(No Model.) 2 Sheets—Sheet 1.

G. RUNGE.

CAR COUPLING.

No. 494,030. Patented Mar. 21, 1893.

Fig 1

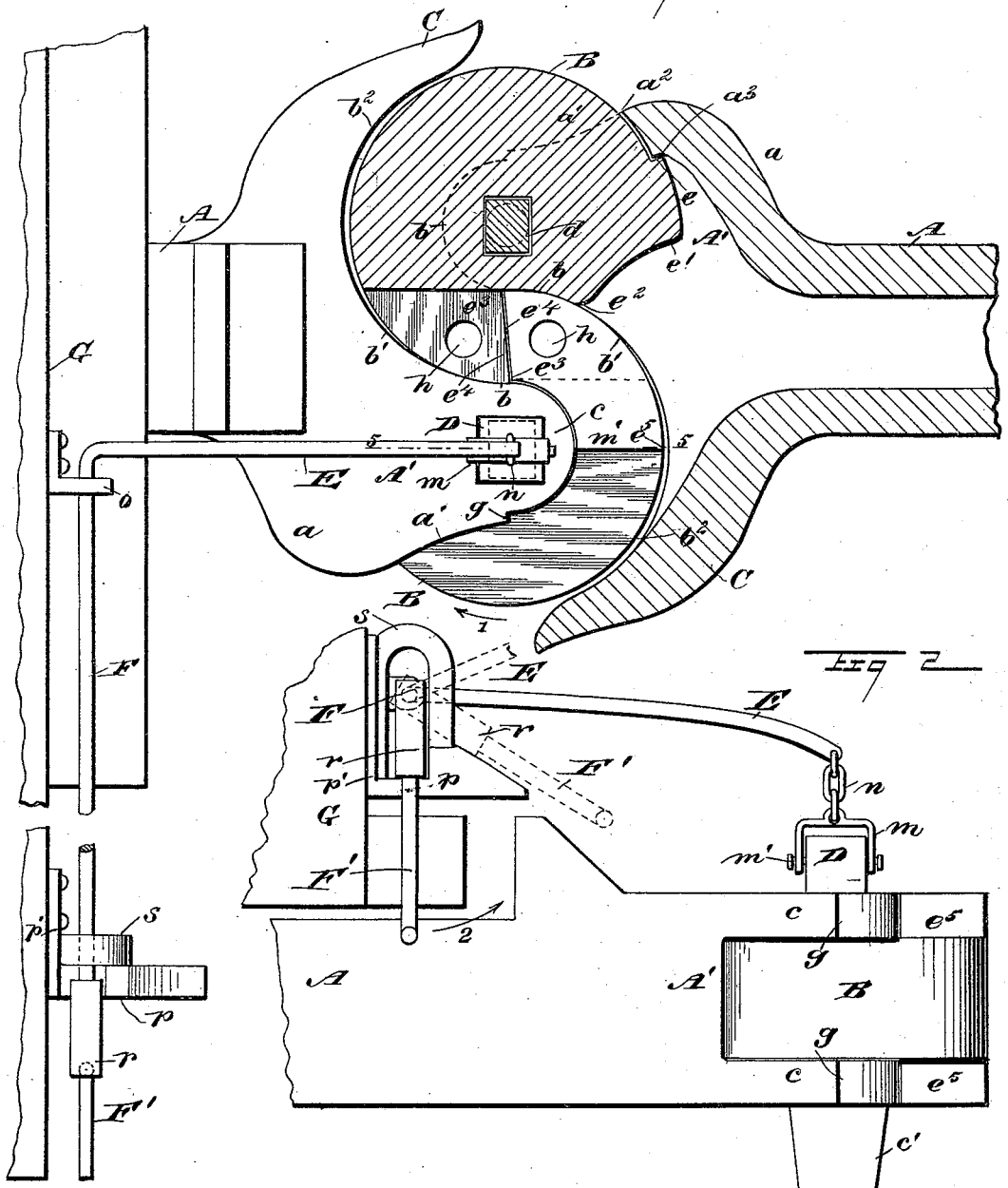

Fig 2

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3

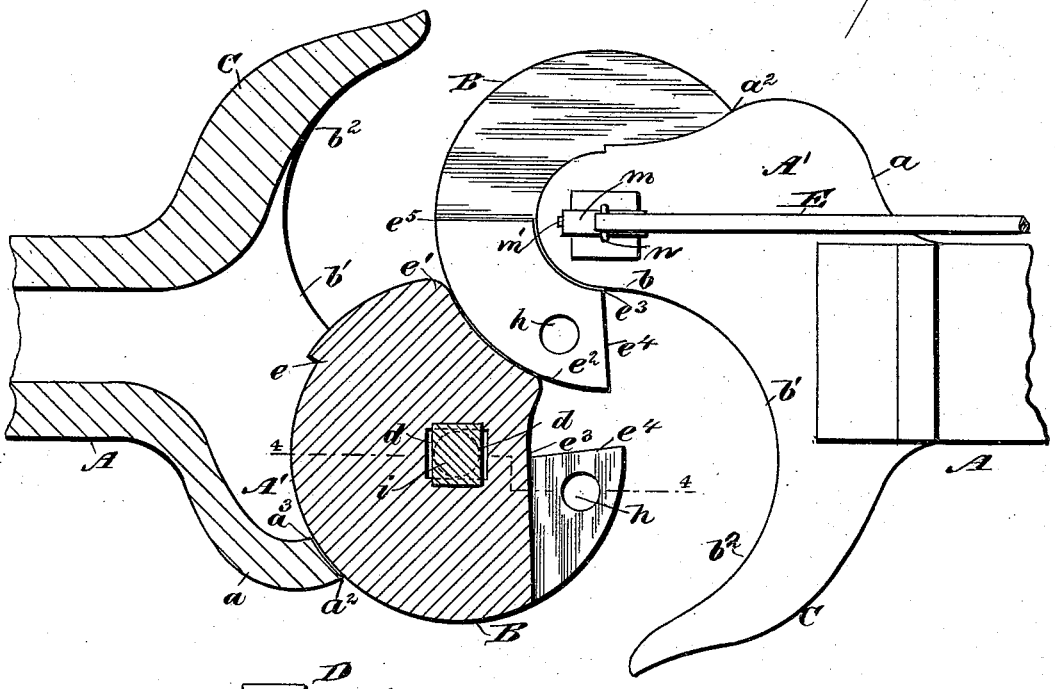


Fig. 4

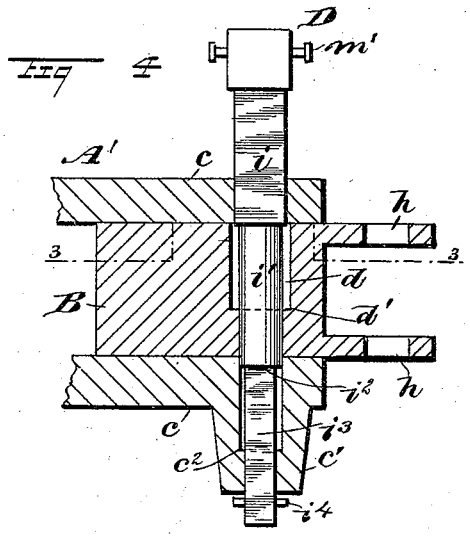
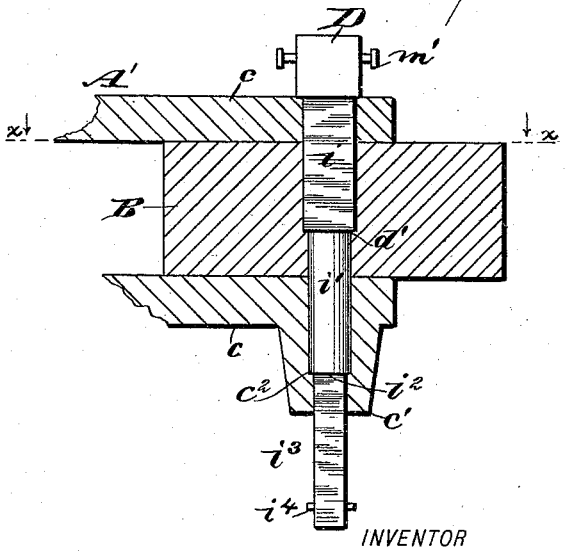


Fig. 5



WITNESSES:

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UNITED STATES PATENT OFFICE.

GUSTAV RUNGE, OF SIDNEY, NEBRASKA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 494,030, dated March 21, 1893.

Application filed June 1, 1892. Serial No. 435,164. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV RUNGE, of Sidney, in the county of Cheyenne and State of Nebraska, have invented a new and useful Car-Coupling, of which the following is a full, clear, and exact description.

My invention is an improvement in that class of side-latching, or "Janney," couplings in which each of the twin jaws is locked in engagement by a pivot bolt passing through it.

The object I have in view is to provide a more secure lock than in other couplings of this peculiar class.

To these ends, my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts, in all the figures.

Figure 1 is a plan view broken, of a car end portion, a coupling of the improved construction thereon, a pin lifting and holding device shown broken thereon, and a similar coupling broken away rearward and partly in horizontal section taken on the plane x—x in Fig. 5. Fig. 2 is a side view broken, of a car end portion, the pin lifting device on it shown in lowered condition by full lines and in elevated adjustment by dotted lines, the improved coupling broken and in position for attachment to the car body. Fig. 3 is a plan view of two of the improved car couplings broken away rearward, one in horizontal section on the line 3—3 in Fig. 4, and both couplings in position to effect a coupled connection by longitudinal movement. Fig. 4 is a longitudinal section of parts on the line 4—4 in Fig. 3; and Fig. 5 is a longitudinal sectional view on the line 5—5 in Fig. 1, with the pin in locked condition.

The drawhead A, of the improved car coupling, is rectangular in the body, which is sufficiently elongated to be effective in service, and is secured upon a car frame as usual, in a manner that will adapt it for cushioned resistance to sudden shock, that may result from starting the car, or the impact of two approaching cars; and as these features are not part of the invention and of any approved formation, they are omitted from the drawings. The front end of the drawhead A, is widened a proper degree to support a rotatable latch block B, at one side of a longitudinal center line, and produce a buffer limb C on the other side of said line. The projection A′ of the drawhead body A, is preferably curved outwardly and forwardly as at a, a', so as to produce a limb, the width of which is sufficient to provide necessary strength and is defined by the curved line b b' near the median line of the drawhead, which line b' is continued as an arc of a circle across the center of width of the drawhead, until it intersects the inner wall of the buffer limb C, at b^2. The projection A′, is slotted at its center of thickness, thereby forming two parallel flanges c, that embrace the hook block B, upon its flat parallel sides. A vertical perforation is produced in both of the flanges c, oppositely, the aperture through the upper flange being rectangular, and of greatest width transversely considered, as shown by dotted lines in Fig. 1. The lower flange c of the limb A′ is provided with a depending integral boss c' that is so relatively located, as to permit the circular perforation formed in said ear, by downward continuation to penetrate the center of the boss vertically; which perforation is in axial alignment with the rectangular perforation in the top flange c, as before indicated. The circular vertical orifice in the boss c' is extended downwardly to a point c^2, at a proper distance from the lower end of the boss, where said hole is changed in form to produce a squared aperture of reduced diameter that continues centrally through the depending piece c', as represented in Figs. 4 and 5. The slot between the flanges c c, is by preference extended rearward and laterally, intersecting a longitudinal hole in the drawhead body, said hollow spaces being so proportioned as to leave exterior walls of proper thickness; one side wall that joins the flanges c, terminates at a^2, and has this vertical face between said flanges cut to produce an arc of a circle of which the axis of the vertical perforations in the flanges named is the radial center.

As before mentioned, the latch block B has parallel sides, and is circular on the major portion of its periphery, a hole of rectangular formation at d, being central with regard to this circular edge portion of the latch-block,

said rectangular orifice being extended to d', and thence through the block below this four sided hole, in cylindrical form, the latter being of a diameter equal with the cylindric perforation of the boss c', so that when aligned these circular holes will coincide and in effect become one aperture, see Figs. 4 and 5. At e, a shoulder is produced on the periphery of the latch block B, and at e' the block is cut away so as to produce on entering the scallop on the edge from e' to e^2, the degree of its curvature being such as will allow said scallop to fit against the circular periphery of a similar latch block when two of the improved car couplings are made to approach. From the point e^2 on the edge of the latch block B, another re-entrant scallop is formed, which continues to the heel e^3, of a radial wall e^4, that extends to the circular edge of the block. An increased thickness is given to the latch block B, from the wall e^4 to a point e^5 on said block, the inner edge of which portion is inwardly curved to conform with the projecting circular edges of the flanges c, so that the latch block may be rotatably moved on a bolt that will retain the cylindric apertures in it and the boss c' coincident. At g, the semi-circular form given to the front edges of the parallel flanges c, terminates, a projecting shoulder being there formed on said flanges, whereon the shoulders at e^5, will impinge, which will limit the rotation of the latch block in the direction of the arrow 1, in Fig. 1. The thicker part of the latch block B, is slotted at the center between the top and bottom sides as shown in Fig. 4, to receive the end portion of an ordinary coupling link, so that a coupled attachment of a common drawhead of the link and pin type, may be effected with the latch block B, there being a vertical perforation h, made through the slotted part of the block to allow an ordinary cylindrical coupling pin to be inserted through the block and the common link. The oblong rectangular upper portion d of the hole formed in the center of the substantially circular latch block B, has the sides that are widest, located in planes that are parallel with the plane of the radial wall e^4, so that the rectangular aperture in the top flange c, of the drawhead limb A', will register with the similar portion d, of the hole in the latch block, when the latter is in closed adjustment as indicated in Fig. 1. The fulcrum bolt D which occupies the center hole in the latch block B, and serves to rotatively retain said block between the flanges c c, has the portion i of its body nearest to the head made rectangular in cross section, of a size that will adapt said portion to loosely fit within the four cornered hole in the top flange c, of the limb A', the length of this part of the bolt being about equal to the thickness of said flange, and the depth of the rectangular part d, of the aperture in the latch block taken together. Below the part i, on the fulcrum bolt D, said bolt is made cylindrical, as at i', the length of the rounded portion being equal to the combined depth of the cylindrical portions of the bolt receiving holes in the latch block B, and lower flange c, with that in its boss c' added, so that when the holes are aligned, the bolt D, may be inserted and will loosely fit therein. From the point i^2 on the fulcrum bolt D, the latter is squared to fit the square part of the aperture in the boss c', a sufficient length being given to said lower end portion i^3, to permit a proper longitudinal movement of the fulcrum bolt in the parts it engages, a cross pin i^4 that is inserted in a transverse perforation formed in the bolt body near its lower end, serving to prevent a complete removal of the latter from the limb A'. The laterally and forwardly projecting buffer limb C of the drawhead, is curved forwardly and outwardly as shown in Figs. 1 and 3, diverging a sufficient distance from the transverse center of the latter, to permit a latch block B, on a mating coupling to freely enter the space and impinge upon the curved wall of the drawhead and inner wall of the buffer limb when connection of two of the improved couplings is effected. A preferably rectangular head is formed on the fulcrum bolt D, which is connected loosely to the outer end of a lifting arm E, by a clevis loop m, pintle bolt m', and chain n. The arm E, is of such a length as will allow it to project from the car end wall toward and directly above the bolt D, as shown in Figs. 1 and 2, it being by preference bent at a right angle so as to produce a rock shaft F, that is journaled in bracket boxes o, which are affixed to the car end wall G. On the car wall G, a latch hook piece p, is secured with which the rectangular block r on the shaft F, may be made to interlock, there being a guard loop s, projected from the wall plate p' of the hook piece p, through which loop the rock shaft F, passes. A crank handle F', depends from the block r, and extends horizontally to permit a manipulation of the shaft F, arm E, and fulcrum bolt D. It will be seen, that when the rock shaft F is slid upwardly in the loop s, by an operator working the crank handle F', the locking block r, will be removed from interlocking connection with the latch hook p, so that a vibration of the crank handle in the direction of the arrow 2, in Fig. 2, will project its body outwardly, hence it may be imposed upon the top face of the latch hook and thus maintain the arm E, in elevated adjustment, which will elevate the fulcrum bolt D, into the position indicated in Fig. 4. When the bolt D, is lifted as stated, the rectangular part i, on it will be withdrawn from the portion d, of the perforation in the latch block B, so that the latter will be free to rotate upon the cylindrical part i' of the bolt body. If the latch block is rotatably moved so as to cause the rectangular hole d, in it, to correspond with the similar hole in the top flange c, on the drawhead limb A', its shoulder e, will impinge upon the hooking inner edge a^3 of the curved drawhead side wall a a^2, as shown in Fig. 1, which contact will limit the

rotation of the latching portion of the block B, and stop it at a proper point to allow the fulcrum bolt B, to drop through the aligned holes in it and the flanges *c*, as represented in Fig. 5. An opposite rotary movement of the latch block B, that will abut the shoulders e^5 thereon against the vertical shoulders *g*, of the flanges *c*, will dispose the rectangular aperture *d*, so that its greatest diameter will lie at right angles to the greatest diameter of the rectangular aperture in the top flange *c*. Hence the fulcrum bolt B, that has been raised to permit such a rotation, will have its rectangular body portion *i* seated on the side edges of the hole *d* in the block that define the least diameter of said aperture, and consequently, the bolt will be retained in elevated adjustment when the block is partly revolved so as to project the slotted portion of its body in advance, as shown by the block in section in Fig. 3.

When two cars having the improved couplings, are made to approach each other on a railroad track, and one coupling thereon has its latch block B, locked to the flanges *c*, by lowering it into the position shown in Fig. 5, the scalloped edge between the points *e'*, e^3 on the periphery of the latch block of the other coupling which is in open adjustment, will be in position to receive the impact of the fixed latch block and be rotatably moved thereby, until its latching limb of which e^4 is the face, has approached and impinged upon the corresponding latch limb face of the locked latch block, when the fulcrum bolt on the coupling that is to be secured, will drop by gravity, and thus effect an automatic coupling of the two drawheads A. It is only necessary to lock the fulcrum bolt B, in lowered adjustment with the latch hook *p*, and coacting devices as before explained, when the improved car coupling is to be coupled with an ordinary link and pin car coupling.

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

The combination, with a drawhead, having a lateral limb and an opposite slotted limb A' having a rectangular aperture above and a cylindrical one below it, and a depending boss *c'* having an aligning hole which is partly cylindric and partly square in cross section, of the flat latch block B, substantially circular on the periphery having a central perforation which is rectangular in one part and cylindrical in the other part, a latching radial shoulder thereon, and a fulcrum bolt adapted for a reciprocating vertical movement, which bolt has the two rectangular sections *i* i^3 and intermediate cylindrical section *i'* whereby it is fitted to the described rectangular and cylindrical apertures in the slotted limb and latch block, and thus locks within the two rectangular apertures when the latch block is in coupling position, substantially, as described.

GUSTAV RUNGE.

Witnesses:
GEORGE W. HEIST,
HENRY S. RAYNER.