

(No Model.)

4 Sheets—Sheet 1.

J. W. COOPER.  
VESTIBULE CAR.

No. 566,712.

Patented Aug. 25, 1896.

Fig. 1.

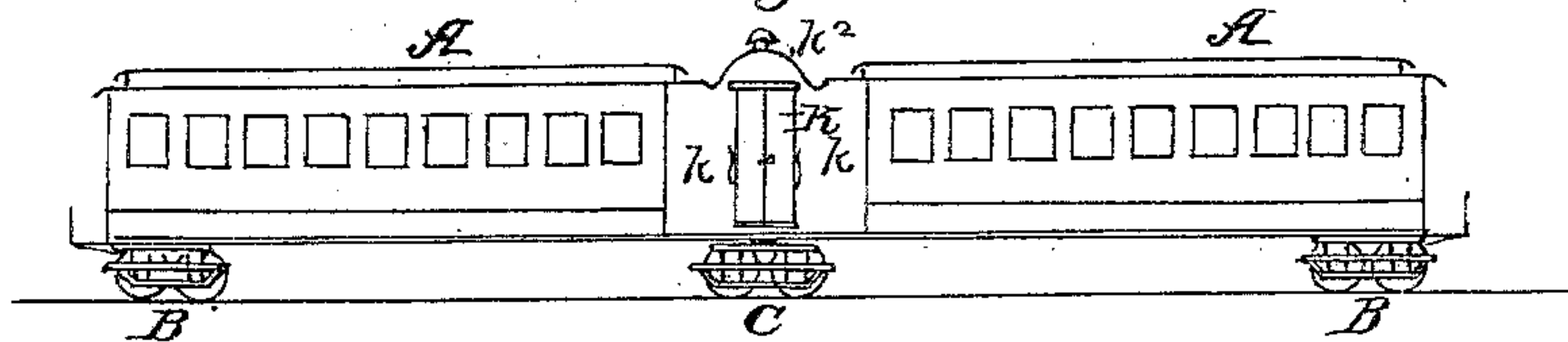
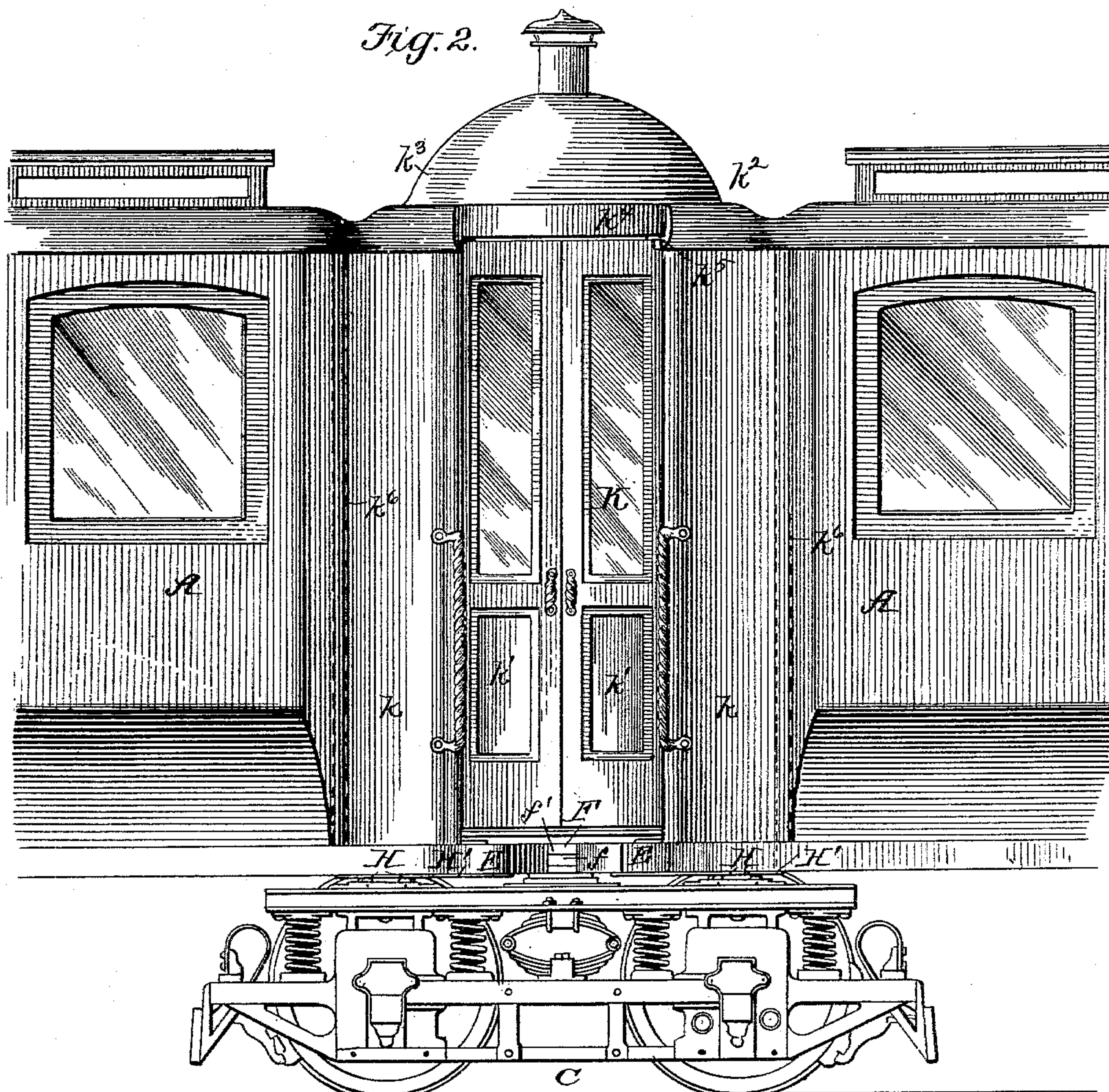


Fig. 2.



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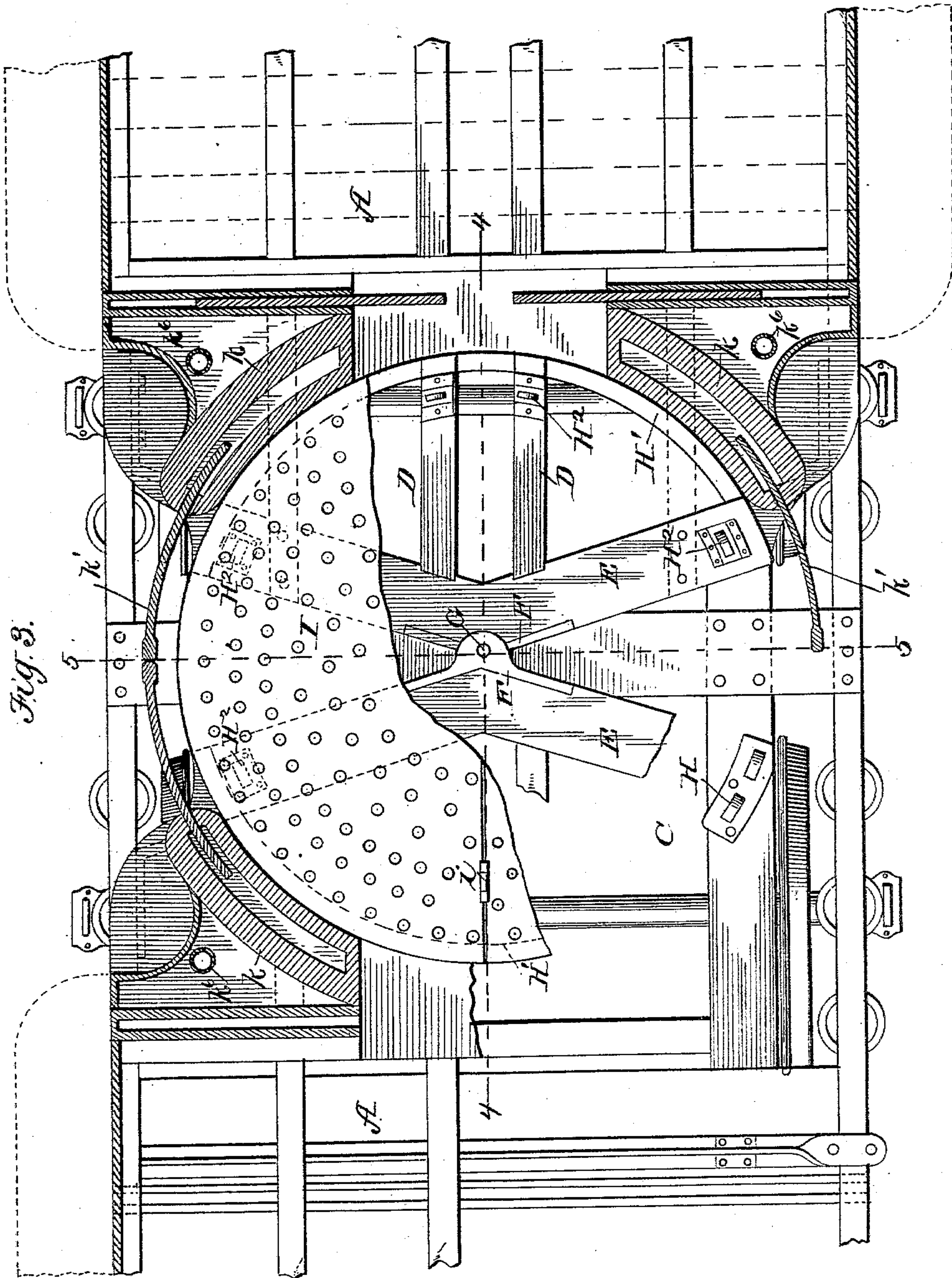
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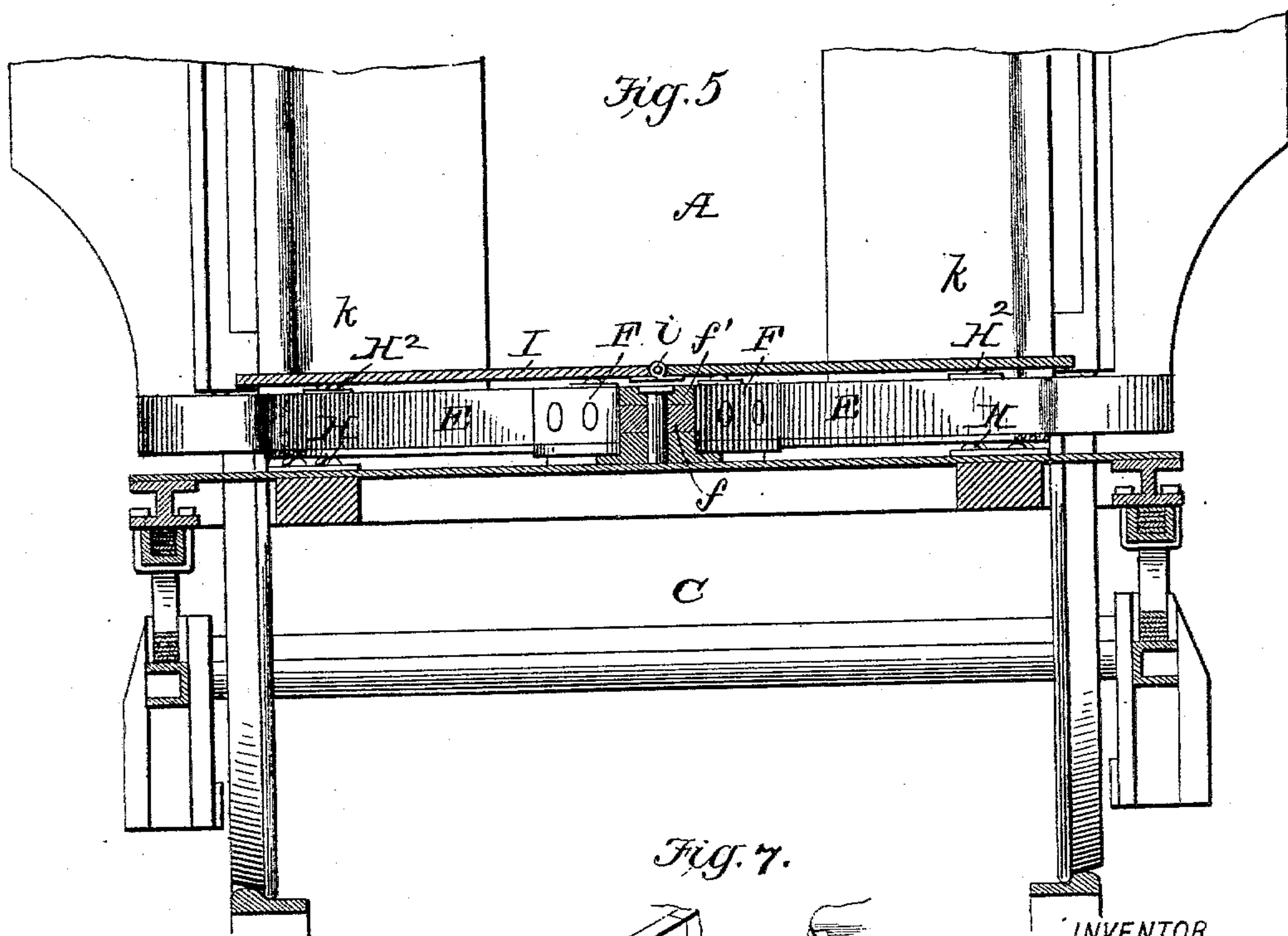
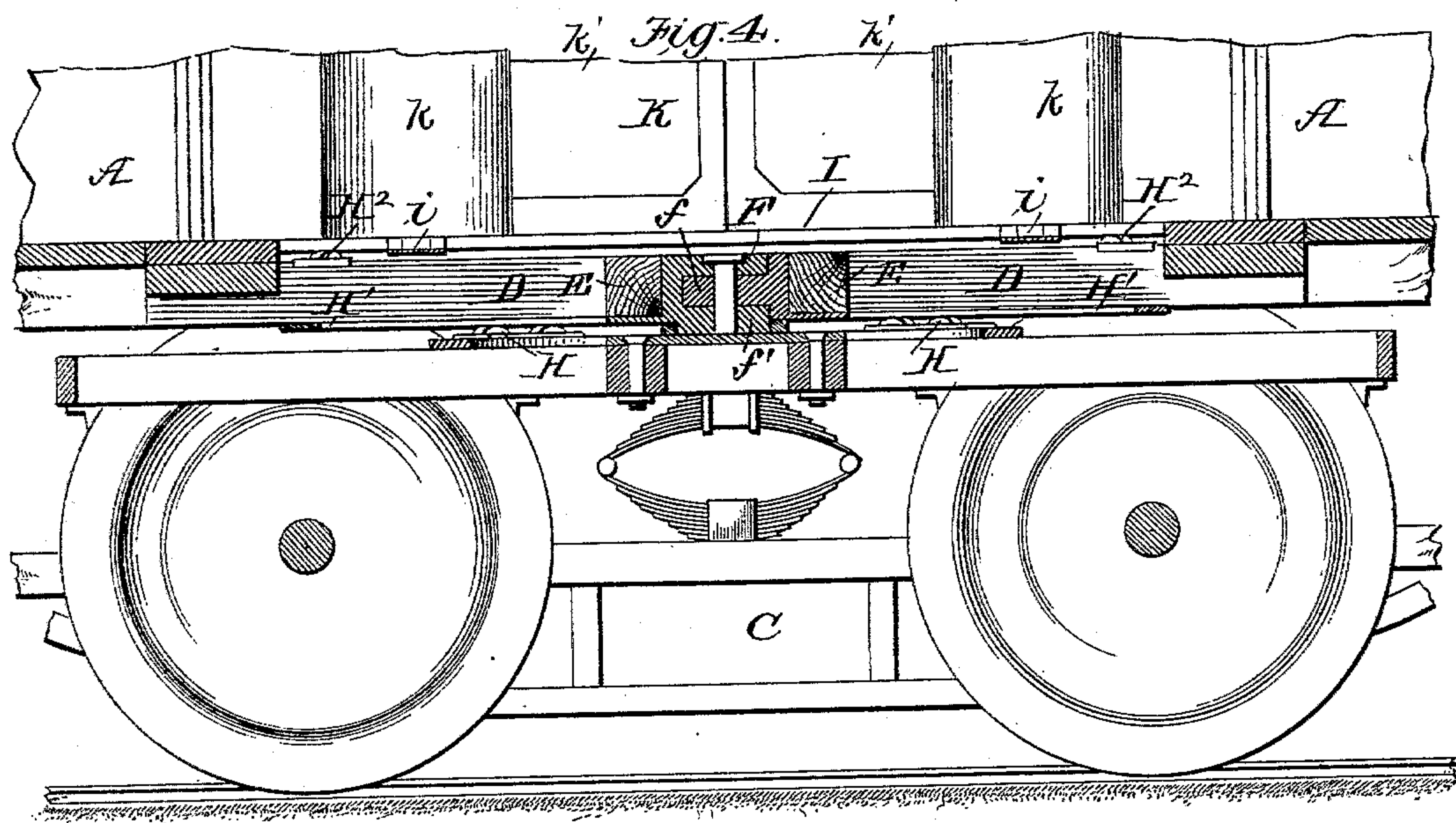
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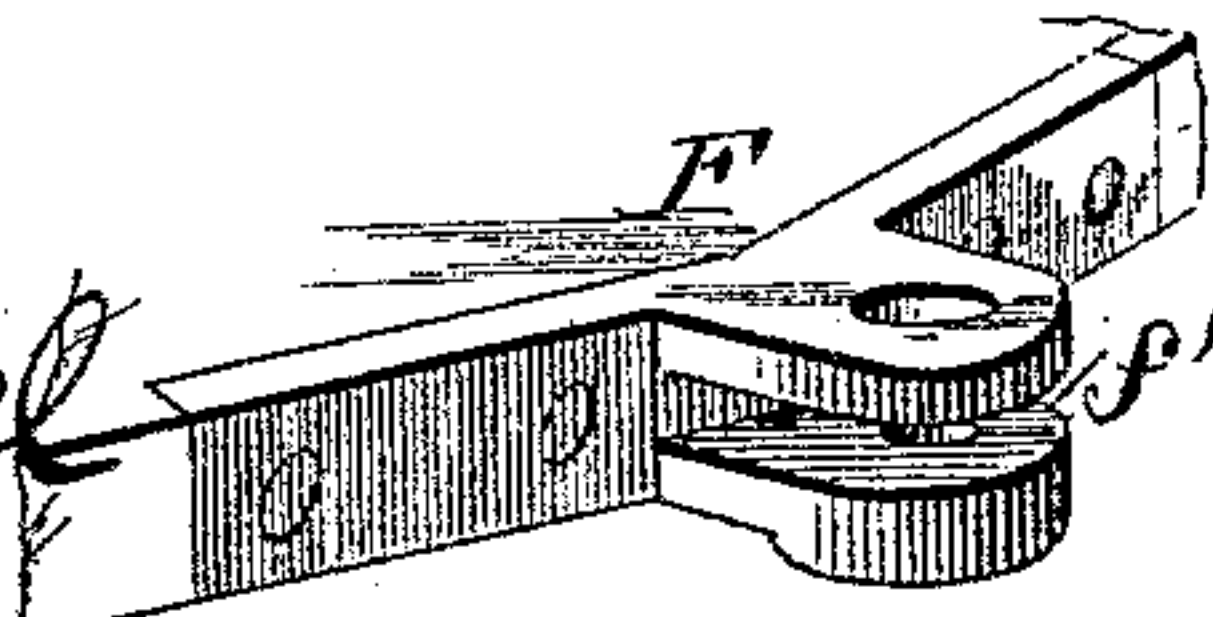
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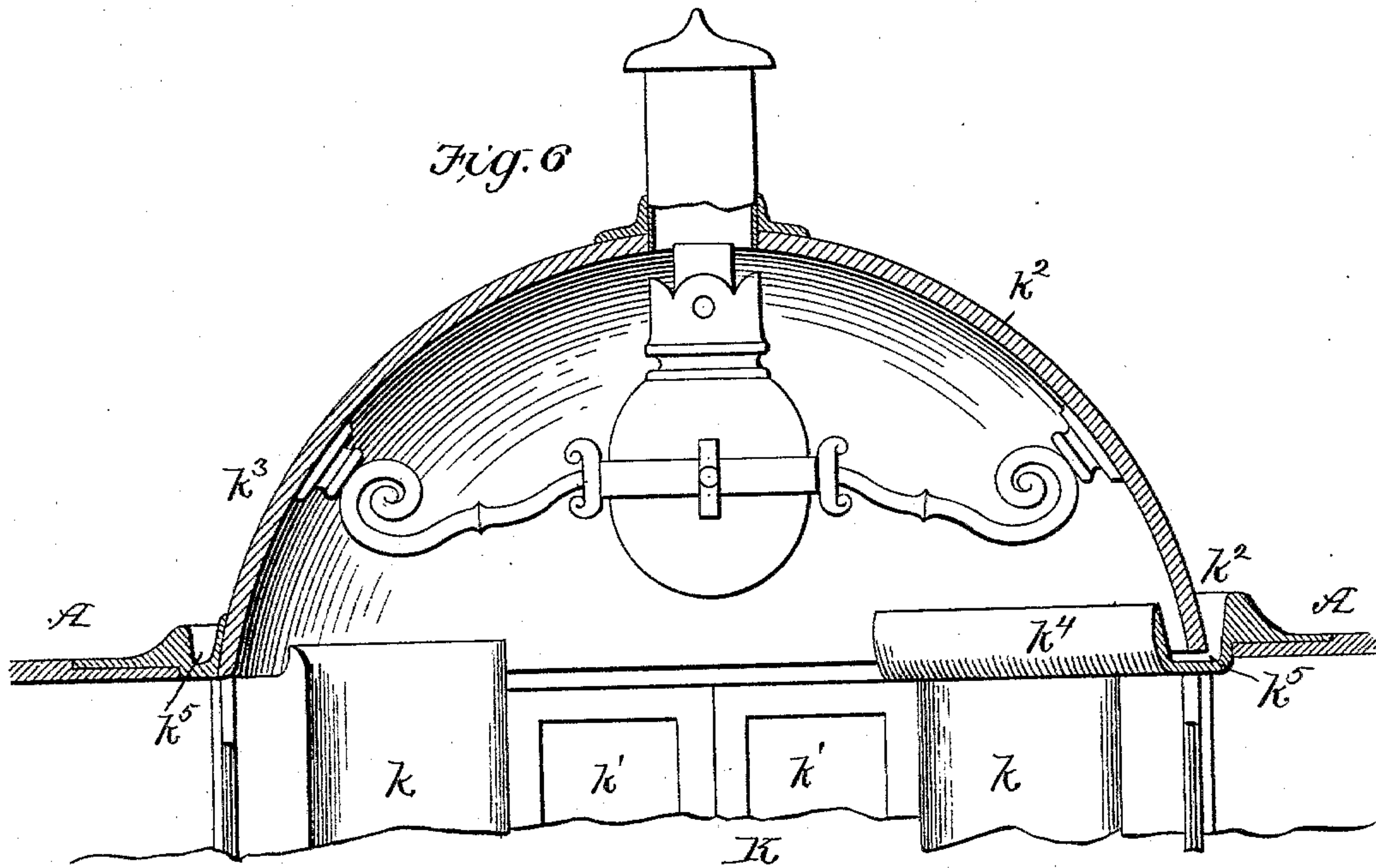
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4 Sheets—Sheet 4.

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# UNITED STATES PATENT OFFICE.

JOHN W. COOPER, OF TEMPERANCE, MICHIGAN.

## VESTIBULE-CAR.

SPECIFICATION forming part of Letters Patent No. 566,712, dated August 25, 1896.

Application filed June 4, 1895. Renewed July 23, 1896. Serial No. 600,312. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. COOPER, of Temperance, in the county of Monroe, State of Michigan, have invented Improvements in Cars, of which the following is a specification.

This invention relates generally to cars, and particularly to street-railway cars, although the principles of my invention are applicable to all classes of passenger and freight cars.

The objects of my invention are, first, to provide a novel means for connecting two cars, and also a radial truck for supporting such connections; secondly, to provide a novel form of vestibule between said cars, including both the side and canopy; thirdly, to provide a novel form of platform.

With these and such other objects in view as will appear hereinafter my invention consists in the peculiar construction of the various parts and the novel combination and arrangement, all of which will be fully explained, and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a diagrammatic view illustrating the broad principles of my invention. Fig. 2 is a side elevation of the ends of two cars, supported by a common truck, having a common vestibule. Fig. 3 is a sectional view of the ends of said cars, showing the platform as supporting the timbers, &c. Fig. 4 is a longitudinal vertical section on the line 4 4 of Fig. 3. Fig. 5 is a vertical transverse section on the line 5 5 of Fig. 3. Fig. 6 is a detail view illustrating the arrangements of the dome-like cover. Fig. 7 is a detail view of the socket or hinged connection between the two end frames of the cars.

Referring now to the drawings, A A indicate two cars which in general construction are the same as an ordinary street-railway car. These cars have each a truck B at their remote ends, but are devoid of trucks at their adjacent ends, said ends being connected and supported upon a radial truck C, said trucks B and C being of a construction similar to that shown and described in my Patent No. 513,889, dated March 22, 1893. The truck C is also intended to carry any form of motor, either electric, air, gas, or steam.

The cars at their remote ends are construct-

ed with or without the usual form of platforms, but the platform between said cars is of peculiar construction and purpose.

The bottom timbers D D of the cars project some distance beyond the end of car-body, the central ones projecting farther than the side beams, and connected with said longitudinal beams are the end pieces or beams E E, said beams E carrying the hinged casting F, by means of which the cars are coupled together, a key-bolt G passing through the sections of said hinge-casting and journalizing in the center of the truck and cars. The hinged casting F comprises the male portion *f* and female portion *f'*.

The beams E E are so shaped as to leave a segment upon each side, whereby the cars can move about their common center in either direction through an angle of thirty degrees, so that said cars can readily turn sharp curves.

The truck C, which can be a two, four, or eight wheeled truck, has rollers H H mounted upon the upper portion of its frame, and upon said rollers move the semicircular tracks H' H', secured upon the under side of the timbers D D of the platforms, so that the cars will move freely upon the supporting-truck. The timbers D and beams E also carry rollers H<sup>2</sup> H<sup>2</sup> upon their upper faces, upon which rests the platform proper, I, which is circular in shape and rests upon timbers D and beams E, as clearly shown, said platform being preferably made of thick metal and of two sections hinged together, as shown at *i*. It would thus be seen that the two cars have a common truck and platform, which permits them to round sharp curves without in any manner affecting the radial truck or platform proper.

Between the opposing ends of the cars I provide a vestibule K, consisting of the rigid side pieces *k*, which extend outward from the body of the car in the arc of a circle, the movable doors *k'*, sliding in the rigid side portion, and the top portion *k*<sup>2</sup> for covering said vestibule.

The rigid side pieces are bent outward from the end of car and are formed with pockets or ways to receive the sliding doors *k'*, which doors are slid back and forth to open or close the entrance to the vestibule. These doors also travel upon rubber rollers to avoid all



noise and jar. The top  $k^2$  comprises a dome-shaped portion  $k^3$ , made rigid with one of the cars, and which works on the portion  $k^4$  upon the opposite car, the portions  $k^3$  and  $k^4$  each having a gutter  $k^5$  arranged at the bottom thereof to receive the water from the dome, which water is drained off through the water-pipes  $k^6$ , leading from each of said gutters.

It will thus be seen that as the cars round a curve the doors slide freely in and out, and the dome of the top turns with one car in the socket-shaped portion of the other car, said dome and socket being made in the arc of a circle to permit such movement.

The purposes of all the various parts of my invention having been described in connection with the detailed description of their construction, a further recital of such purposes is not necessary here.

It is obvious that the construction and arrangement of the various parts of my invention can be considerably varied without departing from the spirit of said invention, the essential features of which are the employment of a radial truck between the adjacent ends of two cars for the purpose of separating said adjacent ends, and also the arrangement of a suitable vestibule between said cars which is of such construction as to permit said cars to readily round curves, and also to provide means for the ready access through said cars through the vestibule.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, of a car having a dome-like portion, the adjacent car having a socket-like portion, the vestibule connected to said cars, the platform common to the two cars, and the radial truck arranged between the adjacent ends of said cars, and forming the sole support for said ends, substantially as shown and described.

2. In a vestibule, the dome-like portion rigid with the top of one car, and the socket-like section rigid with the top of another car, the

dome-section being adapted to turn in the socket-section, substantially as shown and described.

3. In a vestibule, the combination with the rigid side portions, the dome and socket portions, the gutters and drain-pipes, all arranged substantially as shown and described.

4. The combination with the cars, of a central truck, the ends of said cars being connected with each other, and with the truck, the rollers carried by the truck, the rollers carried by the ends of the car, and a circular platform resting upon the rollers of the ends of car, said platform being composed of two sections hinged together, substantially as shown and described.

5. The combination with the cars, and the radial truck, and the common platform, the vestibule arranged between the cars, said vestibule comprising the rigid side pieces, the movable doors, the dome-shaped cover, attached to one car, and the socket-like portion attached to the other car, the gutters and drain-pipes, all arranged substantially as shown and described.

6. The combination with the cars, of the end timbers and beams, the hinged casting, the king-bolt or coupling-pin, the radial truck centered upon said king-bolt or coupling-pin, the antifriction-rollers carried by the truck, the semicircular trucks upon the bottom of the timbers, the antifriction-rollers upon the top of the timbers, the sectional circular platform arranged upon the end timbers and beam, the vestibule portion comprising the rigid side pieces, movable doors, and the dome-shaped top portion, and the socket-like portion, in which the dome-shaped portion moves, all of said parts being constructed and arranged, substantially as shown and described.

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

JOHN W. COOPER.

Witnesses:

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CHAS. R. SPRAGUE.