

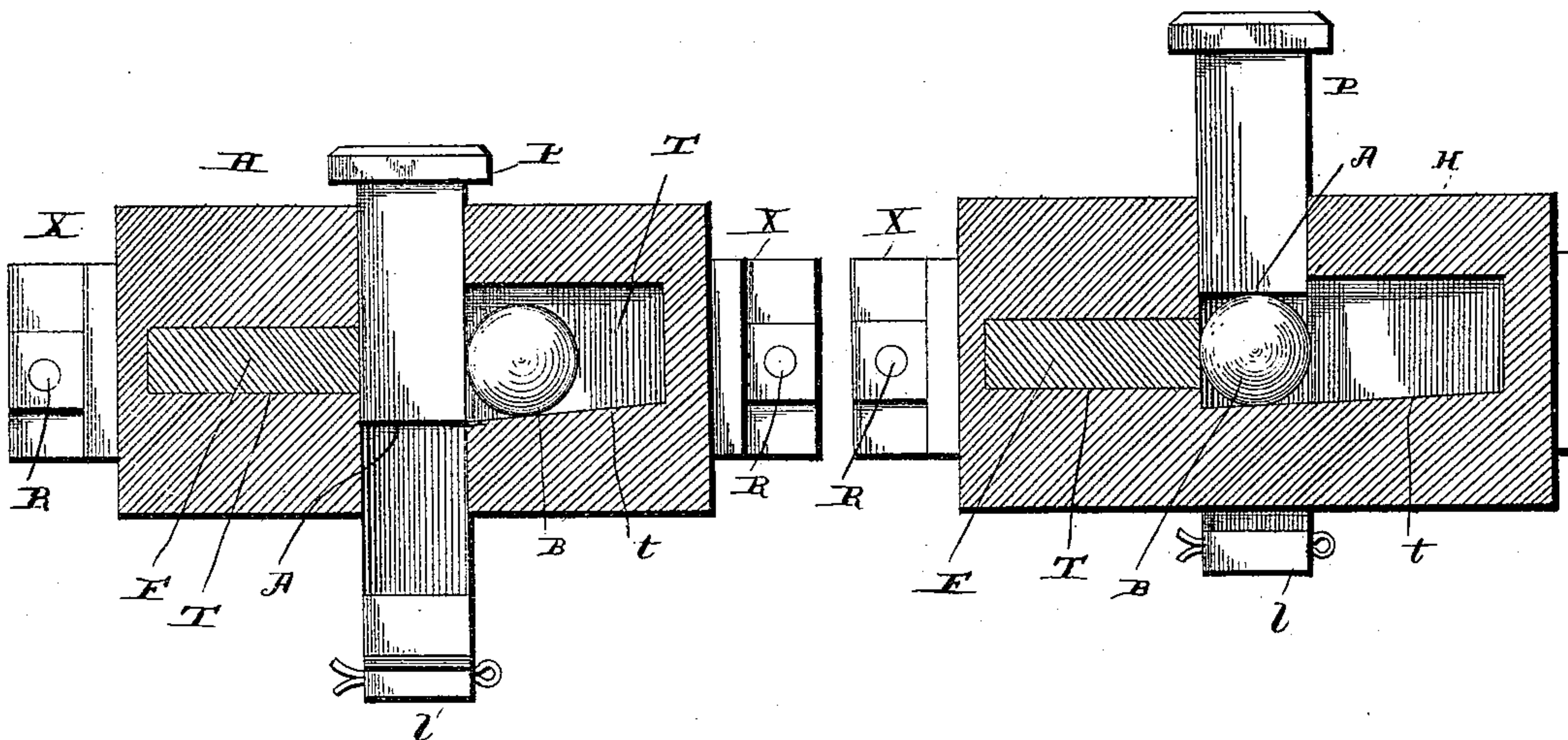
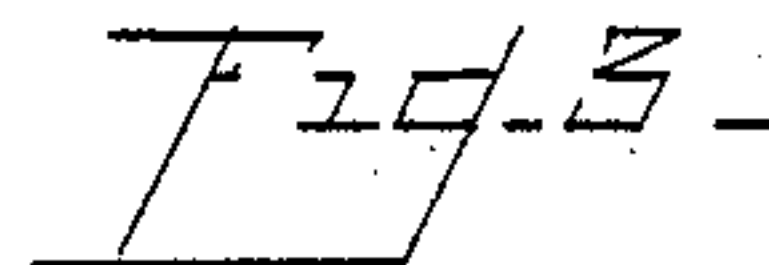
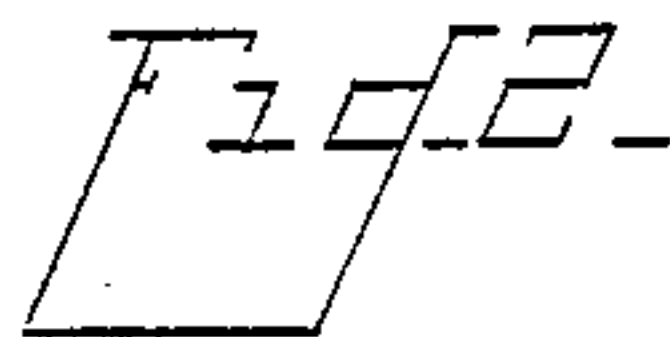
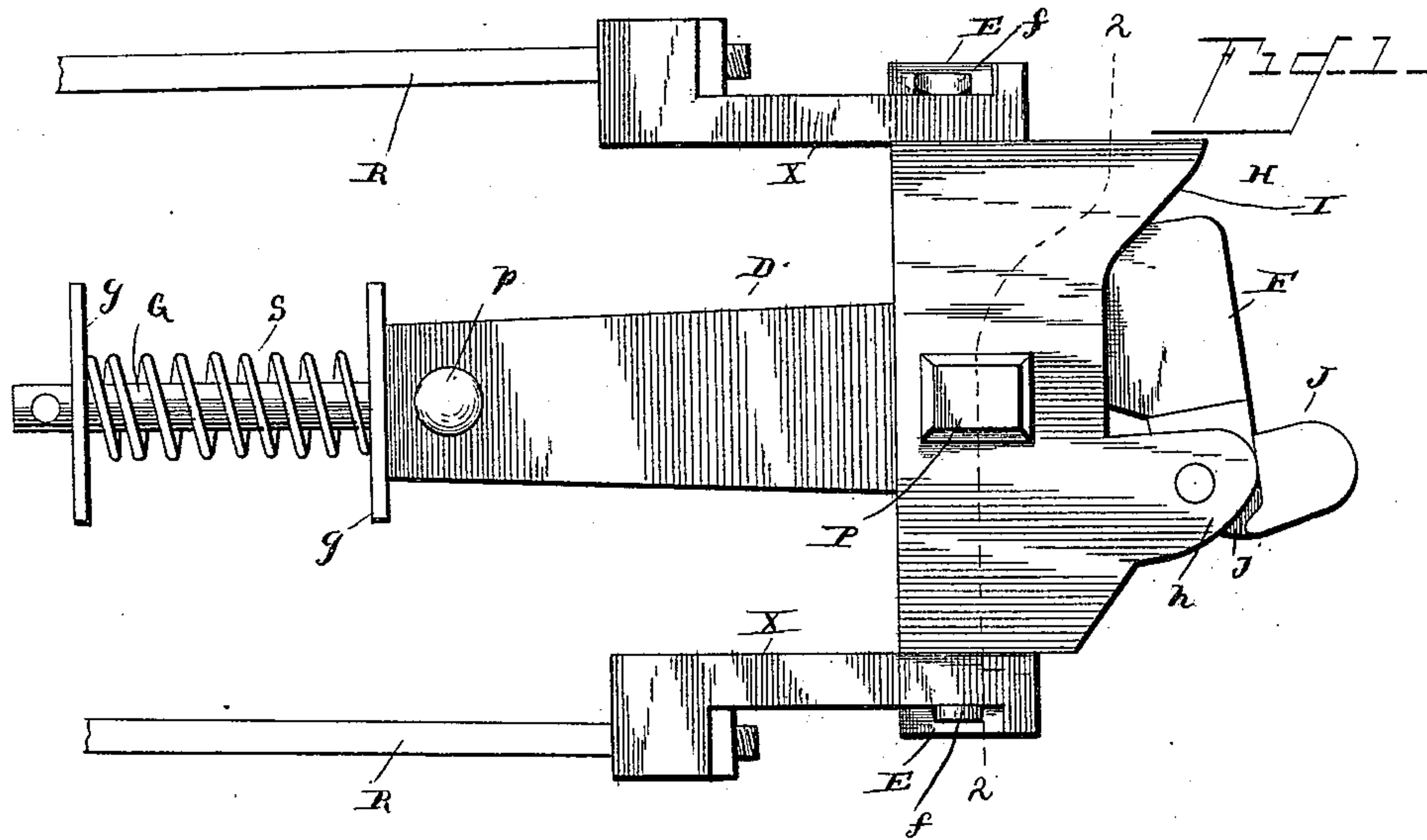
(No Model.)

2 Sheets—Sheet 1.

H. MARSHAL.
CAR COUPLING.

No. 433,798.

Patented Aug. 5, 1890.



Witnesses

Geo. C. French.

Inventor

Henry Marshall

By *his* Attorneys.

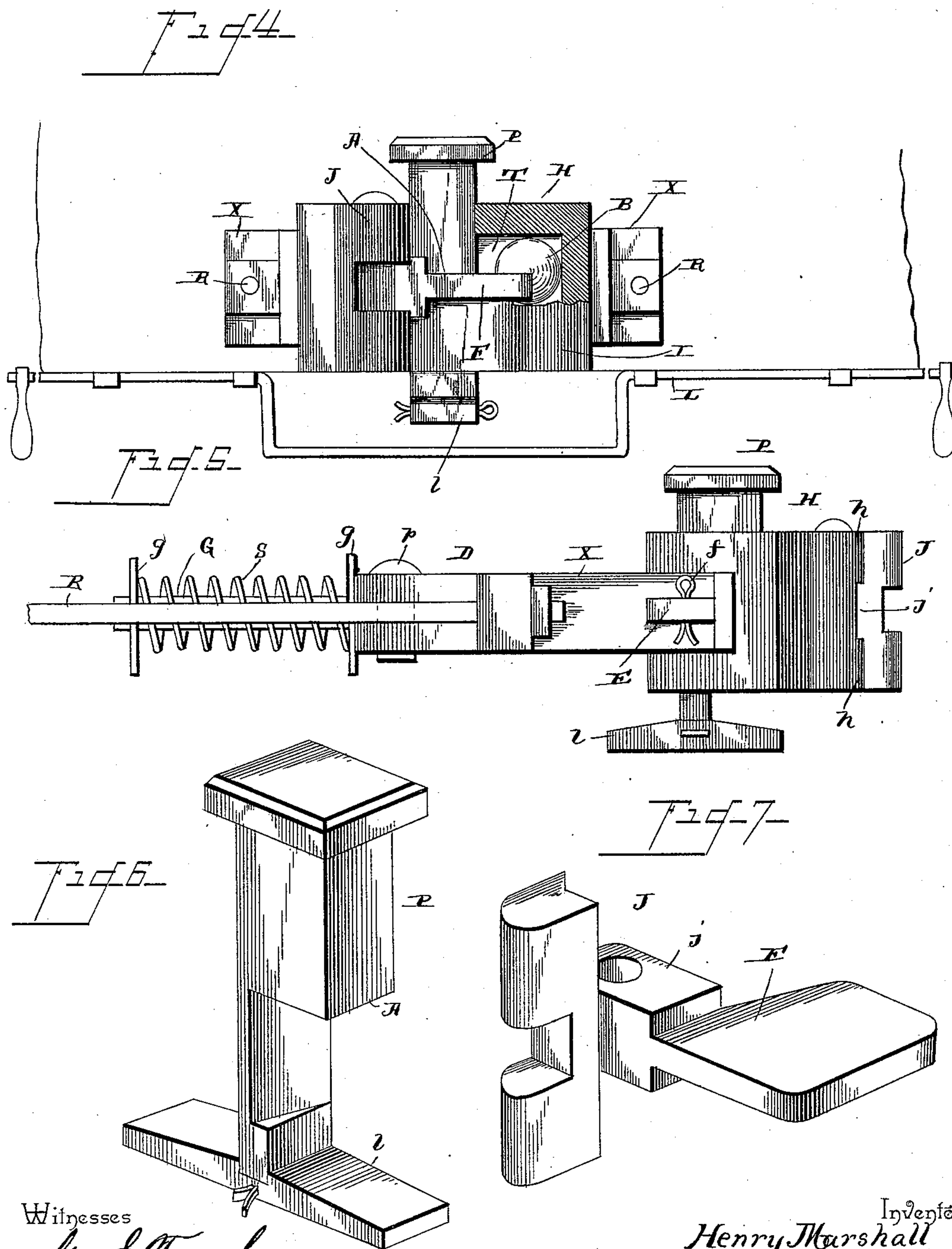
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2 Sheets—Sheet 2.

No. 433,798.

Patented Aug. 5, 1890.



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UNITED STATES PATENT OFFICE.

HENRY MARSHAL, OF LINCOLN, NEBRASKA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 433,798, dated August 5, 1890.

Application filed May 13, 1890. Serial No. 351,593. (No model.)

To all whom it may concern:

Be it known that I, HENRY MARSHAL, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to car-couplings, more especially of that class known as "twin jaws;" and the object of the invention is to improve the construction of devices of this general character heretofore existing.

To this end the invention consists of a draw-head, a jaw swinging on a vertical pivot therein and having a foot extending into a transverse slot in the front end of the draw-head provided with an inclined bottom, a pin having a shoulder adapted to lock the foot, and hence the jaw, and certain details of construction, as of the devices for connecting the draw-head with the car, all as hereinafter more fully described, and illustrated in the drawings, in which—

Figure 1 is a plan view of my improved draw-head and draw-bar detached from the car, showing the jaw as open or in uncoupled position. Fig. 2 is a transverse section on the line 2 2 of Fig. 1, showing the jaw as locked. Fig. 3 is a similar section showing the pin as raised and held in raised position by the ball and the jaw as ready to be turned to uncouple the cars. Fig. 4 is a front elevation showing the jaw as unlocked, the upper portion of the draw-head being broken away to show the correct positions of the pin and ball, this view also showing the end of the car in outline and the pin-raising devices attached thereto. Fig. 5 is a side elevation of the draw-head from the jaw side with the jaw open. Figs. 6 and 7 are detail perspective views of the pin and the jaw detached.

Referring to the said drawings, the letter H designates the draw-head; D, the draw-bar; P, the coupling-pin; J, the jaw; B, the ball; L, the pin-lifter; X, the draft-boxes; R, the connecting-rod, and S the buffer-spring. The construction and relative arrangement of these parts are as follows: The draw-head H is provided at its sides with ears E, over which are engaged draft-boxes X, which are retained in position upon said ears by suitable means,

as fastening-pins *f*, and through the rear ends of these boxes are passed the front ends of connecting-rods R, which extend beneath the car-body and are connected with the draw-head at the other end of the car in the same manner. The draw-bar D has a hole in its rear end in which is seated an extension-pin forming a guide G for the spring, and this guide is connected with the draw-bar by a pin *p*, which passes vertically through them about as shown. Upon the guide G is mounted the buffer spring or springs S, which operate between plates *g*, sliding upon the guide G in the well-known manner.

The draw-head is about of the shape shown in the drawings, although its relative proportions of parts may be considerably varied without departing from the spirit of my invention. It is provided with a vertical hole through its center in which moves the coupling-pin P, hereinafter described. It has forward extensions *h*, between which is pivoted an outward extension *j* of the jaw J, and it has a transverse slot T in its front end, which slot is enlarged on the interior of the draw-head, is curved around the pivot of the jaw, and has an inclined bottom *t*. The jaw J has a foot F, of the shape shown in Fig. 7, which foot projects rearwardly from the pivot *j* and moves within the slot T, as will be clearly understood. The main portion or head of the jaw stands forward of the body of the draw-head and opposite an inclined face I of the draw-head, whereby it is adapted to couple automatically, as is usual in car-couplings of this character.

The pin P, which moves vertically through the hole in the draw-head in rear of the slot therein, has an enlarged lower end *l*, and a rod or bar L, which turns in eyes in the end of the car-body, has a bend at its center standing beneath this enlarged lower end of the pin, and has cranked outer ends, whereby the pin may be lifted from the sides of the car. The lower end of the pin is smaller than the upper end, whereby a shoulder A is formed at about the center of its length, and this shoulder rests upon the foot F, as shown in Fig. 4, when the jaw is open. As soon as the latter is closed the pin falls by its own weight and the shoulder passes down by the

foot, as shown in Fig. 2, whereby the jaw is locked in this position. When it is desired to uncouple the car, the pin is raised and the ball B rolls down the inclined bottom *t* and passes under the shoulder A, whereby the pin is supported, as shown in Fig. 3. As soon as the cars are moved, to separate them the two jaws J are turned, as will be readily understood and as is common in this class of car-couplers. This movement of the jaw throws its foot around in the slot T below the shoulder A of the pin, and pushes the ball B forward of it up the inclined bottom *t* of the slot. The thickness of the foot is slightly less than the diameter of the ball, whereby as soon as the ball has been pushed from beneath the shoulder A the pin falls a trifle and rests and slides upon the upper face of the foot. The parts then assume the position shown in Figs. 1 and 4.

When the device is to be coupled, the companion draw-head is forced against the one illustrated, and as it approaches it strikes the then front edge of the foot F and turns the same (and with it the head J) to the locked position of the parts. As it turns, the foot slides below the shoulder A and the ball follows the foot until it strikes the side of the shoulder, when it can go no farther, because it is too large to pass under the shoulder. The foot continues to move until it clears the shoulder, when the pin drops and the parts assume the positions shown in Fig. 2, the cars being then coupled together.

What I claim is—

1. In a car-coupling, the combination, with the draw-head having a slot in its front end, which is enlarged on the interior of the draw-head and provided with an inclined bottom, of a pin moving vertically through the draw-head and having a shoulder moving through

the enlargement of said slot and a ball in said enlargement, substantially as described.

2. In a car-coupling, the combination, with the draw-head having a slot in its front end, which is enlarged on the interior of the draw-head and provided with an inclined bottom, and the jaw pivoted in said draw-head and having a foot extending into said slot, the latter being struck on a curve around the pivot of the jaw, of a ball in said enlargement of greater diameter than the thickness of the foot, and a pin moving vertically through the draw-head in rear of the enlargement and having a shoulder extending into the enlargement, the whole adapted to operate substantially as described.

3. In a car-coupling, the combination, with the draw-head, a jaw pivoted therein and having a rearwardly-extending foot, and a pin having a shoulder adapted to drop in front of said foot, of an enlargement at the lower end of said pin and a cranked rod mounted in eyes on the end of the car-body and standing below said enlargement and at right angles thereto, as and for the purpose set forth.

4. In a car-coupling, the combination, with the draw-head having perforated ears at its sides, of draft-boxes engaging said ears, pins passing through the perforations therein and removably securing the boxes in place, and rods connecting the boxes with those at the other end of the car-body, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY MARSHAL.

Witnesses:

LOU L. E. STEWART,
R. L. STEWART.