

(No Model.)

J. FREY.
CAR COUPLING.

No. 395,776.

Patented Jan. 8, 1889.

Fig. 1.

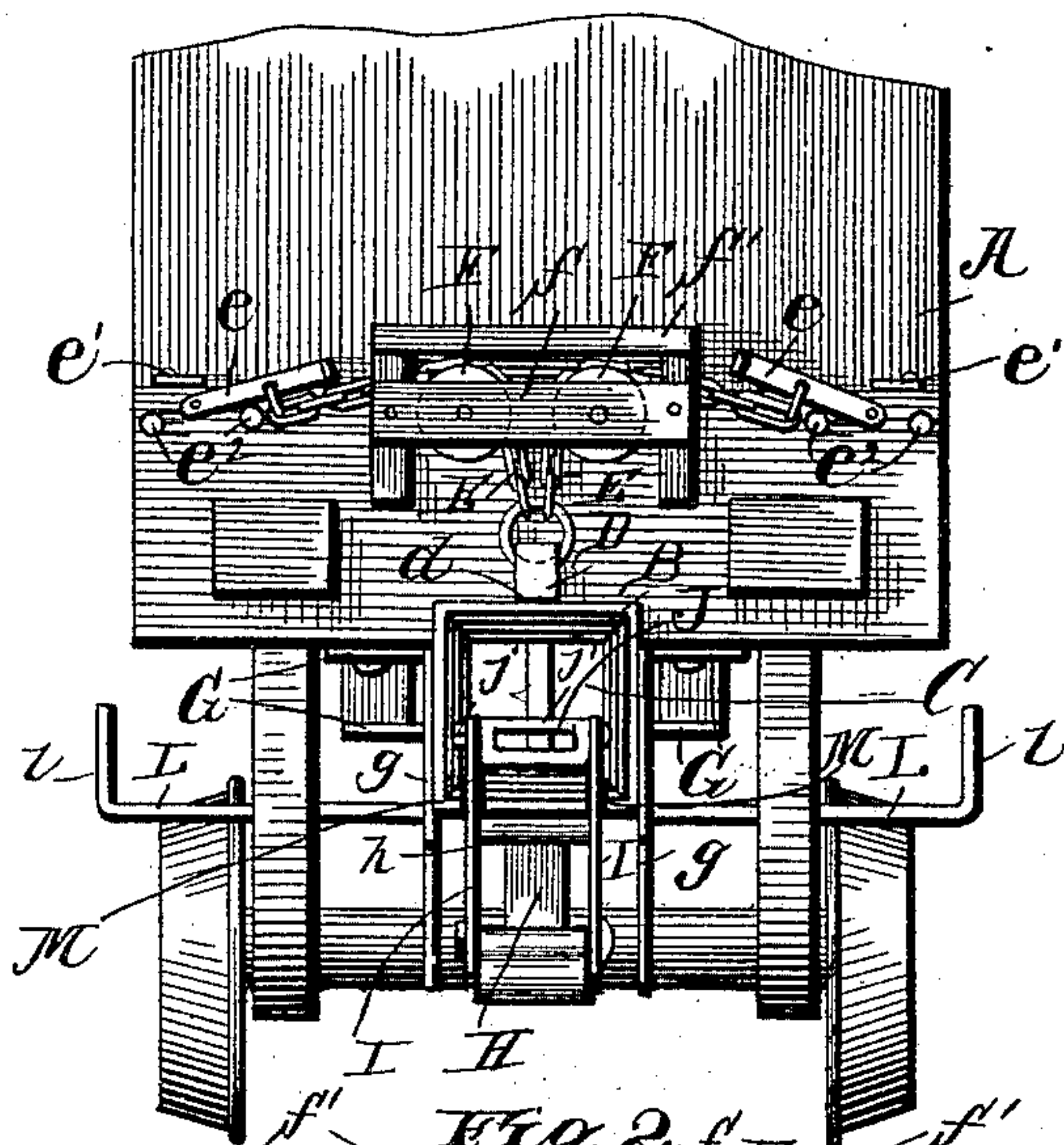


Fig. 2.

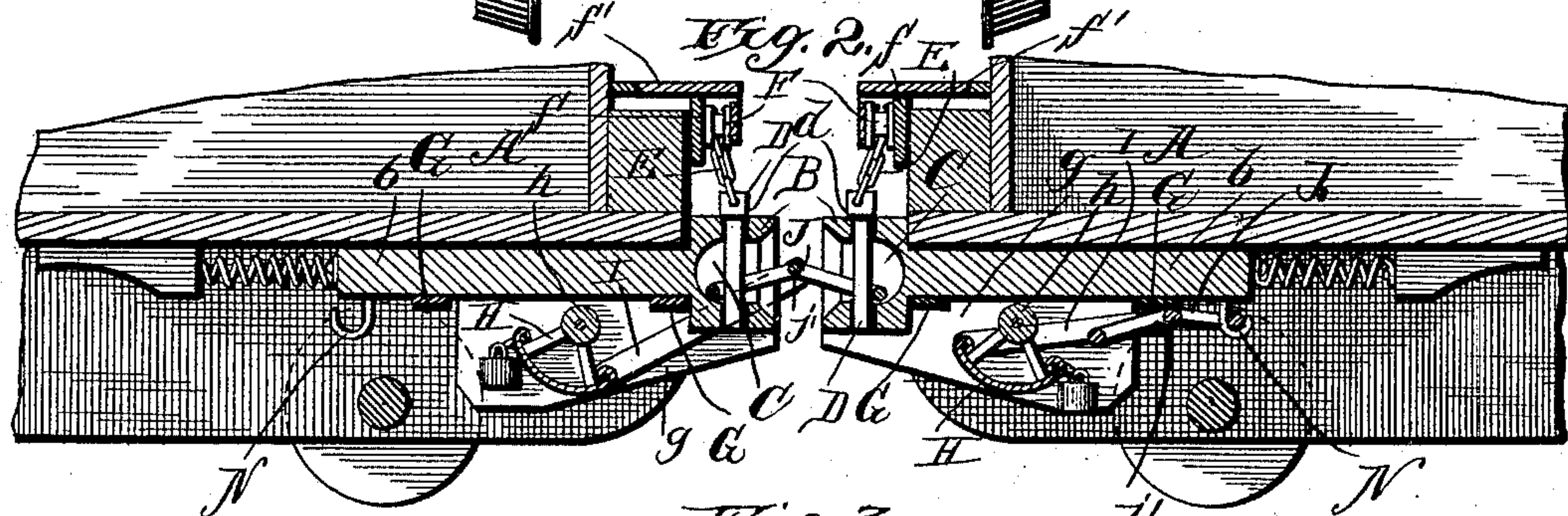
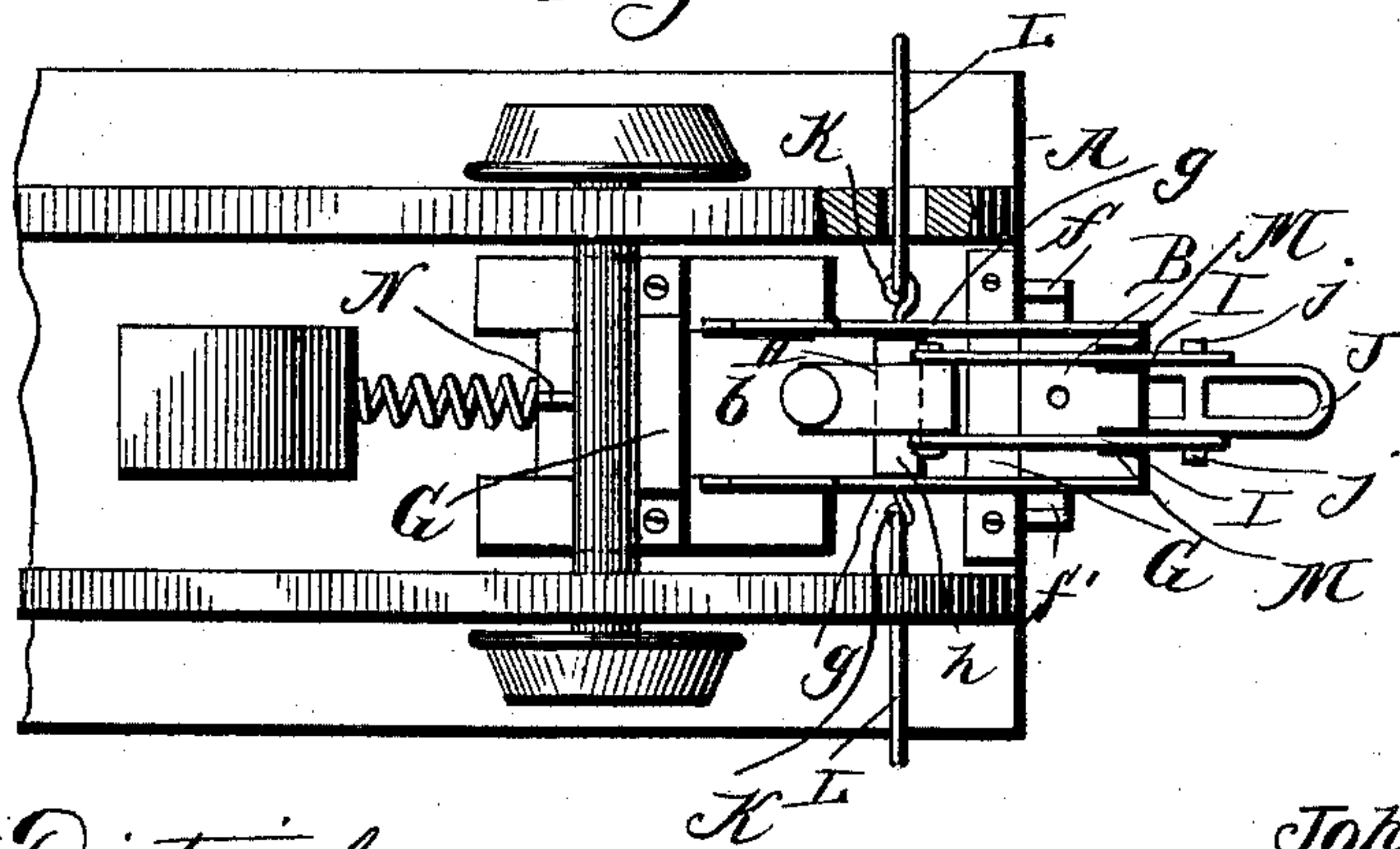


Fig. 3.



Witnesses.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 395,776, dated January 8, 1889.

Application filed October 3, 1888. Serial No. 287,043. (No model.)

To all whom it may concern:

Be it known that I, JOHN FREY, a citizen of the United States, residing at Van Wert, in the county of Van Wert and State of Ohio, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

The invention relates to improvements in car-couplers; and it consists in the construction and novel combination of parts, hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

Figure 1 of the drawings represents the end of a car having a coupler embodying the invention attached. Fig. 2 represents a central vertical longitudinal section of two cars connected by the said coupler. Fig. 3 is a reversed plan view of the same.

Referring to the drawings by letter, A designates the end of a car, having the draw-head B and draw-bar *b* connected thereto in the usual manner, the latter moving between suitable guides and being backed by a spring, as usual. The draw-head has the link-recess C, provided in its roof and floor with suitable coupling-pin openings and a flaring mouth. The inner surfaces of the floor and roof converge inward at angles of about forty-five degrees to their horizontal inner portions, which begin outside of the pin-opening. The inner surfaces of the sides of the draw-head converge inward at similar angles to the end of the recess C. The front edges of the draw-heads are flat vertically for a sufficient width to permit them to strike together without chipping. The inward convergence of the sides of the mouth of the link-recess is for the purpose of guiding the link into proper position to be engaged by the coupling-pin.

D is the coupling-pin, provided near its upper end with the circumferential stop-flange *d*, and having the adjacent ends of the lifting-chains E E secured in an opening in it above the said flange. The said chains pass vertically upward and over the grooved pulleys F, journaled on rods or shafts that have their ends secured in the front and rear of the casing *f*, which is secured above the draw-head to the end of the car and provided with a lid, *f'*, that serves to keep dust and refuse from the

interior of the casing, and has its rear edge hinged to the rear of the latter. The outer ends of the chains E are passed through openings in the sides of the casing *f*, and are attached to the levers *e* at suitable points of the latter, which are pivoted at proper points to the end of the car near the sides thereof, and the brakeman, standing near the corresponding side of the car, can lift the pin, and when the latter is lifted the detent *e'* is turned over the upper edge of the lever to keep it in place.

*e*² *e*² are stops to prevent the levers from being turned too far downward, and also to prevent the chains from being broken by too hard pulling.

The link and link-operating mechanism are constructed as follows:

G G are clips or straps respectively surrounding the draw-bar and draw-head at proper points and at a suitable distance apart. The said straps have on each side of the draw-bar depending projections, which are connected on each side by horizontal bars or plates *g*, that have at suitable points bearings for the journals of the hub *h* of the depending sector-wheel H.

To the extended ends of a transverse rod secured to the front end of the rim of said sector-wheel are pivoted the lower ends of the link-rods I, the upper ends of which are pivoted to journals *j*, standing outward from about the centers of the side bars of the coupling-link J. The said journals may be the extended ends of a bar, *j'*, passing transversely through the side bars of the link; but for the sake of strength the said bar and journals are preferably made integral with the link.

The rear end of the rim of the sector-wheel is made heavy enough or weighted, as shown, in order to exactly balance the front end with the attached link and bars, thus keeping the link horizontal, so that it will enter the opposite draw-head without being raised by the crank. The journals of the hub *h* are extended outside their bearings in the bars *g* and have secured to them the loops or staples K, in which are engaged the hooked ends of the rods L, each of which has a bearing at a proper point of the car-truck, with an opening long enough to permit said rod to accom-

modate itself to the inward and outward motion of the draw-bar and attached sector-wheel. The said rods are provided at their outer ends with the crank-arms *l*, by means of which the rods and the sector-wheel can be partially rotated and the link-rods *I* and link *J* swung upward till the end of the latter enters the recess in the draw-head and is guided by the flaring mouth into position to be engaged by the link. To prevent the link-rods *I* from being crushed by the opposing draw-heads, the deep vertical notches *M M* are made in the floor of the mouth of the draw-head, into which notches the link-rods enter when the link is swung into position. When the link is thus engaged by the coupling-pin of the draw-head of the car to which said link is connected, its outer end can easily be turned by means of the rods *L* and sector-wheel to enter the link-recess of a draw-head of the approaching car, whether higher or lower than that of the first car. In most instances the difference in height will not be too great to permit the flaring mouth of the draw-head of the approaching car to direct the outer end of the link into position.

For cars having draw-heads differing greatly in height a link having its end inclined downward from its middle may be used.

By means of the joints between the staples *K* and the rods *L* and the elongated bearings of said rods the longitudinal movement of the draw-head and draw-bar are provided for, so that the said lifting-rod *L* will never refuse to act.

The sector-wheel, link, and operating mechanism are connected to each end of a car; but as one link only can be used the link of the opposing car is turned inward and suspended from a hook, *N*, attached at a suitable point to the corresponding draw-bar. If desired, both of the links can be turned thus under the cars and suspended from hooks *N*, and the cars can be coupled by an ordinary straight or crooked link. The levers *e* may be pivoted on the end of the car at their lower ends or other suitable points, and the chains correspondingly attached to the levers. Each lever may have a ring attached to it to engage a hook attached to the car and hold the lever in position to keep the coupling-pin elevated. The pivotal points of the link are preferably placed a little nearer its outer end, to cause its inner end to rest on the floor of the recess of the draw-head and its outer end consequently to keep raised. The coupling-pins are prevented from being lifted entirely from the draw-heads by parts of the pulley-casings above, except when the draw-heads are drawn sufficiently outward for the pins to pass from under the casings.

Having described my invention, I claim—

1. In a car-coupler, the combination, with the draw-head and coupling-pin, of the pulleys journaled above the draw-head upon the end of the car, the chains extending vertically upward from the pin and over said pulleys, and

the levers pivoted to the end of the car near the sides thereof and having the outer ends of the chains secured to them at proper distances from their pivoted points, substantially as specified.

2. In a car-coupler, the combination, with the draw-head and coupling-pin *D*, having the stop-flange *d*, of the casing *f*, secured to the end of the car above the draw-head and provided with the hinged lid *f'*, the pulleys *F*, journaled in the front and rear of said casing, the chains *E*, rising vertically from the pin, passing over said pulleys and through openings in the sides of the casing, and the levers *e*, pivoted to the end of the car and having the outer ends of the chains secured to them, substantially as specified.

3. In a car-coupler, the combination, with the draw-head and coupling-pin, of the link pivoted at about the middle of its length upon the outer ends of swinging bars connected with the draw-bar, and means, substantially as described, whereby the said bars can be swung upward and outward and the end of the link thereby inserted into the recess of the draw-head, substantially as specified.

4. In a car-coupling, the combination, with the draw-head having a flaring mouth and the coupling-pin, of the link having outstanding journals at about the middle of its length, the link-bars having their outer ends mounted on said journals, the sector-wheel journaled in bars, connecting-clips secured, respectively, to the draw-bar and draw-head, and means, substantially as described, whereby the sector-wheel can be swung on its bearings, as specified.

5. The combination, with the draw-head, the draw-bar, the clips attached to the draw-bar, the bars connecting the front and rear clips, the sector-wheel journaled in said bars, and the link pivoted intermediate of its ends to the outer ends of link-bars, of the staples secured to the extended journals of the sector-wheel and the rods *L*, having their inner ends hooked to said staples, passing thence through elongated bearings attached to the truck of the car, and provided with crank arms or handles at their outer ends, substantially as specified.

6. The combination, with the draw-head provided with the notches *M* in its floor, the longitudinally-movable draw-bar, and the coupling-pin, of the link *J*, the link-rods *I*, the sector-bars *g*, provided with bearings for the sector-wheel, the staples *K*, secured to the journals of said wheel, and the rods *L*, hooked to said staples, passing through elongated bearings, and having crank-arms at their outer ends, substantially as specified.

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

JOHN FREY.

Witnesses:

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O. A. BALYENT.