

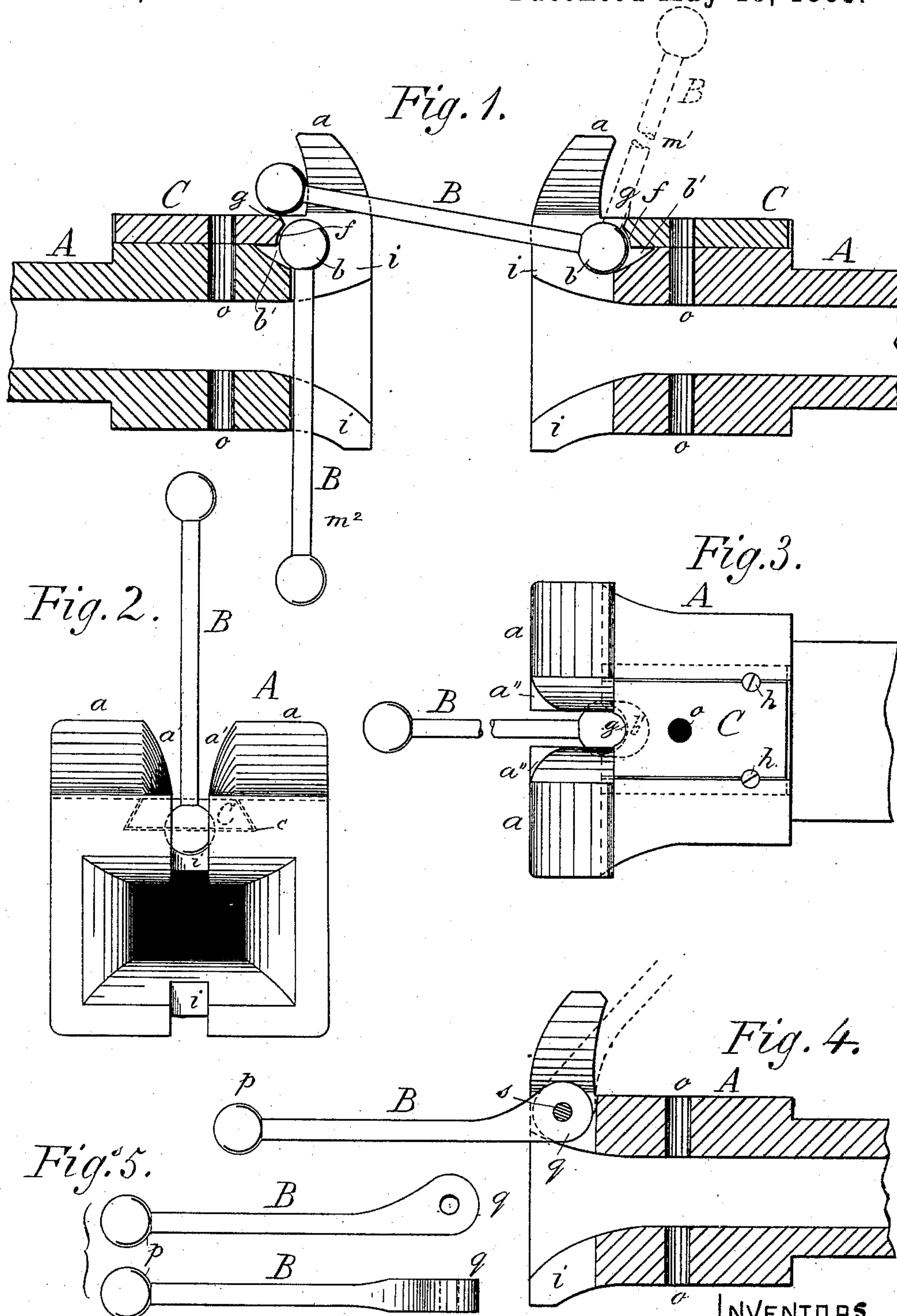
(No Model.)

P. F. DUROSS & G. SUTTON.

CAR COUPLING.

No. 317,981.

Patented May 19, 1885.



WITNESSES: *W. M. Lowe*
A. J. Bayless

INVENTORS.
Patrick F. Duross,
George Sutton,
BY *Lucas J. Storer,* ATTORNEY

UNITED STATES PATENT OFFICE.

PATRICK F. DUROSS AND GEORGE SUTTON, OF LONG ISLAND CITY, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 317,981, dated May 19, 1885.

Application filed September 29, 1884. (No model.)

To all whom it may concern:

Be it known that we, PATRICK F. DUROSS and GEORGE SUTTON, citizens of the United States of North America, and residents of Long Island City, county of Queens, State of New York, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

The object of this invention is to provide an automatic car-coupling by the use of which the dangers to life and limb from coupling cars by hand may be avoided.

The invention consists of a coupling-bar having spheroidal or ball ends, in combination with a draw-head constructed with a spheroidal or cup-shaped socket in its top to receive and permanently hold one end of the coupling-bar, which ball and socket constitute a universal joint that permits free movement of the bar. The draw-head in this combination is also provided with an upward-projecting fork or horns for the engagement of the free end of an opposite coupling-bar, and with a vertical face-groove for the reception and protection of the coupling-bar when the latter is not in use nor in operative position, and is also provided with the ordinary open mouth and throat for the use of the ordinary coupling-link, if desired.

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

Figure 1 is a longitudinal sectional elevation showing two of our improved coupling devices coupled together. Fig. 2 is a front elevation of one of the same. Fig. 3 is a plan of the same. Fig. 4 is a side elevation of a modification of our coupling device. Fig. 5 shows a plan and side elevation of our modified coupling-bar.

In the drawings, A represents our improved draw-head, which differs from the common type of draw-head used with coupling-link in that it is constructed with a fork or horns, *a a*, flush with its face and projecting upward with a slight rearward curve, and said horns are beveled off on their opposing faces and forward edges, as shown at *a' a''*, respectively, to permit the more ready introduction of the shank of the coupling-bar between them, and to per-

mit of its sufficient lateral movement when the cars are running on curves.

At the base of the horns, and at the inner end of the passage or space between them, a spheroidal or cup-shaped socket, *b*, is formed for the reception of an end of the improved coupling-bar B. This socket *b* has a rearward shallow extension or approach, *b'*, made to permit the easy introduction into said socket of a head of a coupling-bar, B.

A sliding cap, C, is fitted in a corresponding mortise, *c*, formed in the top of the draw-head in such a manner that it can be moved forward and rearward over the socket *b*. The forward end of this cap C is centrally undercut in a curve, as shown at *f*, to fit over and upon the ball end of a coupling-bar, B, as shown in Fig. 1, and prevent its disengagement from socket *b*, and said cap has also a semicircular recess or mortise, *g*, made in its forward end, to permit the coupling-bar to be turned up in operative position, and to assist in holding it there, as indicated in dotted lines, Fig. 1. When in place, this cap C is held by screws *h*, as shown.

The face of the draw-head A is vertically grooved, as shown at *i*, to permit the coupling-bar B to hang down when not operating nor in operative position, and to protect it from collision with an opposite draw-head.

When the device is in operative position and two cars are to be coupled together, one coupling-bar B is turned up in position, (shown in dotted lines at *m'*, Fig. 1,) and the coupling-bar B of the opposite car is permitted to hang down, as shown in dotted lines at *m''*, Fig. 1. Then when the draw-heads collide the shock of the collision will cause the erect coupling-bar of the one draw-head to be thrown forward and down with its shank between the horns of the opposite draw-head and its free end engaged behind and against said horns at their bases and resting on cap C, thereby coupling the two cars automatically, or without the aid of hands.

The rearward curves of the said horns *a a* are designed to prevent the said free end of the coupling-bar from being jolted upward out of engagement therewith.

A vertical opening, *o*, extends down through each cap and draw-head for the use of a coup-

ling-pin when it is desired to use the ordinary coupling-link.

In our modified device shown in Figs. 4 and 5 the coupling-bar B has but one ball or spherical end, as shown at *p*, while the other end, which is designed to be permanently fixed to the draw-head, is simply made thicker than the shank, and has a transverse pin-hole, *q*, made through it. A corresponding pin-hole is also made from side to side through the horns of the draw-head, at the base thereof, and the modified coupling-bar is held in place by a pin, *s*, passing through the pin-holes aforesaid. In this case the coupling-bar is set in operative position, as shown in dotted lines, Fig. 4, and operates to couple in the same manner as does the bar shown in the previous figures; and in this case, also, the opposite rear edges of the horns, as well as the opposite front edges thereof, are designed to be beveled off to permit free lateral movement of the coupling-bar.

We are aware of the patents of A. K. Owen, Hien and Koch, and J. W. Alexander, and make no claim to their special devices.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A car-coupling device constructed substantially as herein shown and described, consisting of a coupling-bar having spheroidal or ball ends, in combination with a draw-head constructed with a spheroidal socket in its top adapted to receive one end of the coupling-bar, with a device for holding an end of the bar in said socket, and with upward-projecting fork or horns designed for holding the free end of an opposite coupling-bar in coupling position on the top of the draw-head, as set forth.

2. The combination, with a draw-head, as A, provided with horns, as *a a*, and face-groove, as *i*, of a spheroidal-ended coupling-bar, as B, substantially as herein shown and described.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of two witnesses, this 19th day of September, 1884.

PATRICK F. DUROSS.
GEORGE SUTTON.

Witnesses:

C. E. REICH,
HUGH QUINN.