

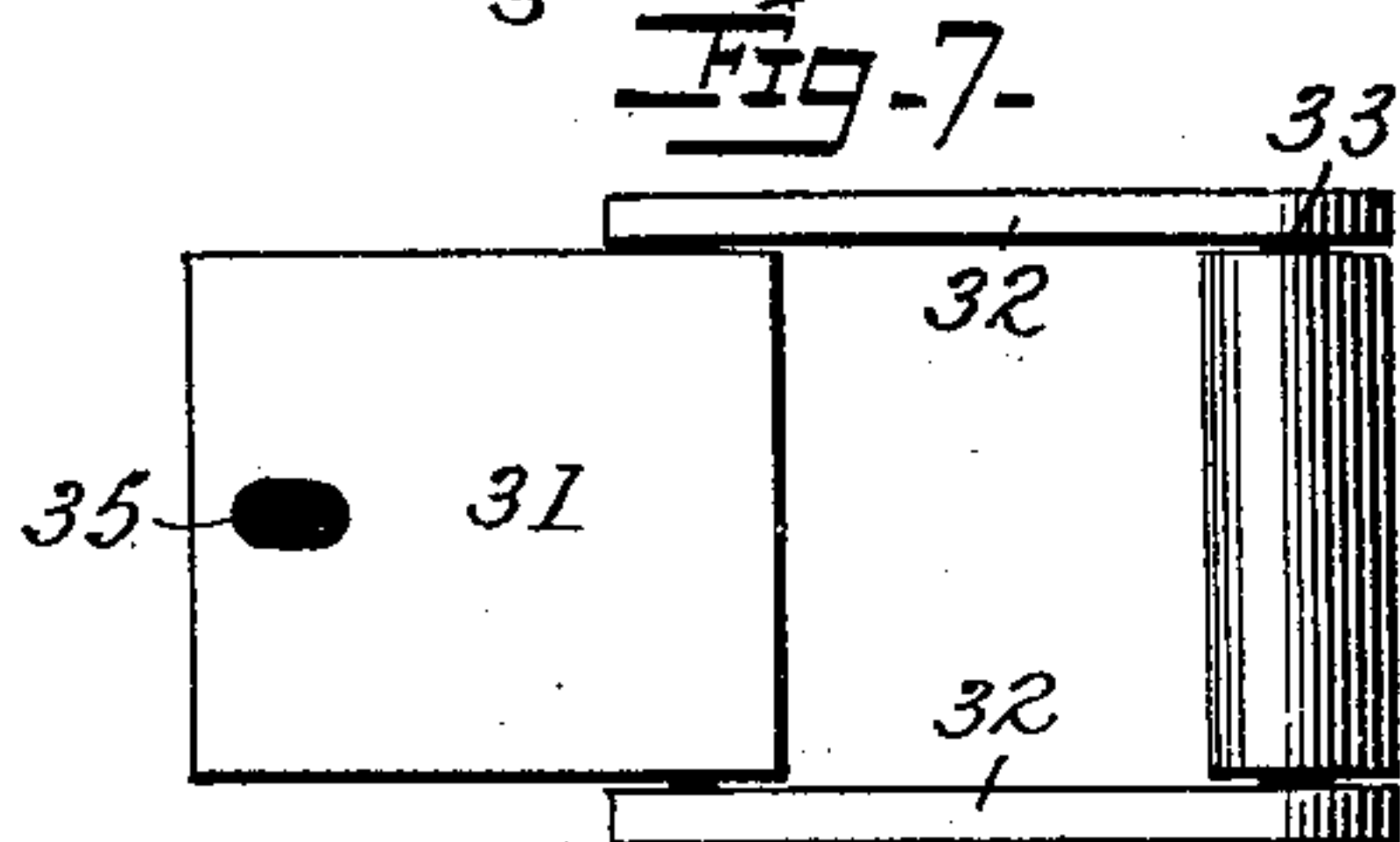
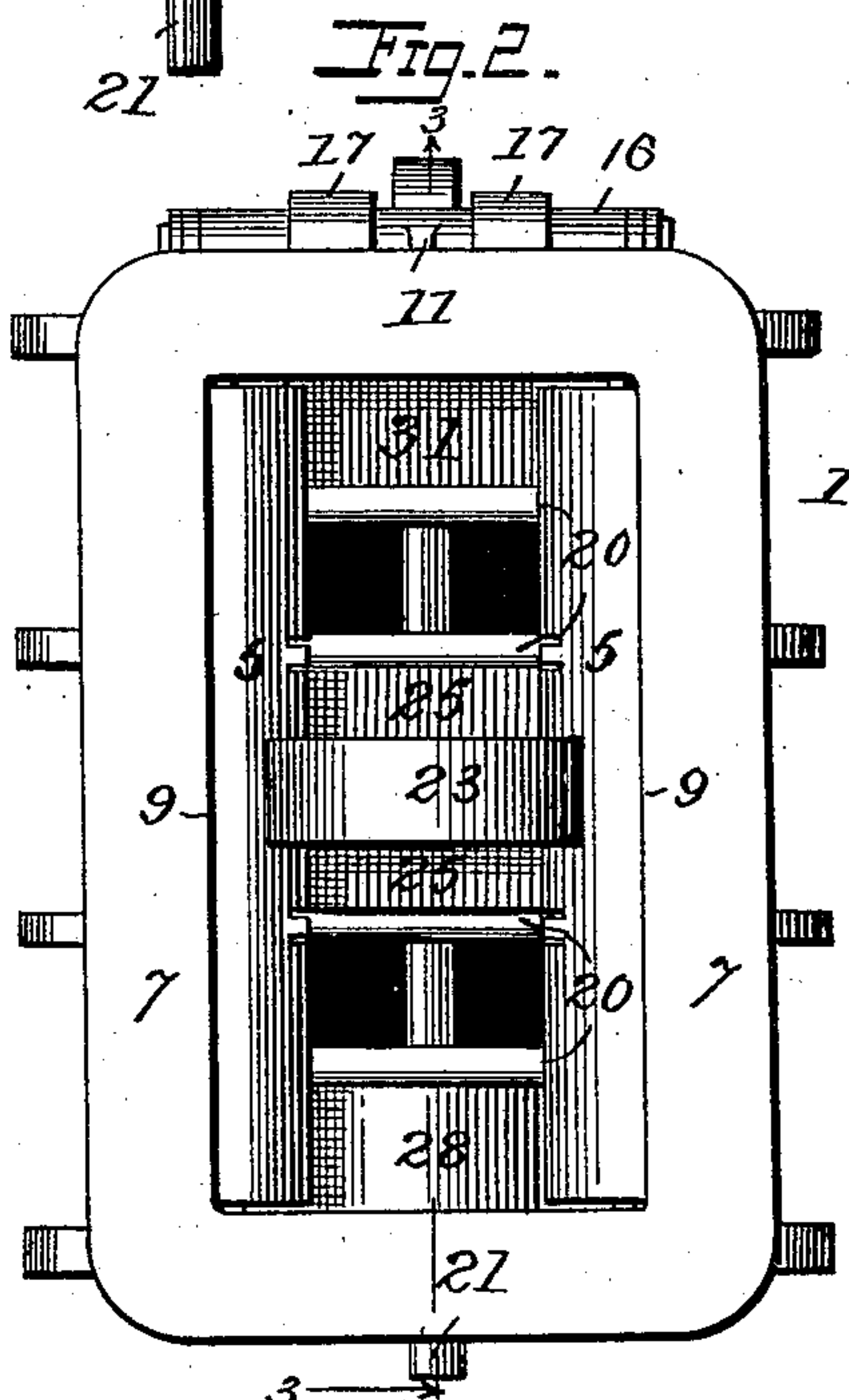
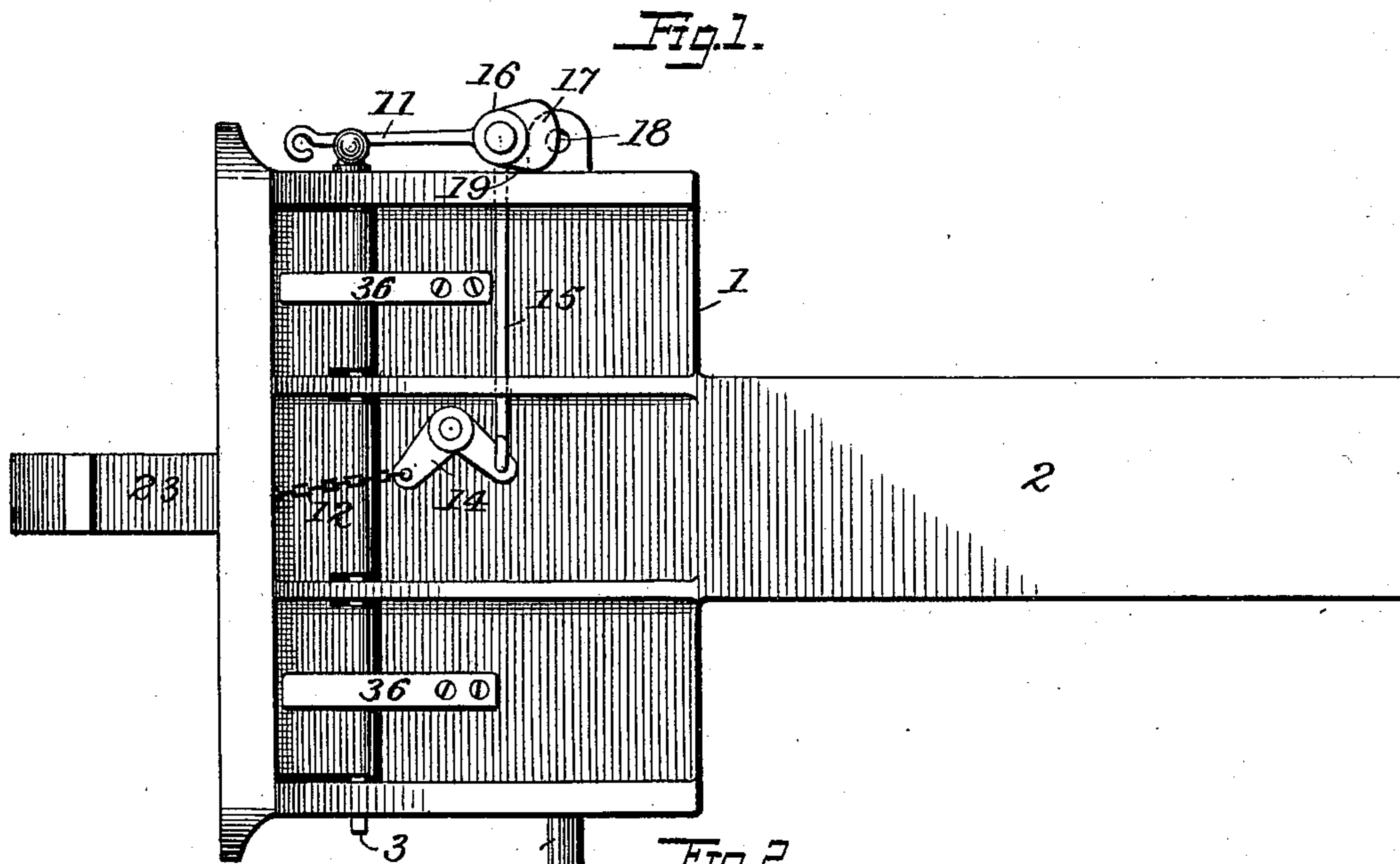
(No Model.)

2 Sheets—Sheet 1.

G. B. LEONARD.
CAR COUPLING.

No. 528,951.

Patented Nov. 13, 1894.



Witnesses
J. Hinkel
Lulu White

Inventor
G. B. Leonard
By *J. Watson*
Attorney

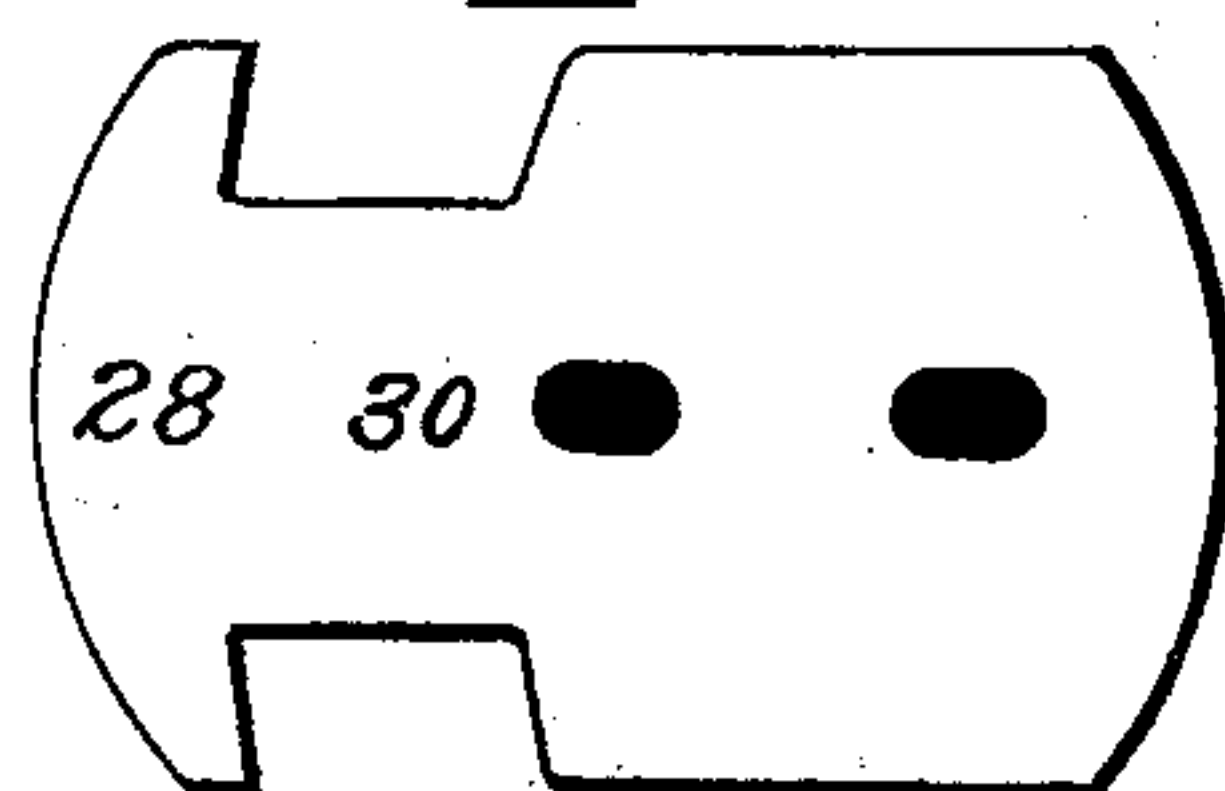
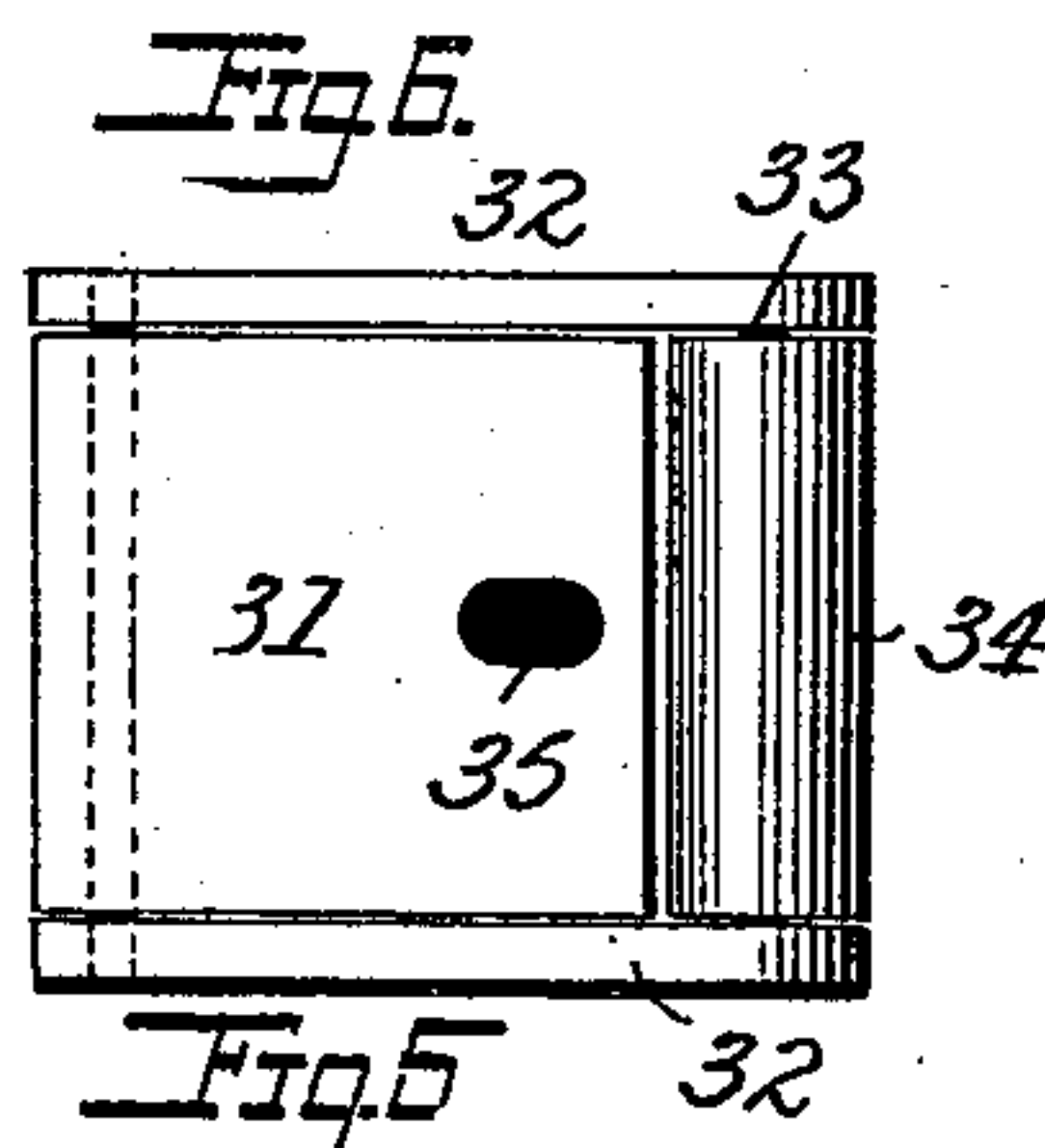
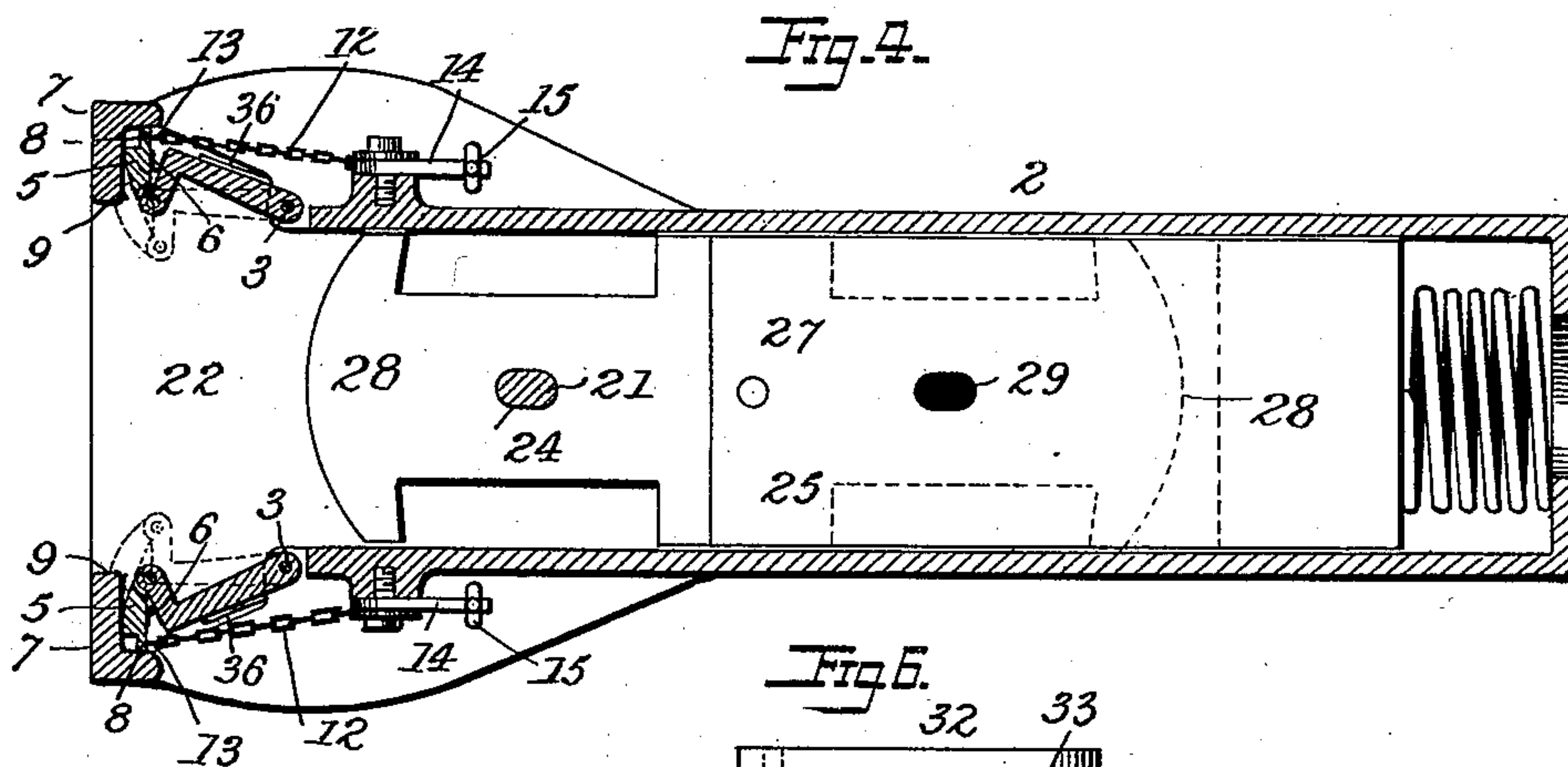
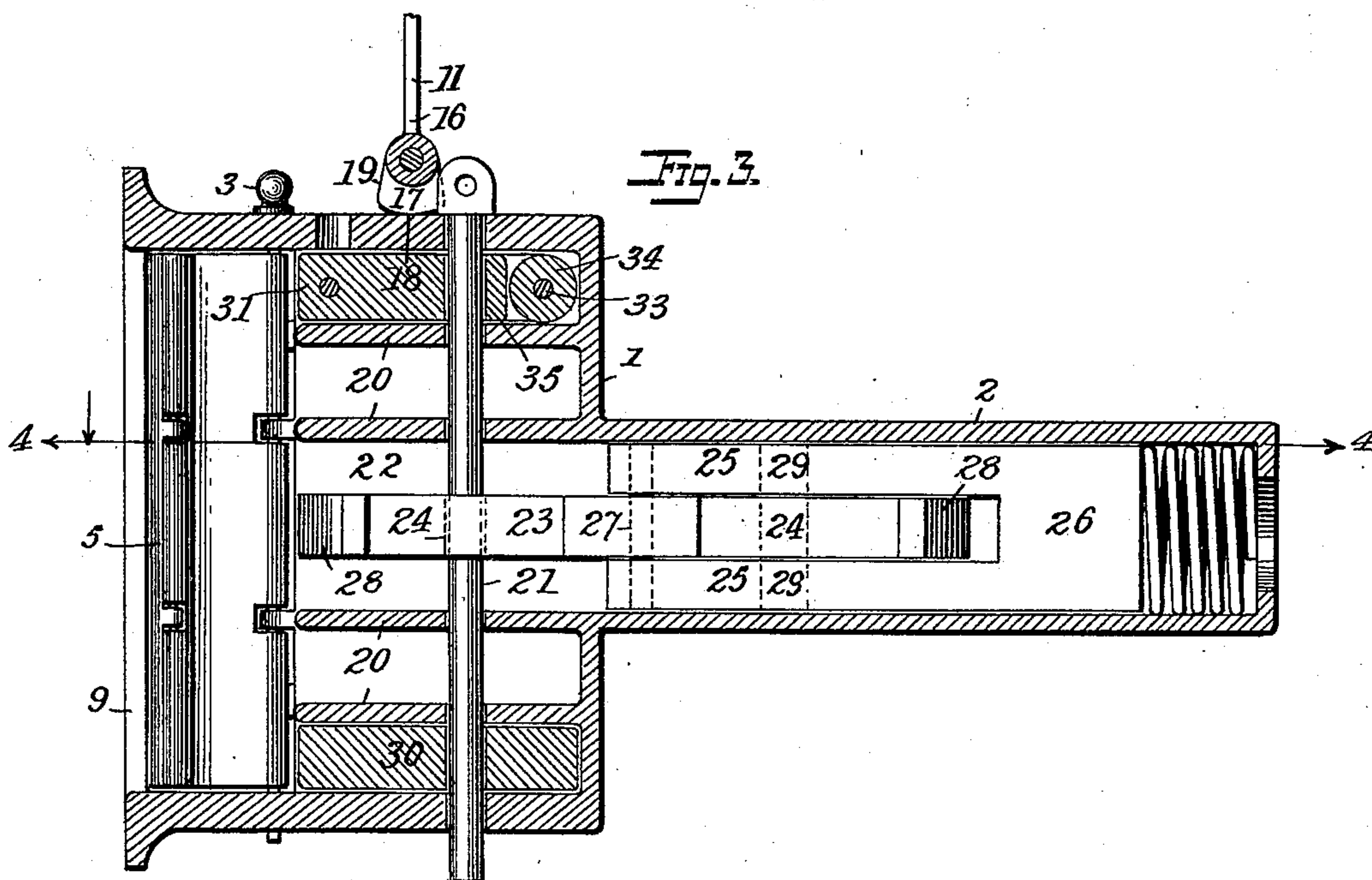
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

GEORGE B. LEONARD, OF GRACEDALE, ASSIGNOR OF ONE-HALF TO ADAM D. SMITH, OF ASHLEY, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 528,951, dated November 13, 1894.

Application filed June 5, 1894. Serial No. 513,570. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. LEONARD, a citizen of the United States, residing at Gracedale, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

My invention relates to car couplers.

The object of the invention is to provide a coupling which is strong and durable and which is adapted to couple to any of the ordinary forms of coupler in use, such as the link and pin coupler, the hook and link coupler and others.

To this end the invention consists in a coupling which is of the arrow-head and jaw type and which is provided with devices for adapting it to connect with the other forms of couplers enumerated.

For a further description of the invention reference is had to the following specification, in which—

Figure 1 is a side view of my improved car coupling. Fig. 2 is a front view. Fig. 3 is a section on the line 3—3 of Fig. 2, the links being shown in side elevation. Fig. 4 is a section on the line 4—4 of Fig. 3, and Figs. 5, 6 and 7 are detail views of the several forms of links.

Referring to the drawings 1 represents the body or casing of the coupling and 2 is the drawhead connected to the coupling. In the forward part of the coupling is a pair of vertically arranged jaws connected to the body by means of a pair of hinge pins 3, 3 and normally pressed toward each other by suitable springs 36. The jaws consist of hook-shaped angular bars as shown in section in Fig. 4, and to the extremity of the hook portion 4 of each jaw is pivoted or hinged a wing 5 which is forced outward normally by a spring 6. When the jaws are open, they are situated in the rear of the face plate 7 of the coupler, and when they are closed shoulders 8 upon the wings 5 engage with edges 9 of the face plate and lock the jaws in a closed position.

In order to open the jaws, the extremities of the wings 5 are connected with a cam lever 11 upon the top of the casing, so that by ma-

nipulating the lever the jaws may be readily opened or closed. As shown, the connections consist of chains 12 connected to hooks 13 upon the wings, elbow levers 14, and connecting rods 15, the upper ends of which are connected to the axis of a shaft 16 carrying cams 17 which bear upon the top of the head or casing. The cams 17 have flat faces 18, 19, so that they will be held stationary when the jaws are either in the open or closed position.

Referring to Figs. 2 and 3, it will be seen that my improved coupler is constructed with a vertical series of pockets separated by partitions 20. The jaws extend from top to bottom of the casing in front of all the pockets, and a coupling pin 21 also extends from top to bottom, passing through the partitions of the pockets. The central pocket 22 is a large one and extends rearward into the draw-bar 2. Within this pocket is carried the main arrow-head coupling bar 23, which is adapted to interlock with other couplings of this class.

The coupling bar 23 has two perforations 24 for the coupling pin 25. When the pin is in one of these perforations, the bar is retained wholly within the pocket, so that the coupler may connect with the corresponding bar of an opposite coupler. When, however, it is desired to use the coupling bar, the pin is raised and the bar drawn out until the rear hole in the bar is opposite the pin. The pin is then dropped which locks the bar in an extended position ready to engage with another coupler.

According to my present invention the bar 23 is reversible, and is pivoted centrally in the jaws 25 of a block 26 which fits within the drawhead 2, there being a strong pivot pin or bolt 27 employed for this purpose. The bar has two arrow-heads 28. As shown in Fig. 2 the bar 23 is in its rear position. When it is desired to connect this bar with an opposite coupler, the coupling pin 21 is withdrawn, the arrow-head bar and the block 26 are drawn forward until the holes 29 in the jaws 25 are opposite the coupling pin, and the coupling-pin is then dropped. It will be evident that this arrangement connects the arrow-head bar with the coupler head in a very secure manner, the coupling pin pass-

ing through both the jaws 25 and the perforation 24 in the rear end of the bar.

There may be one or more pockets above and below the central pocket 22. As shown, 5 there are two pockets above and two below. These pockets are utilized for carrying links or bars which are necessary to connect my improved coupler with other forms of couplers.

In Fig. 5 is shown a short arrow-head bar 10 which is adapted to be used in connection with my improved coupler and an ordinary link and pin coupler. The end of the bar which passes into the throat of the ordinary link and pin coupler is provided with several 15 holes so that the arrow-head may be arranged to project the proper distance from the face of the coupler.

When it is desired to connect a car provided with my invention with a car having the ordinary form of coupler, the arrow-head bar 20 23 is pushed back into its pocket, as shown in Fig. 2, and the short-bar 30 is taken from its pocket and connected by the pin to the opposite coupler. This arrow head will then 25 be in position to couple with the jaws 4. In this manner I may couple cars provided with my invention to cars provided with the common form of coupler without any danger to human life, as it is unnecessary to be between 30 the cars when the coupling operation takes place.

In another pocket I provide a link which is suitable to couple with a hook upon an 35 ordinary hook and link coupler. As shown in Figs. 6 and 7, the link consists of a block or shank 31, a pair of side-bars 32 pivoted to one end of the block, and a cross-bar 33 connecting the free ends of the side-bars 32. The 40 connecting bar 33, as shown, carries an anti-friction roller 34 to facilitate coupling. At the rear end of the block 31 is a hole 35 adapted to receive the coupling-pin 21. Ordinarily the block 31 is folded within the 45 side-bars 32, as shown in Fig. 6, and in this condition it is locked within the pocket by the coupling-pin. When, however, it is desired to use this link in connection with a hook coupler, it is withdrawn from the pocket 50 and opened out as shown in Fig. 7, and the block 31 is then replaced in the pocket and connected to the coupler by means of the coupling-pin. The link proper, consisting of the side-bars 32 and cross-bar 33 projects 55 from the face of the coupler in position to engage the opposite hook.

It will be seen that the front face of the coupler constitutes a buffer and that the various working parts of the coupler are pro- 60 tected either within the casing or head or behind the face or buffer, and that there is little liability of accident to the coupler through collision with the couplers or buffers of other cars.

65 Among other advantages of my invention, the following may be enumerated:

First. It may be coupled to any of the usual forms of coupler or drawhead without requiring any person to be between the cars at the time of coupling. 70

Second. It will couple to any of the usual forms of coupler.

Third. Two cars provided with my improvements may be coupled together by two arrow-head bars instead of one, and thus a 75 doubly-strong connection may be made.

Fourth. The lever which operates the jaws of the coupling may be operated from the top or side of the car and thus two cars may be separated without requiring the presence 80 of a man between the cars.

Fifth. The appliances for connecting with the various kinds of coupling are always kept locked by the coupling-pin within the pockets and are always at hand when it is necessary 85 to use them, and thus a great deal of time which is ordinarily spent in looking up pins and links is saved.

Sixth. The arrow-head bars will become dis- 90 engaged from the jaws if turned at right angles to their normal position, and for this reason if one car of a train is upset, it will become disconnected from the succeeding cars, and thus will often prevent one car from drawing others down a bank or off a bridge. 95

Seventh. The jaws are of considerable length and are adapted to couple with other cars in which the couplers are either higher or lower. Moreover, the link block 31 may be placed in any of the upper or lower pockets 100 and thus adapted to connect with a car having a hook which is higher or lower.

While the reversible arrow-head bar 23 forms a very convenient arrangement, there being always a second arrow-head in reserve 105 if the first one breaks, I do not care to limit myself to this particular form.

If desired the middle pocket may be made smaller and a bar having an arrow-head at one end and perforations at the other, such as 110 that shown in Fig. 6, may be used, or cars may be connected by a simple bar having an arrow head at each end. It is preferable, however, to use an arrow-head bar having perforations for the coupling pin 21 so that the bar will 115 stand at the proper level and not drop down to the bottom of the coupler.

In coupling the jaws of the coupler are first allowed to close by turning down the operating lever. The jaws lock automatically be- 120 hind the face plate, but when the arrow-head bolt of the opposite car strikes the jaws it first pushes back and unlocks the wings and afterward forces the jaws apart and enters. After the jaws close upon the bolt the wings 125 again become locked and hold the jaws closed until the cam lever is raised.

It will be evident that various minor changes of construction may be made in the coupling above described without departing 130 from the spirit of my invention, and therefore I do not care to limit myself to the pre-

cise construction and arrangement of parts shown and described.

What I claim is—

1. In a car coupling the casing having a rectangular face opening in combination with vertical jaws pivoted to the casing and provided with wings adapted to engage with the inner edges of the face opening to lock the jaws in their closed position.

2. In a car coupling having a rectangular face opening the vertical jaws arranged at each side of the opening and pivoted to the casing, the elongated wings pivoted to the inner edges of the jaws and having shoulders adapted to engage with the inner edges of the face opening, springs for forcing the wings outward, and means for retracting the wings to release the jaws, substantially as described.

3. In a car coupling the combination with the casing having a rectangular face opening, angular jaws vertically arranged at each side of said opening, a cam lever on top of the casing, elbow levers pivoted on either side of the casing, and connections from the elbow levers respectively to the jaws and the cam lever, substantially as described.

4. In a car coupling the combination with the casing or head having vertical angular jaws pivoted thereto, of horizontal partitions in the rear of the jaws forming a series of compartments, a coupling pin passing through

said partitions, and an arrow-head bolt having a perforation adapted to receive the coupling pin, substantially as described.

5. In a car coupling of the class described, the combination with the casing having vertical angular jaws, a compartment in the rear of the jaws, a block having horizontal jaws adapted to fit within the compartment, and a reversible arrow-head bolt centrally pivoted in the jaws of the block, substantially as described.

6. In a car coupling of the class described, the combination with the casing having vertical angular jaws and a compartment in the rear of said jaws, and with a coupling pin adapted to pass through said compartment, of a block adapted to fit within the compartment and provided with horizontal jaws, a reversible arrow-head bolt centrally pivoted in the jaws of said block, a perforation in said jaws adapted to receive a coupling-pin, and two perforations in said bolt adapted to register with the perforation in the jaws, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE B. LEONARD.

Witnesses:

J. P. OBERRENDER,
J. G. M. BURTON.