

J. C. CENTER.
Railroad-Frog.

No. 225,049.

Patented Mar. 2, 1880.

Fig. 1.

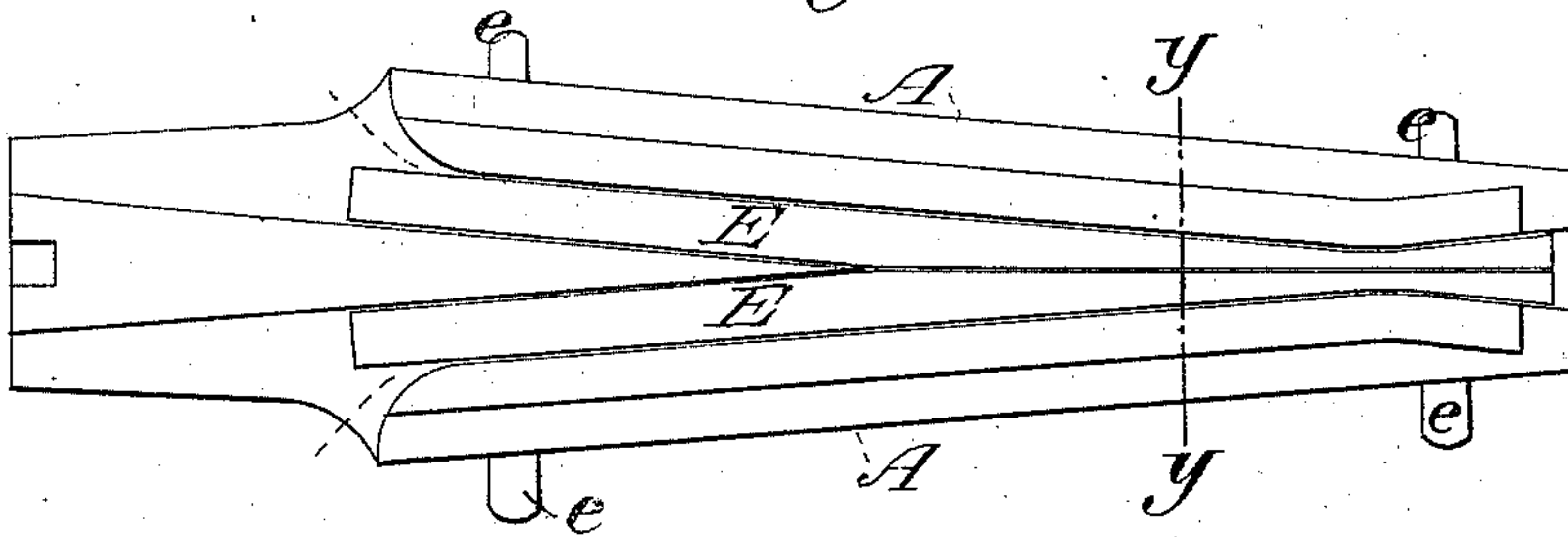


Fig. 2.

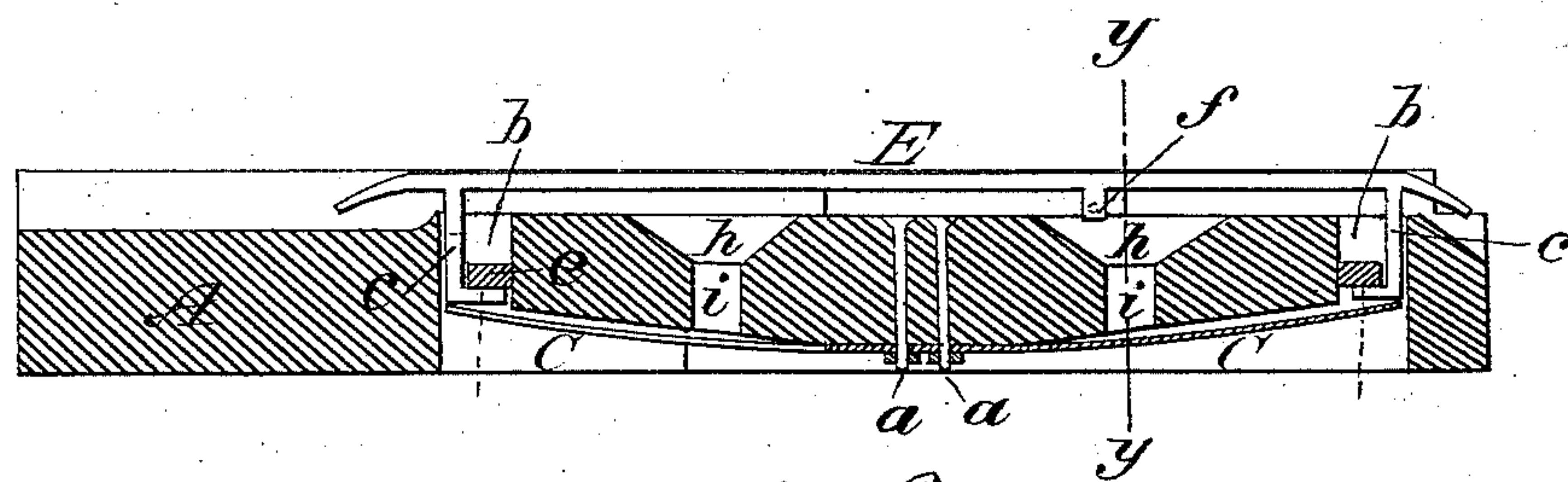
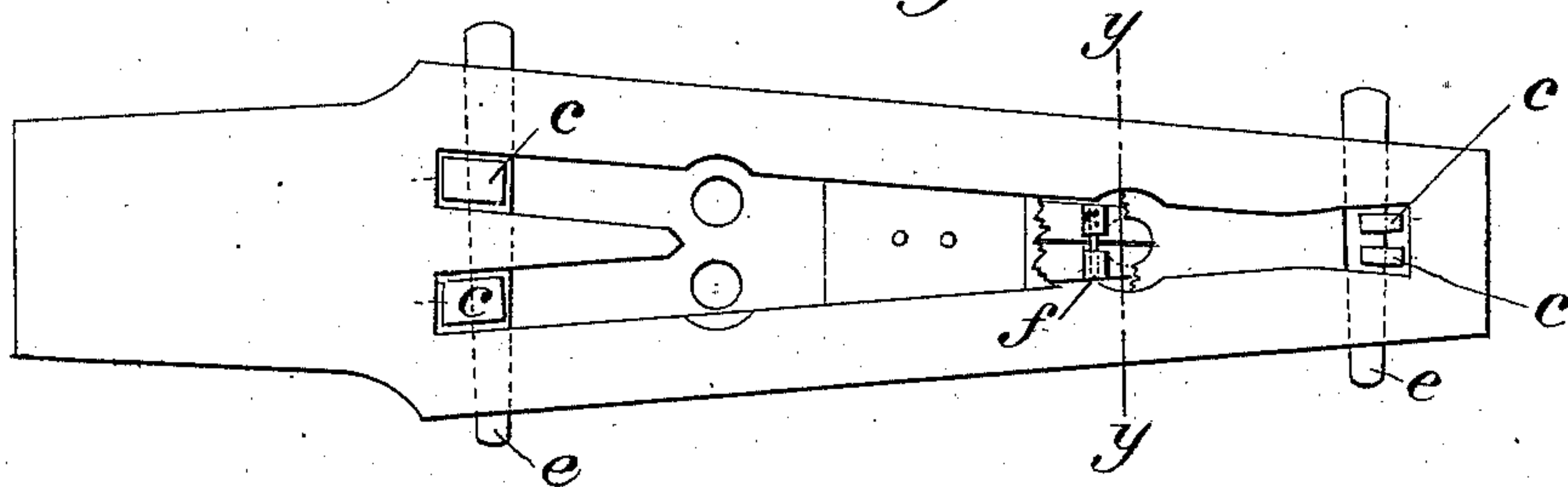


Fig. 3.

Attest:

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Inventor:

Joshua C. Center

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Fig. 4.

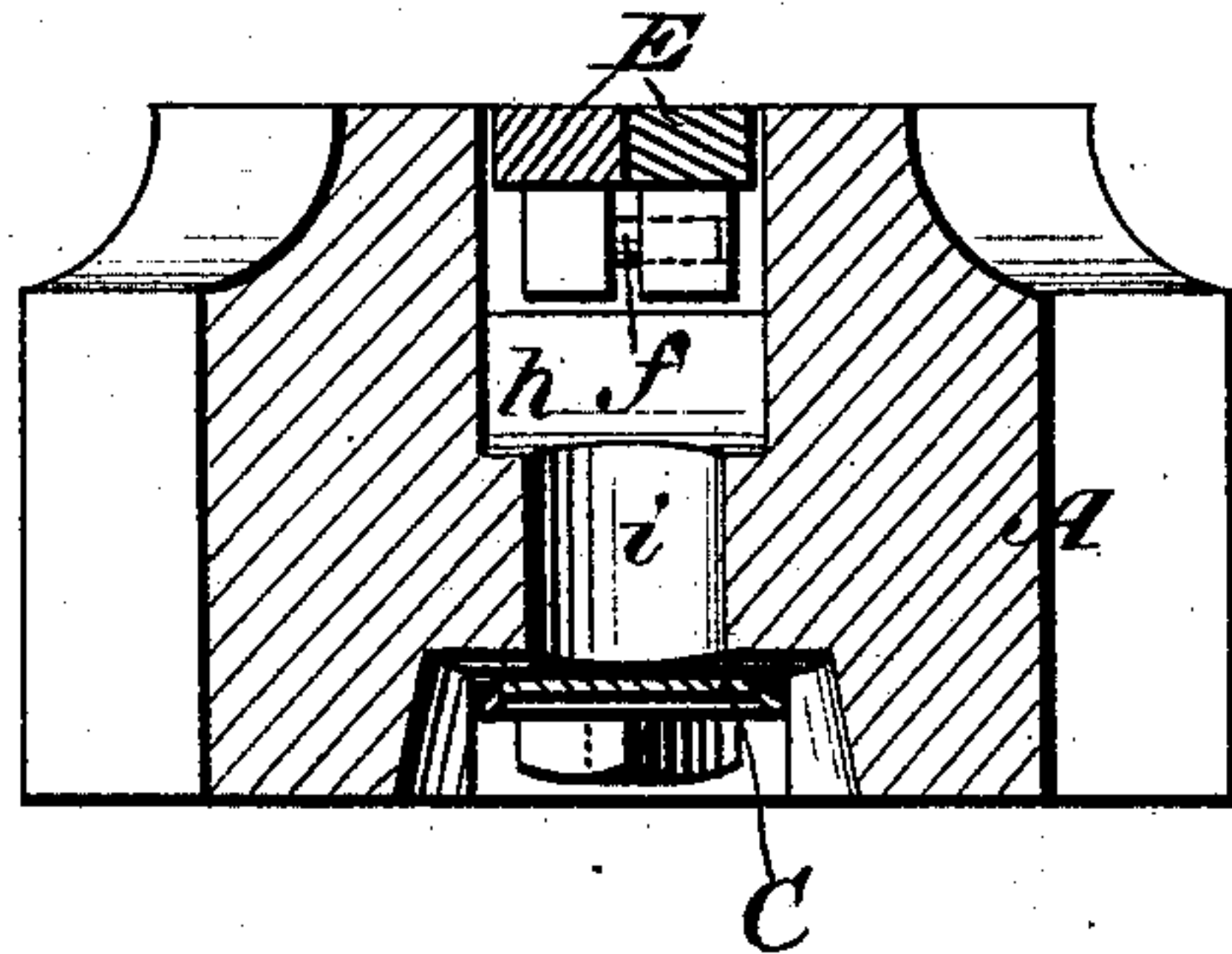


Fig. 5.

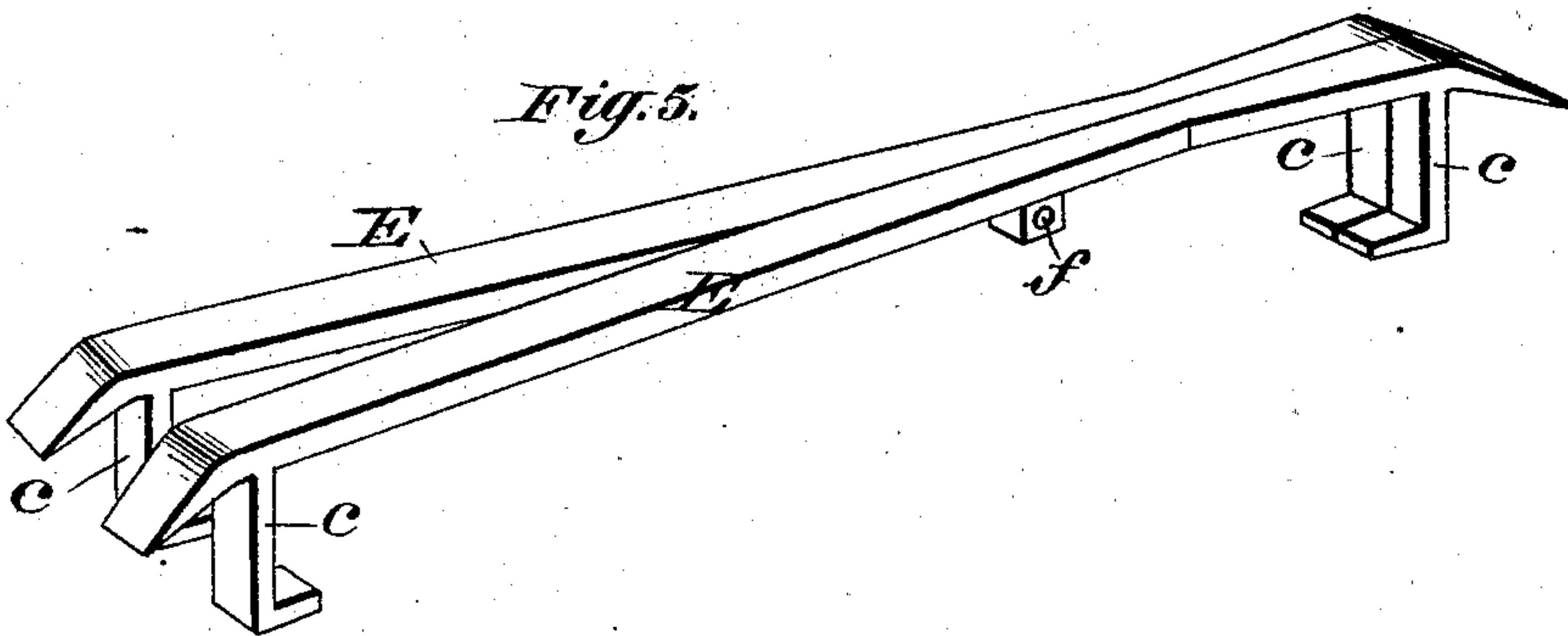
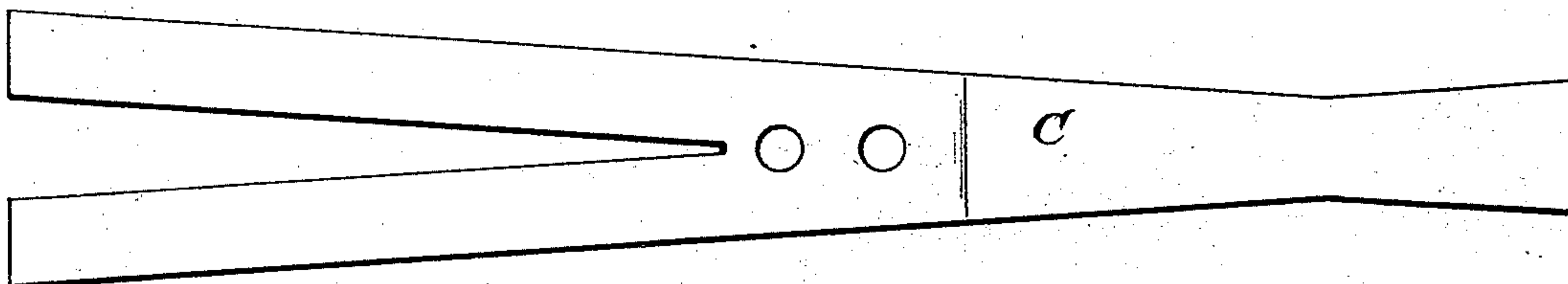


Fig. 6.



Witnesses:
Donn J. Twitchell
David P. Cowl

Inventor:
J. C. Center
By his attys.
Dodge & Son

UNITED STATES PATENT OFFICE.

JOSHUA C. CENTER, OF HUTCHINSON, KANSAS, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO J. B. BROWN AND L. A. BIGGER, OF SAME PLACE.

RAILROAD-FROG.

SPECIFICATION forming part of Letters Patent No. 225,049, dated March 2, 1880.

Application filed June 2, 1879.

To all whom it may concern:

Be it known that I, JOSHUA C. CENTER, of Hutchinson, Reno county, Kansas, have invented certain new and useful Improvements in Railroad-Frogs, of which the following is a specification.

The object of this invention is to provide a safeguard which will prevent the lodgment of stones, ice, and other obstructions in railroad frogs and crossing-plates, and which will also prevent the attendants and others from having their feet caught and held therein, as now frequently happens, to the great peril of life and limb; and to this end the invention consists in a vertically-yielding guard-plate arranged between the rails so as to stand normally flush with their upper faces, said plate being constructed and arranged in the peculiar manner hereinafter described.

Figure 1 represents a top-plan view of a frog having my improvements embodied therein; Fig. 2, a bottom-plan view of the same with the spring removed; Fig. 3, a longitudinal central section; Fig. 4, a cross-section on the line *y y*; Fig. 5, a perspective view of the guard-plates detached; Fig. 6, a plan view of the spring detached.

A represents the body of the frog, which may be of any ordinary or suitable construction, except in the particulars hereinafter enumerated. In the under side it has a deep Y-shaped recess extending nearly its entire length, and adapted to receive a flat steel spring, C, such as is shown in Fig. 6, the spring being made of corresponding form and size, and secured firmly in place by means of two bolts, *a*, at the middle, as shown in Fig. 3. Above the three ends of the spring openings *b* extend upward vertically through the body of the frog between its rails. In the top of the frog there are seated, side by side, two steel plates or guards, E, which jointly cover the entire space between the rails. These plates are made comparatively thin, so as to have a free vertical play between the rails and admit of their sinking below the flanges of the car-wheels. Each guard has at its opposite ends two rigid depending arms, *c*, which extend downward through the respective openings *b* and bear upon the corresponding ends of the spring,

which urges them upward, so as to maintain the plates normally on a level with the top of the rails. The arms *c* have their lower ends bent at right angles and arranged to engage beneath keys *e*, inserted transversely through the frog, so as to limit the ascent of the guard-plates and prevent them from escaping. The arms *c* fit closely, but not tightly, within the openings in the frog, and serve not only to raise and to limit the elevation of the guard-plates, but also as guides to insure a direct downward movement of the plates and prevent them from tipping sidewise.

In order to prevent the two plates from catching or binding upon each other at the inner edges in the event of one being depressed below the other, they are connected at the middle by a transverse pivot, *f*, passed through studs on their under sides, as shown.

The two guard-plates may be united in one; but it is preferred to make them in separate pieces and pivot them together in the manner shown, for the reason that they are permitted to yield independently at the ends and because they have less tendency than otherwise to tip and bind. The ends of the guards extend beyond their depending arms and overhang the face of the frog, as shown, the better to exclude dirt, snow, &c.

In the upper face of the frog, beneath the guard-plates, I form sinks or depressions *h*, into which snow, ice, and other obstructions, finding their way below the plates, will gravitate, and from said depressions I extend holes *i* downward through the frog to permit the escape of the obstructions. These openings are of special importance in connection with the guard-plates, since they avoid the possibility of the plates becoming fast on their elevated position, so as to throw the car-wheels from the rails.

By constructing a frog or crossing-plate in the manner above described the dangers incident to the ordinary frog are entirely avoided. The fact that the plates sink bodily in a vertical direction without tipping sidewise is of special importance, for the reason that they are thereby prevented from cramping or binding, and because they do not, when depressed, leave an opening between them and the rails.

I am aware that it has been proposed to hinge a guard-rail sustained by a spring by the side of a railroad-rail in such manner that it would tip or swing downward under the action of the car-wheels, and I lay no claim thereto. The hinged plate is open to the serious objection that when depressed it leaves an opening at the side of the rail, in which stones and other obstructions will naturally lodge. My plates serve not only to exclude all foreign bodies, but also to eject them from between the rails in case they should fall therein while the plates are depressed by the car-wheels.

While I prefer to make use of the single spring-plate, spiral springs may be substituted.

Having described my invention, what I claim is—

1. In combination with a railroad-frog, a vertically-yielding guard plate or plates having a spring-support therein and arranged to sink bodily without tipping sidewise, substantially as shown.

2. In combination with a railroad-frog, an internal vertically-movable guard-plate provided with guides to maintain it in a horizontal position, and a spring arranged to maintain

the plate normally on a level with the top of the rails.

3. The combination of the frog provided with openings *b*, the guard-plates provided with arms *c*, a spring or springs acting beneath said arms, and stops, substantially such as shown, to limit the upward movement of the plates.

4. The yielding guard-plate, consisting of two pieces or sections united by a pivot, and arranged to operate as described and shown.

5. The frog provided with the yielding guard-plate and with the discharge-openings beneath the plates, as and for the purpose described and shown.

6. The combination of the frog provided with the openings *b* and the recess in the under side, the guard-plate provided with the depending arms, the Y-shaped spring seated in the under side of the frog, and the transverse keys arranged to engage with the arms of the guard-plate.

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Attest:

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