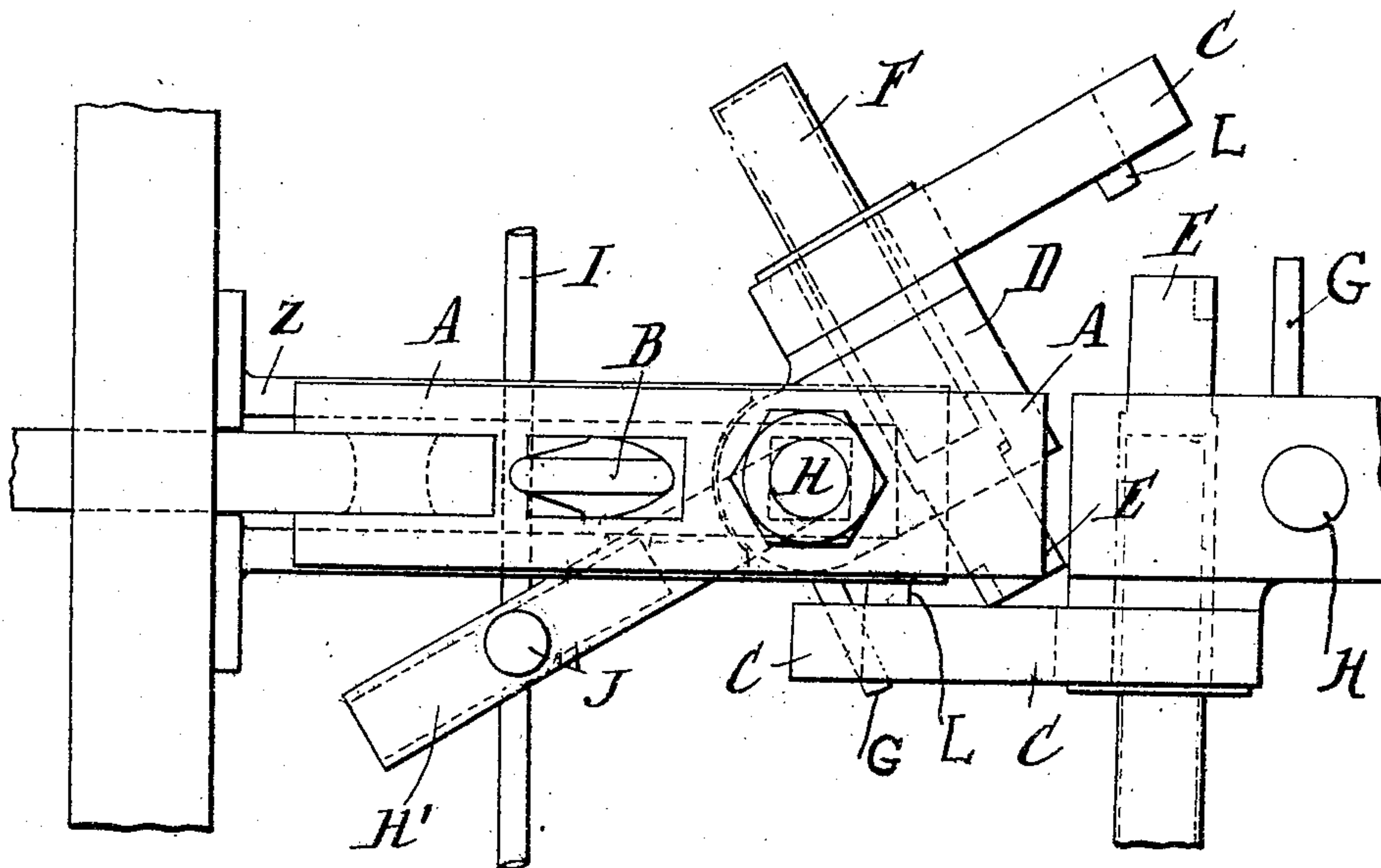
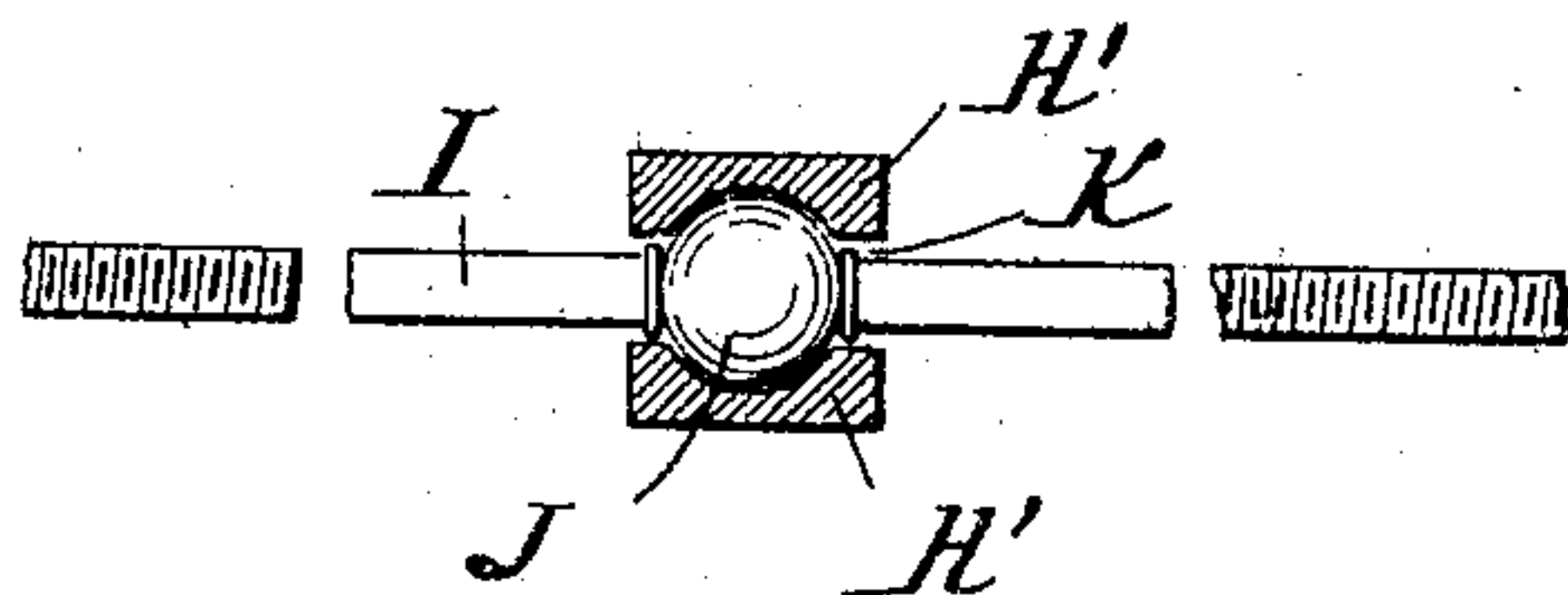


Fig. 4.



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SELF-COUPLING DEVICE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 782,724, dated February 14, 1905.

Application filed March 16, 1904. Serial No. 198,462.

To all whom it may concern:

Be it known that I, HENRIQUEZ DE CASTRO, a subject of the Queen of the Netherlands, residing at 152 Nieuwendyk, Amsterdam, Netherlands, have invented a certain new and useful Self-Coupling Device for Railway-Cars, of which the following is a specification.

This invention relates to improvements in automatic couplers which are particularly employed in connection with railway-cars; but the devices may be used for the purpose of retaining vehicles of different constructions in an assembled position.

The object of the invention is to improve the construction of a coupling mechanism which is provided with interlocking means which are adapted to be retained in a locked assembled position by means of an adjustable mechanism.

Another object of the invention is to improve the construction of a manually-operated mechanism for adjusting the interlocking mechanism which is employed in the construction of the coupler.

A still further object of the invention is to provide an automatic coupling mechanism with adjustable lever means for moving the interlocking members employed in the construction of the mechanism into and out of engagement with the coacting members thereof.

With these and other objects in view the invention consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the claims hereto appended.

In the drawings, Figure 1 is a view in side elevation of one of the coacting members employed in the construction of a completed coupler. Fig. 2 is a top plan view of the construction depicted in Fig. 1, part of which being shown in longitudinal section. Fig. 3 is a top plan view of one of the interlocking members shown in a disassembled position with its coacting member, said coacting member being illustrated in proper position for automatic engagement with the adjacent interlocking member. Fig. 4 is a vertical sectional view taken on line X Y, Fig. 1.

In carrying out the present invention I em-

ploy two interlocking members, each of which is constructed similarly and comprise in their construction a bracket Z, secured in a rigid position to the framework of a car, and upon said bracket Z there is secured, by means of hook B, a supporting-arm A, which is provided with a movable member C. The bracket Z comprises in its construction a slotted base, which terminates in two right-angle extensions, said extensions being the engaging portion of the bracket, which is secured to the car or vehicle.

The supporting-arm A is provided with a bifurcated outer end, within which is mounted the interlocking plate or frame C. Said plate or frame C is secured within said bifurcations by means of a removable bolt H, which is passed through approximately the central portion of the bifurcated end of supporting arm or member A. For the purpose of keying or positively securing interlocking plate or member C in a fixed position relative to member H said member H is provided with a squared body portion, which is adapted to be positioned within a similar opening formed upon the shoulder D of member C. Said shoulder D is approximately rectangular in shape and is provided with a locking mechanism, as hereinafter described, for the purpose of retaining member C in a proper assembled position with a similar member attached to an adjacent vehicle. The member H is also provided with an integral lever H', which projects at right angles therefrom. Said lever H' comprises in its construction a plurality of parallel integral members, which form a bifurcation upon the outer end thereof. Said parallel members of lever portion H' of the bolt H are provided with a concaved or recessed portion, within which is movably mounted an adjustable crank-shaft I, which is provided with an integral sphere J, adapted to engage the recessed portion of the bifurcated end of the lever. Said crank-shaft I is preferably journaled in suitable brackets projecting from the side of the vehicle. Said brackets may be constructed of any desired shape which will permit of the desired result to be obtained in the manual adjustment of the interlocking mechanism. Integrally secured to said crank-shaft I is preferably a suitable handle, which

is employed for manually causing movement of member I.

Upon referring to the drawings it will be apparent that the interlocking member, which is movably mounted upon the outer end of the supporting-arm, is adapted to be rotated in a horizontal plane in an arc of a circle.

The engaging plate C is provided with a removable casing upon the side thereof, which is adapted to inclose a cushioning member, preferably a spring F, for the purpose of providing means for causing longitudinal movement of a sliding bolt E, which is preferably mounted in a suitable recess formed in the shoulder D. Said bolt E is provided with a notched or cut-out portion, which is constructed for the purpose of receiving a sliding member G, which is mounted upon the shouldered portion D of the movable member C for the purpose of retaining the bolt within the recessed portion of shoulder D. Said pin or sliding member G comprises in its construction a slidable body portion, which is normally secured within a suitable recess formed in shoulder D, and said body portion is also formed with an integral extension projecting at right angles thereto. Upon referring to Fig. 2 it will be apparent from the disclosure therein that the portion of G which is retained in the recess or slot formed in D is in engagement with the cut-out portion formed on bolt E, thereby retaining said bolt within the movable interlocking member. When an object engages G and causes longitudinal movement thereof toward the car upon which the interlocking member is mounted, the said slidable member G will be disengaged from the cushion-bolt, thereby permitting of the potential energy stored in spring F to be exerted on bolt E for causing the projection thereof outside of the vertical plane in which the side of the shoulder D is formed. In the coupling of two cars together employing duplicate interlocking mechanisms constructed similarly to the present invention the object or member which is adapted to engage and actuate G for permitting of movement of bolt E is the outer vertical edge of the interlocking member C, which is mounted upon the opposite car. For the purpose of constructing an automatic coupler the coacting parts of which may be positioned on cars of different heights I employ an elongated opening or aperture, upon one of the walls of which is secured a guiding-plate L, which also materially assists in the prevention of longitudinal movement of the interlocking members when in an assembled position.

It will be obvious that the bolt E is of such dimension as to fill only a portion of the aperture formed upon C, thereby permitting of comparatively great variation in the horizontal plane in which each of the coöperating mechanisms is secured to its respective support.

In Fig. 3 a fragmentary view of the coact-

ing mechanism shows the position of the interlocking mechanism when the proper position for the automatic coupling of two adjacent cars together is obtained. The movable member on the adjacent car is shown at an angle to its supporting-arm, illustrating the position in which it is possible to move the interlocking member by means of the manually-adjusting mechanism. Owing to the construction of the manually-adjusting mechanism, the integral ball is adapted to move longitudinally in the recessed portion of the bifurcated end of lever H, according to the angle assumed by the movable structure of the interlocking mechanism to the supporting-arm A, upon which it is mounted.

When it is desired to connect two vehicles together which are provided with the interlocking mechanism heretofore described, the movable member is positioned by means of the manually-adjusting mechanism similar to that shown in Figs. 1 and 2, the sliding bolt 9 is moved to a position within the recess of shoulder D and locked therein, and when the other ends of members C engage the angular extension of the pin G, which is adapted to hold bolt E in a compressed position, said member G will be moved longitudinally, thereby releasing cushioned bolts E, permitting of the same to engage the apertured portion, which is provided with member L, formed upon movable plate C. When it is desired to engage the interlocking movable members, this can be obtained by the rotation of shaft I and subsequently causing pivotal movement of interlocking member C upon the bolt H, which is removably mounted upon the bifurcated extension of supporting member A.

While I have described in the foregoing description the detail construction of the supporting means for the longitudinally-movable interlocking member which is provided with auxiliary engaging means and also the manually-operated adjustable mechanism for said movable interlocking means, it will be obvious to one versed in that type of mechanisms to which this invention relates that certain alterations, modifications, and changes may be made without departing from the scope and spirit of the present invention, and I therefore reserve the right to make any departures which shall fairly fall within the spirit and scope of the present invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character described, the combination of a pair of supports, a longitudinally-movable member mounted upon each of said supports, said member having an opening formed near its outer end, a sliding member mounted upon said movable member, a lever secured to said movable member, and an adjustable shaft connected with said lever for causing movement thereof.

2. In a coupling mechanism, the combination of a plurality of interlocking devices, each of said devices comprising a bracket, a removable supporting-arm mounted upon said
5 bracket, a movable member mounted upon said supporting-arm, a cushioned bolt mounted upon said movable member and adapted to be projected beyond one side thereof, means for retaining said bolt entirely within said movable member, and a lever mechanism connected
10 with said movable member for actuating the same.

3. In a device of the character described, the combination of a pair of interlocking mechanisms, each of said mechanisms comprising a
15 supporting member, a movable interlocking plate secured upon said supporting member, a lever provided with a bifurcated end secured to said movable plate, fastening means carried by said plate, and a longitudinal, adjustable
20 shaft mounted within said bifurcated end of said lever.

4. A device of the character described, comprising a plurality of supporting members, a
25 lever member movably mounted upon each of said supporting members, interlocking means carried by said lever members, and longitudinally-adjustable means coacting with said lever members.

5. In a device of the character described, the combination of a pair of interlocking devices, each of said devices comprising a bracket, a
30 supporting-arm secured thereto, a movable plate provided with a shoulder mounted upon said supporting-arm, a cushioned sliding bolt mounted within a recess formed in said shoulder, a lever having concaved recesses formed
35 therein assembled with said plate, a shaft provided with a sphere mounted within said recessed portion of the lever, and means for rotating said shaft, thereby imparting motion to said lever and plate.
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6. In a device of the character described, the combination of a pair of interlocking devices,
45 each of said devices comprising a bracket, a removable supporting member mounted upon said bracket and having a bifurcated outer end, a movable plate having an elongated aperture formed near its outer edge and a shoulder secured integrally thereto mounted within the
50 bifurcated end of said supporting member, a bolt provided with a squared portion mounted upon the bifurcated end of said supporting member and engaging a similar recess formed within the shoulder of said plate, said bolt
55 provided with a bifurcated lever integrally secured thereto at right angles, grooves formed upon said bifurcated end, a recess formed within said shoulder, a cushioned bolt mounted within said recess, locking means for said
60

bolt, a shaft provided with a sphere mounted within said recessed portion of said lever, and means for rotating said shaft, thereby imparting motion to said bolt and movable plate.

7. A device of the character described, 65 comprising a plurality of interlocking devices, each of said devices comprising supporting means, a removable member provided with a lever extending at right angles therefrom mounted upon said supporting means, a movable, interlocking plate keyed upon said lever
70 member, said plate provided with an elongated aperture, a guide-plate secured within said apertured portion of the plate, said plate provided with a recessed shoulder, a bolt slidably mounted within said recessed portion of
75 said shoulder, cushioning means mounted upon said plate and normally engaging said bolt, a sliding member coacting with said bolt provided with an angular extension for locking
80 said bolt within said recess, and longitudinally-adjustable means connected with said lever for causing movement of said plate.

8. In a coupling mechanism, the combination with a support, of a pivotally-mounted
85 member carried by said support, movable, cushioned means carried by said member, lever means secured to said member, rotary means connected to said lever means and adapted to cause adjustment of said member, when
90 movement is imparted thereto, and an auxiliary coacting coupling mechanism assembled with said member.

9. A fastening mechanism, comprising a support, a lever member pivotally mounted
95 upon said support provided with an apertured extension, movable transverse means positioned upon said apertured extension, manually-operated means connected with said lever means for causing movement thereof, and an
100 auxiliary interlocking mechanism assembled therewith.

10. In a device of the character described, the combination of a plurality of interlocking
105 devices, lever means movably mounted upon said support, an extension secured to said support provided with cushioned means adapted to be projected beyond one of the sides of said extensions, and an adjustable shaft connected with said lever means for causing ad-
110 justment of the extension when movement is imparted to said shaft.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

HENRIQUEZ DE CASTRO.

Witnesses:

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C. PEREAUX.