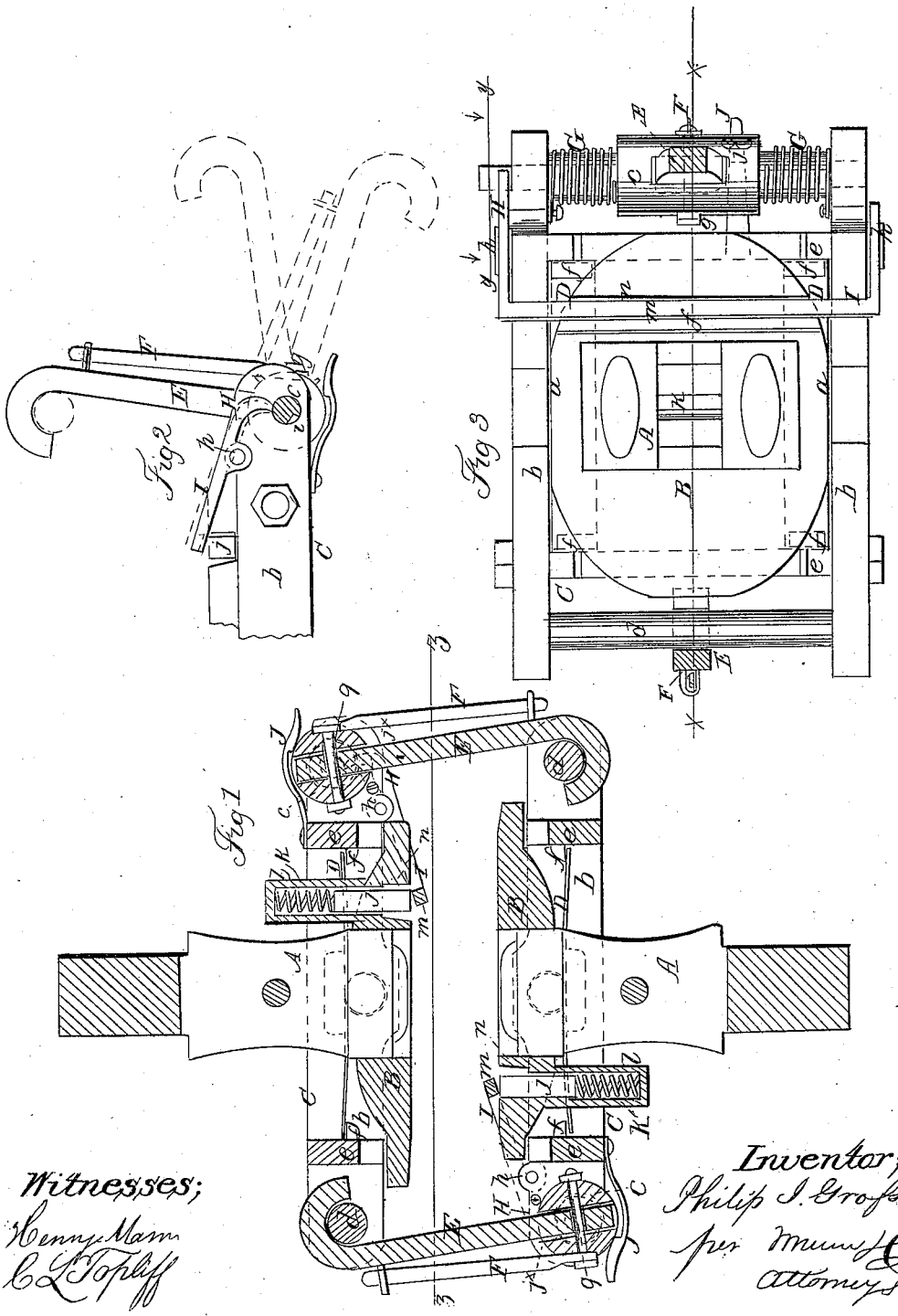
P. I. GROSS.

Car Coupling.

No. 46,465. Patented Feb. 21, 1865.



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UNITED STATES PATENT OFFICE.

PHILIP I. GROSS, OF MANHEIM CENTRE, NEW YORK.

IMPROVED CAR-COUPLING.

Specification forming part of Letters Patent No. **46,465**, dated February 21, 1865.

To all whom it may concern:

Be it known that I, PHILIP I. GROSS, of Manheim Centre, in the county of Herkimer and State of New York, have invented a new and Improved Car-Coupling; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a horizontal section of my invention, taken in the line *x x*, Fig. 3. Fig. 2 is an inverted plan of the same, partly in section, as indicated by the line *y y*, Fig. 3; Fig. 3, a vertical section of the same, taken in the line *z z*, Fig. 1.

Similar letters of reference indicate like parts.

This invention relates to a new and improved car-coupling of that class which are commonly termed "self-coupling" or "self-acting," in consequence of coupling or engaging themselves when the draw-heads of two adjoining cars come in contact.

The object of the invention is to obtain a coupling of the class specified, which will operate with certainty as regards the coupling or connecting of the two draw-heads, and which will admit of being readily uncoupled when required, and also rendered capable of not coupling when necessary, as in case of backing cars when it is not desired to connect them.

A A represent the draw-heads of two adjoining cars, the front parts of which are provided with head-plates B B of requisite dimensions. To each plate B there is attached, by pivots *a a*, a rectangular frame, C, composed of an upper and lower bar, *b*, through which the pivots *a* pass centrally, a vertical arbor, *c*, which connects the bars *b* at one end, and a cylindrical rod, *d*, which connects the bars *b* at their opposite ends. The arbors *c* are allowed to turn freely in the bars *b b*, but the rods *d* are fixed. The bars *b b* are also connected by vertical bars *e e*. The pivots *a a* are firmly attached to or cast with the head-plates B B of the draw-heads the bars *b* being allowed to work or turn freely thereon, but being retained or held in position by springs D, which are secured to the rear sides of the head-plates B B, and have their ends bearing against projections *f*, attached to the vertical bars *e e*, as shown in Fig. 1. These springs D admit of a yielding movement of the frames C, on the pivots *a*, said movement being limited by the bars *e e*, which are behind the heads of the head-plates B B, as will be fully understood by referring to Fig. 1.

The arbors *c* have each a hook, E, attached by a pivot-bolt, *g*, and these hooks have springs F connected to them to hold them in a horizontal position, and still allow them to yield or give vertically to a certain extent, the back ends of the springs being attached to the arbors *c* by the bolts *g*. (See more particularly Fig. 1.) The arbors *c* have coil or spiral springs G upon them near each end, and these springs have a tendency to keep the hooks E thrown inward toward the centers of the head-plates B. The hooks, however, are held out nearly in line with the frames C by means of pawls H, which are at one end of the frames I, the latter being pivoted to the frames C, as shown at *h*, and the pawls H fitting in the notches *i* in the upper parts of the arbors *c*.

The frames I have pins *j* pressed against them by spiral springs *k*, which are placed in sockets *l*, attached to the head-plates B, said springs serving to keep the pawls H engaged with the arbors, and also to keep the vertical parts *m* of the frames I out in front of the head-plates B, as shown clearly by red dotted lines in Fig. 2. When the hooks E of the two frames I I are thus held back, the parts are in proper position for coupling, and when the head-plates B of the two draw-heads come in contact the parts *m*, of the frames I, the pawls H will be thrown out from the notches *i* in the arbors *c*, and the coil springs G on the arbors will throw the hooks E over the rods *d*, the hook of one draw-head engaging with the rod *d* of the other, and vice versa. (See Fig. 1.)

In uncoupling the device, the head-plates B B of the two draw-heads will be in contact, and the hooks E free to turn off from the rods *d*. A person then turns the hooks outward until the pawls H catch into the notches *i* of the arbors, and the parts will then be in proper position for coupling again.

At any time when it is necessary to adjust the hooks E so that they cannot engage with the rods *d*, the former are retained or held

back by hooks J, which are attached to the bars *e* and catch over projections $j^{\times}$ on the arbors *c*, as shown in red outline in Fig. 2.

Thus by this simple arrangement I obtain a self-acting car-coupling, which will operate with certainty, cannot become casually detached, and which will admit of the cars swinging or swaying vertically or laterally in passing over irregularities of the road without at all affecting any of the parts of the coupling. In backing cars the parts *m* of the frames I are pressed back into recesses *n* in the head-plates B, so as to be entirely out of the way.

I would remark that each draw-head A may be provided with a vertical pin, K, to admit of the use of the ordinary link or shackle, should it be necessary at any time, and also that my invention will operate perfectly when the platforms of two adjoining cars vary considerably in height.

I claim as new and desire to secure by Letters Patent—

The frames C, fitted on pivots at the front of the draw-bars A, and provided each with a hook, E, attached to an arbor, *c*, and also provided with a vertical rod, *d*, in connection with the pawls H, attached to the pivoted frames I, all arranged in connection with springs to operate in the manner substantially as and for the purpose herein set forth.

PHILIP I. GROSS.

Witnesses:
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