(No Model.)

E. W. GRANT.

CAR COUPLING.

No. 258,746. Patented May 30, 1882.

Fig. 1.

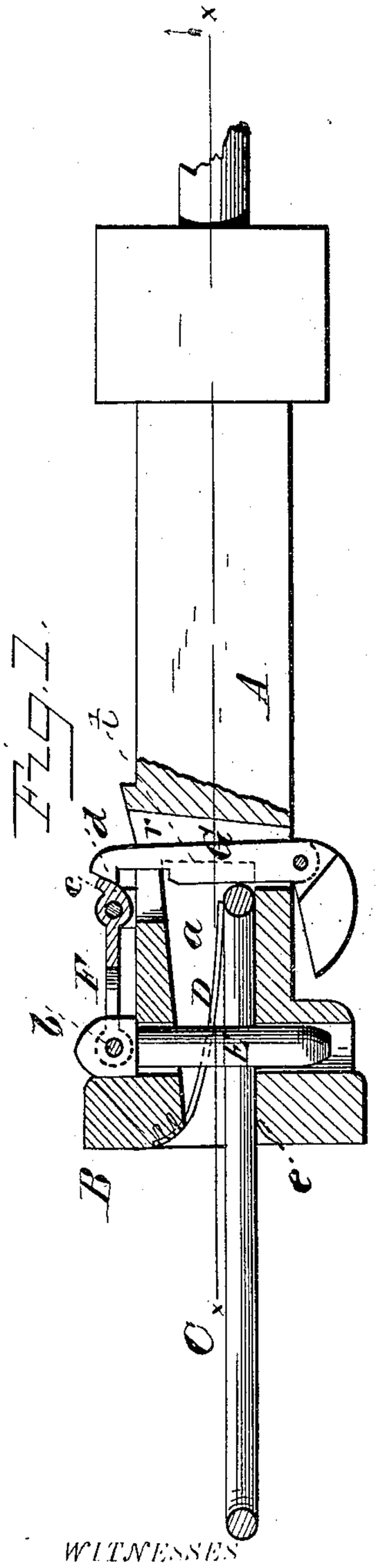

Fig. 2.

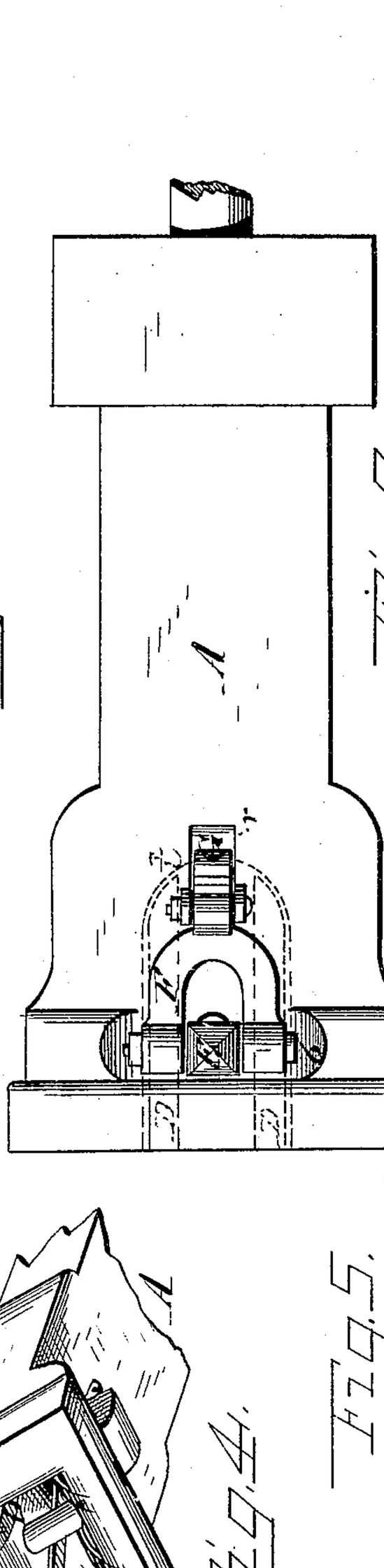

Fig. 3.

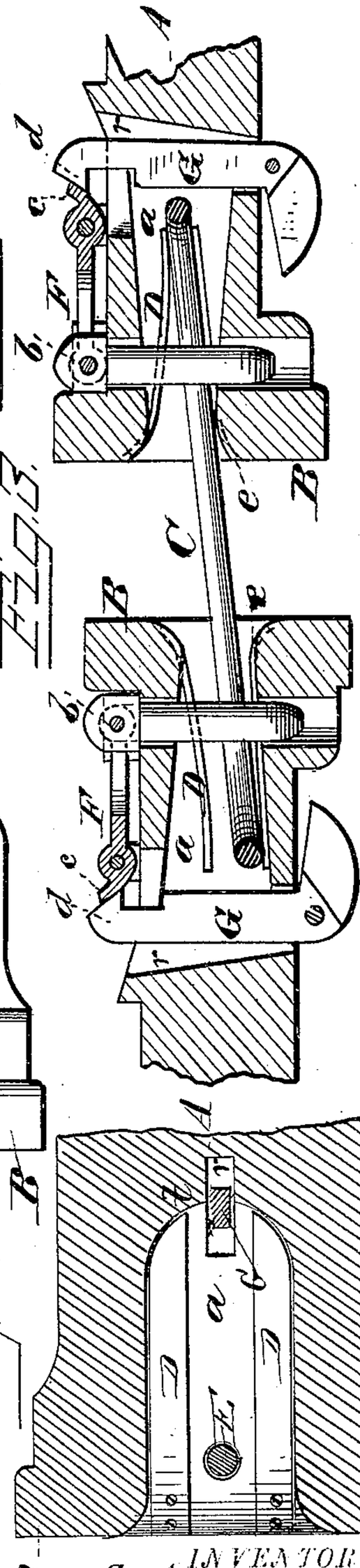

Fig. 4.

Fig. 5.

WITNESSES

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EDWARD W. GRANT, OF YPSILANTI, MICHIGAN.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 258,746, dated May 30, 1882.

Application filed March 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD W. GRANT, of Ypsilanti, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The object of my invention is to improve the railroad-car coupling for which Letters Patent of the United States were granted to me, bearing date on the 26th day of July, 1881, by the combination, with the draw-bar, of two or more springs which are so arranged that they will sustain the coupling-link in a horizontal position, or in such other position as will insure its entrance into a buffer-head of another car when two cars come together, in combination with a concave abutment for the chamber of the buffer-head, and the said springs having free rounded rear ends, which are in such close relation to said abutment that they will not allow the rounded end of a link to get between the springs and the beveled or backwardly-flaring surface of the said chamber, as will be hereinafter described.

The following description of my invention, when taken in connection with the annexed drawings, will enable others skilled in the art to fully understand it.

In the annexed drawings, Figure 1 is a vertical longitudinal section through a draw-bar adapted for only two springs, and showing a link held in position thereby. Fig. 2 is a top view of Fig. 1, the springs being indicated by dotted lines. Fig. 3 is a vertical longitudinal section through the coupling ends of two draw-bars adapted for the use of four springs each, two springs being above the link and two below the same. Fig. 4 is a perspective view of the coupling. Fig. 5 is a section taken horizontally through the coupling in the plane indicated by the dotted line *x x* on Fig. 1, looking upward.

The letter A designates a draw-bar, which is constructed with an enlarged buffer-head, B, adapted to receive a coupling-link, C, as shown in Fig. 1. The chamber *a* in the buffer-head has an outwardly-flaring mouth for guiding the end of a link into said chamber. The floor of the chamber *a* is flat and horizontal, so that when a link, C, lies upon it, as shown in Fig. 1, this link will be held in a horizontal position. The roof of the chamber *a* in the draw-bar of Fig. 1 is not parallel to the floor thereof, and to the front part of this roof I secure the front ends of two substantial springs, D, which extend backward and downward, their free ends terminating near the rear concave terminus, *t*, of the chamber *a*. The front ends of the springs D are recessed into the roof of the chamber *a*, and preferably secured by screws. The two springs D are arranged on opposite sides of the center of the draw-bar, so as to leave between them a space for the free passage of a coupling-pin, E, and a gravitating catch, F.

The rear terminus of the chamber *a* is made to correspond in shape to the curved (convex) form of the extremity of a link, and the springs D have rounded rear ends, which conform to the abutment *t*, and which are arranged in such close relation thereto that the end of the link cannot possibly get between the springs and the beveled surfaces to which they are directly applied. It is by the pressure of the said springs upon the link C that it is held in the coupling position shown in Fig. 1. The springs will in no wise prevent a free play of the link or draw-bars between cars which are in motion.

The coupling-pin E is connected by a horizontal transverse pivot, *b*, to the furcated ends of a lever, G, which is pivoted between ears on the top of the draw-bar or buffer-head thereof, so that it is free to vibrate vertically. The rear part of the lever G is directed upward and backward when the pin E is down, and forms a tongue, *c*, with which the hook *d* on the upper end of the catch F will engage when the pin is up, thereby safely holding this pin up to allow a self-coupling to be effected when a link is thrust into the chamber *a* and pressed against said catch F. The lever G is partly applied in a vertical slot, *r*, made through the bar A at the central portion of the concave abutment *t*, as shown in Figs. 1, 2, 3, and 5. The front edge of this lever is exposed, so that it will be struck by the end of a coupling-link when thrust into

the draw-head of the bar A, and caused to disengage the catch F and allow pin E to drop and effect a coupling.

It will be seen by reference to Fig. 1 that when the coupling-pin is down the beveled nose on the hook *d* of the gravitating catch F will be pressed by the weight on the lower end of this catch against the tongue *c* of lever G, and thus operate to keep the pin down and prevent a casual uncoupling.

On roads having cars which vary in height I shall employ four springs, D, and construct the chamber *a* so that it flares backward, as shown in Fig. 3. Two of said springs will be applied to the inclined roof of the chamber *a*, and two springs will be applied to the floor of the said chamber. It will thus be seen that when a link is in the draw-head its end will be between springs which will act to hold it horizontally, while the enlarged chamber *a* will allow the link considerab'e vibration when cars are in motion.

When four springs are employed, arranged, as described, in a backwardly-flaring chamber, *a*, the two upper springs converge toward the two lower springs at their rear or free ends, and the points marked *e* at the mouths of the buffer-heads afford fulcra for the coupling-link during its vibrations.

Having described my invention, I claim—

The combination of the buffer-head, the backwardly-flaring chamber at the rear rounded abutment, *t*, thereof, the independent springs D, having free inner ends, which are also rounded to fit the abutment *t*, the gravitating catch-lever G, extended vertically through the base A in rear of the abutment *t* and the rounded ends of said springs, the catch F on top of the bar A, and the coupling-pin E, pivoted to the catch F, all arranged and operating substantially as described.

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

EDWARD W. GRANT.

Witnesses:

EDWARD P. ALLEN,

THOMAS KISSORNE.