

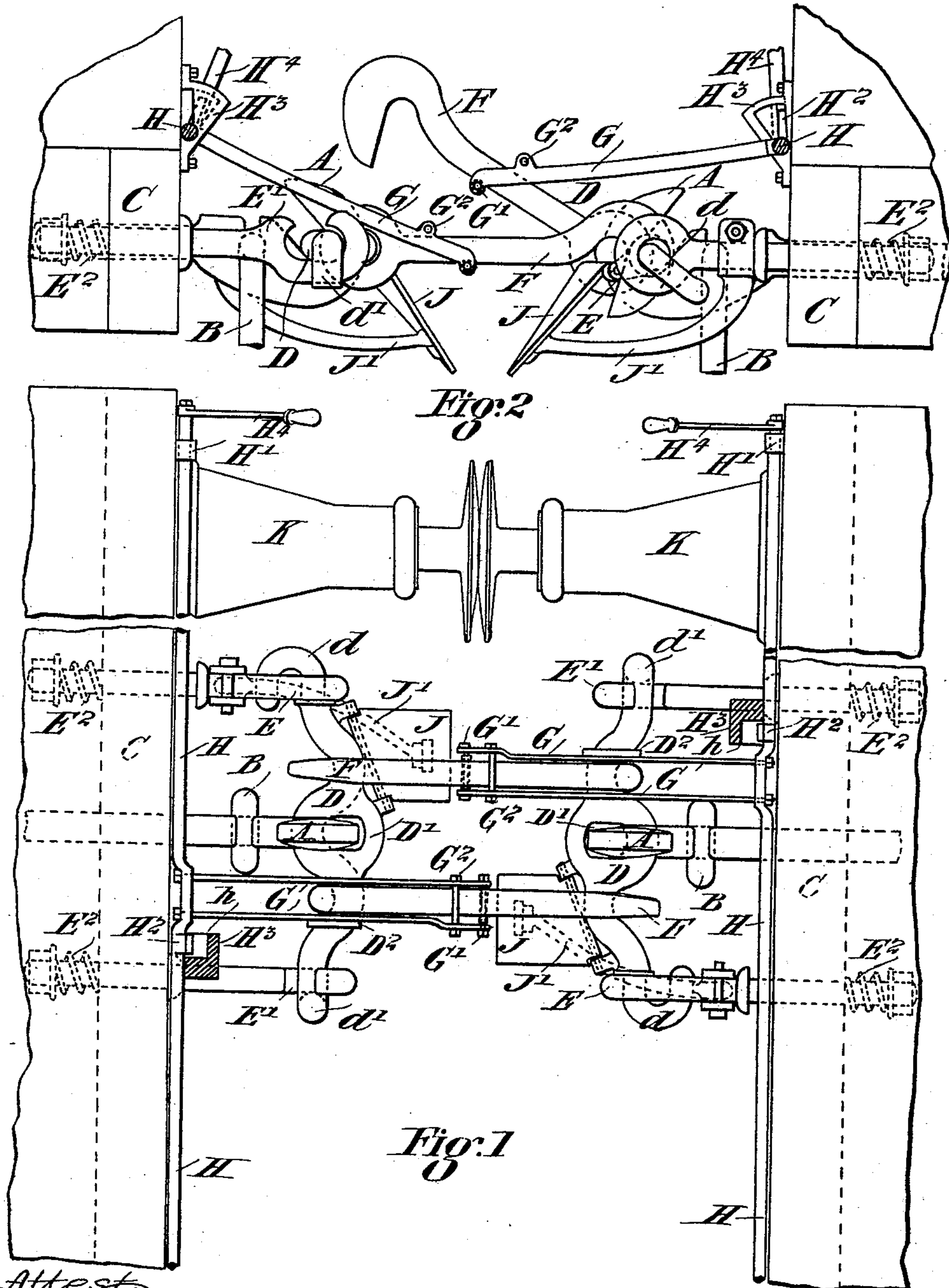
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2 Sheets—Sheet 1.

B. MAYER & W. H. MITCHELL.
CAR COUPLING.

No. 500,342.

Patented June 27, 1893.



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Matter Maedson
Max F. Allen

Inventors
Benjamin Mayer
Walter H. Mitchell
by Richards & Co.
Attys

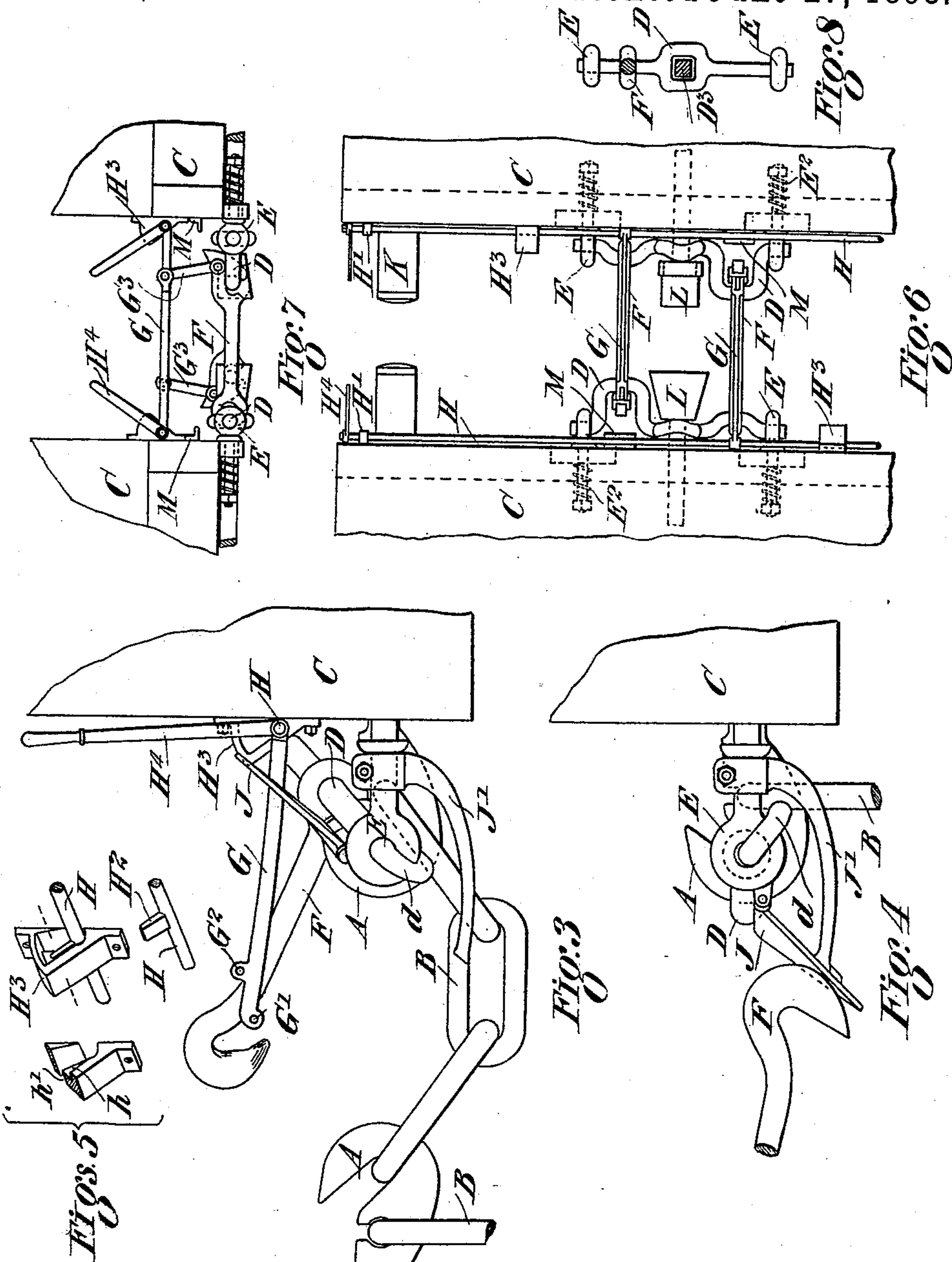
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UNITED STATES PATENT OFFICE.

BENJAMIN MAYER, OF NORTHCOTE, AND WALTER HENRY MITCHELL, OF
MEREDITH, VICTORIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 500,342, dated June 27, 1893.

Application filed November 3, 1892. Serial No. 450,865. (No model.)

To all whom it may concern:

Be it known that we, BENJAMIN MAYER, a resident of Northcote, and WALTER HENRY MITCHELL, a resident of Meredith, Victoria, subjects of Her Majesty the Queen of Great Britain, have invented certain new and useful Improvements in Couplings for Railway Carriages, Cars, or Trucks, of which the following is a specification.

10 This invention relates to improvements in couplings for use in securing together railway carriages, cars, trucks, or wagons to make up a train, and without the porter, guard, or attendant needing to go between the trucks
15 for the purpose of coupling.

The important feature of our invention is that it can be applied to railway carriages, trucks, locomotives, &c., without interfering with existing couplings; and it is so arranged
20 that should it be desired to couple a carriage or truck fitted up in accordance with our invention with a carriage or truck having either the existing hook and chain or draw head and link coupling, then either of such types of
25 coupling can be coupled as ordinarily, our coupling being simply left unused.

Our coupling is also so devised that the draw hook, draw bar, or draw head in use for existing couplings is retained by us as the
30 draw bar for our invention.

Our couplings are automatic in so far that when two carriages or trucks run close enough to one another and the coupling hooks are down, said hooks rise and couple with their
35 engaging bar, while to uncouple the hooks, the porter, guard, or attendant has simply to raise a lever at end of each carriage, car, or truck. The bar operated by such lever is furnished with a lock device, by means of
40 which the coupling hooks can be held up clear of the coupling bars, and thus carriages or trucks can run against one another without the couplings engaging.

A further feature of our invention is that
45 when trucks or wagons are coupled with it there is little or no play between the buffers, consequently the bumping and jarring of the vehicles are prevented.

Our invention is constructed as follows:—
50 Upon the draw hook or draw head or draw bar of ordinary couplings we support a strong

transverse bar, the ends of which are further supported by eye or hook bolts projecting from end of carriage or truck. Upon said transverse bar, at one side only, and between
55 the central draw hook or draw bar and said outer supporting bolt, we center the eye of a strong coupling hook, the transverse bar at other side of central draw hook or draw bar being the engaging part for a similar coupling
60 hook supported in a similar manner from another carriage, car, or truck. Each of said coupling hooks are engaged by a traverse or lifting arm projecting from a shaft supported in bearings secured upon end of carriage, car,
65 or truck, the shaft being provided at each end with a handle or lever, while about midway of its length we arrange a stepped lock device, by means of which the shaft can be retained at such a position as to hold up its at-
70 tached coupling hook clear of the engaging part of the opposite transverse coupling bar. To produce the automatic engaging action of the coupling we project downward and forward from each transverse engaging bar in
75 front of its said engaging part a slide or apron, so that when the coupling hooks are down and their fore ends contact with the said slides or aprons the hooks rise upward and
80 over the engaging part of transverse bar and automatically couple. Said transverse bar, for a coupling that is to be applied where the hook and chain couplings exist, is so constructed that it can be raised at one end to
85 lift it out of the draw hook to allow the coupling link to be placed on as ordinarily.

In order to fully explain our invention we will now describe it by a reference to the attached drawings, in which similar letters of reference indicate corresponding parts
90 throughout.

Figure 1 is a plan showing our coupling attached to a carriage, car, or truck, fitted with hook and chain couplings; Fig. 2, a side view of same, and with one of the coupling hooks
95 shown in its coupled position, and the other held up or uncoupled; Fig. 3, a view showing the end parts of two carriages, cars, or trucks, and showing them coupled with the ordinary hook and chain couplings, although one of the
100 trucks is also fitted with our invention; Fig. 4, an end view of one half of our coupling,

and intended to exhibit the use of the inclined slide or apron upon which the fore end of opposite coupling hook travels to cause it to rise and automatically couple. Fig. 5 is a detail of the lock device attached to the operating shaft; Fig. 6, a plan of our invention showing it applied to a car or carriage, the couplings of which are of the draw head and link type, and Fig. 7 side view of same. Fig. 8 is a front view of the transverse draw bar.

In Figs. 1 to 5, A are the ordinary draw hooks, having the chain coupling links B attached as shown.

C is the end part of carriage, car, or truck.

D is the transverse draw bar seated at its center within hook A, and with its ends supported by the eye bolt E and the square necked hook bolt E', both of which are supported from the frame of carriage or car, and have springs E² at their back ends as shown. Transverse bars D may either be constructed at its center with a slot or hole D' to receive the hook, or simply with a bend in it, as indicated by dotted lines in Fig. 1. One end of bar D has a hook d formed on it to engage the eye of bolt E, while the other end has a turned down finger d' to pass over outer edge of hook bolt E'.

F are the coupling hooks, one being centered by its eye at the position shown on each bar D, a loose collar D² secured by pointed set pins being arranged at the side of hook to retain it in position.

G are the traverse or lifting arms projecting from a shaft H supported in bearings H' at end of carriage, car, or truck. The fore end of said lifting arms have a cross bolt and thimble G' and a cross bolt G² on them, and between which bolts the stem of coupling hook F is loosely arranged. One arm of said lifting bar is widened, as shown in Fig. 1, to allow the coupling hook to cant sidewise when the engaging bar D is lifted from the draw hook, as shown in Fig. 3. Upon shaft H a tongue H² is formed and adapted to work within a stepped lock piece H³ also secured to end of carriage or truck. The purpose of lock piece is to determine the downward stroke or movement of the coupling hooks F by the tongue H² resting on the step h within the lock piece, and to hold the hook up when the tongue rests on a higher step h' also therein. At each end of shaft H is a hand lever H⁴, and such shaft is capable of lateral movement to allow of the tongue being placed at the requisite position within the lock piece H³, also said shaft H is inclined sufficient to cause the said tongue piece to gravitate to within the lock piece.

J is the inclined apron or guide hinged to bar D as shown, at the end where opposite hook engages it, said apron being retained in its position when down by resting on an arm or stay J' that is secured to a squared portion of the hook bolt E. K are buffers of ordinary construction.

In Figs. 6 and 7 our invention is shown ap-

plied to couplings of the draw head and link type, the bar D in this instance being either arranged behind the draw head L or behind a collar shrunk or secured thereon, the central part of bar D being formed with a hole D³ to allow of its being placed in such position. Said bar D has two cranks or sets in it, one to receive the eye and the other to receive the hook of the coupling hooks F. Bar D is supported at its ends by eye bolts E furnished with springs as before described. Coupling hooks F are centered as before described, but instead of being connected directly to lifting arms G a connecting link G³ is arranged between them as shown, while the shaft H is furnished with the tongue, lock device, and hand levers as before described.

M is a tappet or stud projecting from end of car or truck, its purpose being to lead the coupling hook upward should it happen to pass over the bar D. To provide for the radiation of the vehicles when running over curves we round the central part of bar D where it bears on the draw head, and thus an equal strain is always upon both coupling hooks.

To allow bar D of the coupling shown in Figs. 1 to 5 to be raised clear of the draw hook A it is necessary that provision be made for canting it upward at one end, as shown in Fig. 3, and thus leave the draw hook clear to receive the link of the ordinary couplings. In the coupling shown in Figs. 6 and 7 such a provision is unnecessary, as the link or connecting medium between the draw heads is capable of being placed in position without interfering with our coupling.

As before described, when our coupling hooks are let down by the hand lever to their lowest position, and the carriages, cars, or trucks are run toward one another the couplings then automatically engage by the fore end of the coupling hooks F (Figs. 1 to 5) being led upward by the aprons J until the hooks drop over and engage the bars D, while a similar action takes place with the coupling hooks F (Figs. 6 and 7), the tapered ends of which strike the bars D and thence travel upward until they drop over said bars D. Should the concussion be severe and the hooks be thrown past said bars D, then the fore end of hooks contact with the tappets M on end of cars or trucks, and which tappets cause the hooks to rise vertically and so prevent damage being done by the hooks running into end of carriage, car, or trucks. To uncouple, the guard, porter, or attendant simply lifts the hand lever of each carriage or truck, and by so doing lifts the coupling hook F off the bar D, then to retain the hooks up so that they will not couple the tongue of shaft H is passed over the upper step h' of the lock piece, the latter being done by the attendant or porter pushing endwise upon the hand lever. This provision is also necessary to allow the cars or trucks to be shunted upon the railway lines.

To provide a safety appliance in our couplings we have the eye bolts or hooks that support the ends of transverse draw bar D of such a strength that should the ordinary draw hook
 5 or draw head break then said bolts will wholly support the transverse draw bar D and take the load. Such safety appliance is stronger than the safety chains now commonly used.

In applying our invention to railway car-
 10 riages or trucks having the hook and chain couplings care must be taken to leave the distance between fore end of coupling hook and the frame of carriage greater than the combined strokes of any two meeting buffers, so
 15 as to prevent the fore ends of the coupling hooks touching the carriages should the buffers be driven home.

Having now particularly described and ascertained the nature of our said invention
 20 and in what manner the same is to be performed, we declare that what we claim is—

1. In combination, the draw hook or head of ordinary form, an independent transverse bar having at its central portion a bearing
 25 adapting the said bar to be fitted about the said draw hook, head or bar and a coupling hook carried by said transverse bar, substantially as described.

2. In combination, the draw bar hook or
 30 head, the transverse bar D, having a bearing at its center fitted to the said draw bar and cranked lateral extensions from said central bearing and the hooks engaging said cranked extensions, substantially as described.

35 3. In combination the draw hook, the transverse bar D, having a central bearing adapted thereto, the bearings for the ends of the trans-

verse bar whereby said bar may be turned to disengage its central part from the draw hook; and the coupling hook to engage the said bar, 40 substantially as described.

4. In couplings for railway carriages, cars, or trucks, the combination with the draw hook or draw bar or draw head thereof of a transverse bar D, eye and hook bolts E and E', 45 coupling hook F, lifting arm G, with its cross bolts G' and G², the shaft H and operating handles H⁴, substantially as herein described.

5. In couplings for railway carriages, cars, or trucks, the combination with the draw bar 50 or draw head thereof of a cranked transverse bar D having a hole at its center to receive said draw bar, coupling hook F, eye bolts E, and the gear for lifting the coupling hook, substantially as herein described. 55

6. In couplings for railway carriages, cars, or trucks, the combination with the transverse draw bar D of the inclined slide or apron J supported and arranged substantially as here- 60 in described.

7. In couplings for railway carriages, cars, or trucks, the combination of the operating shaft H having lifting arm G and the tongue piece H² attached, with the stepped lock piece H³ constructed and arranged substantially as 65 herein described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

BENJAMIN MAYER.

WALTER HY. MITCHELL.

Witnesses:

ROBERT BODYCOMB, Junr.,
 BEDLINGTON BODYCOMB.