

(No Model.)

W. H. BARROWS.

SAND CAR.

No. 370,232.

Patented Sept. 20, 1887.

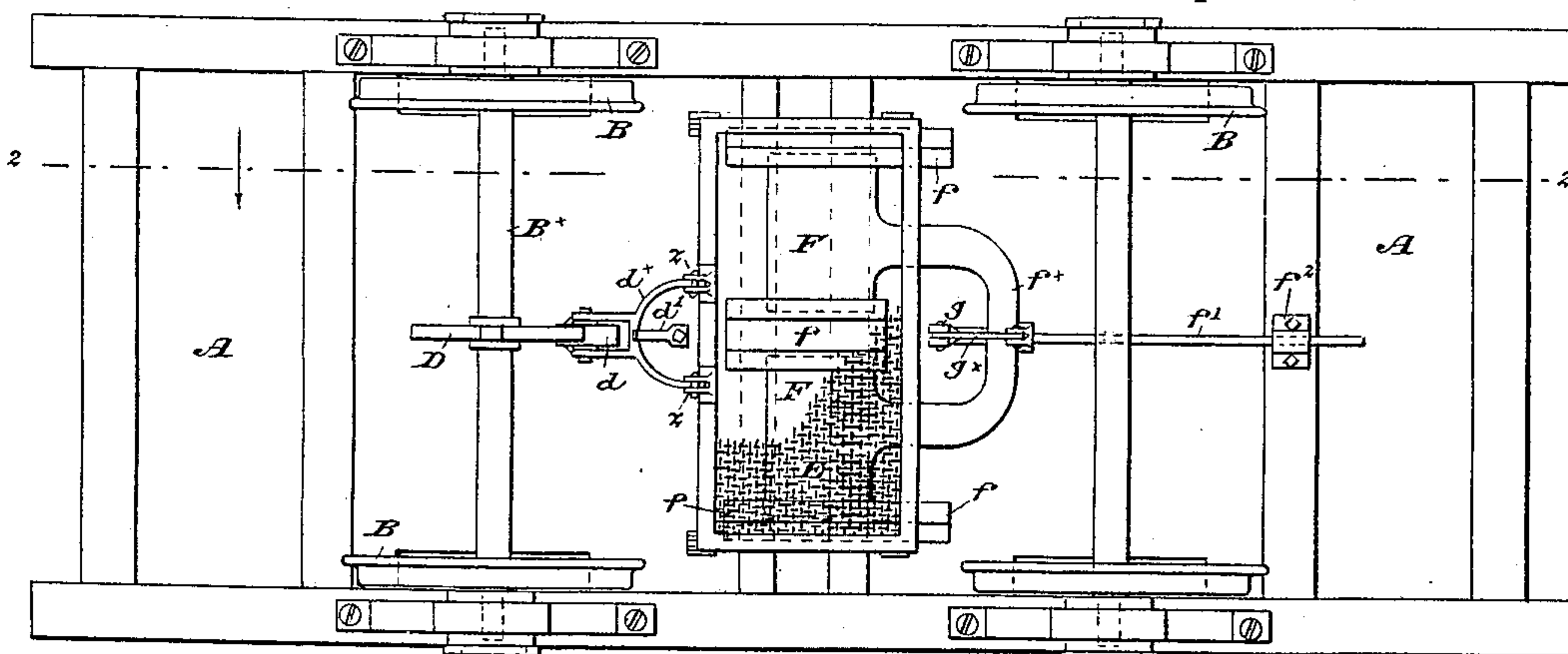


Fig. 1.

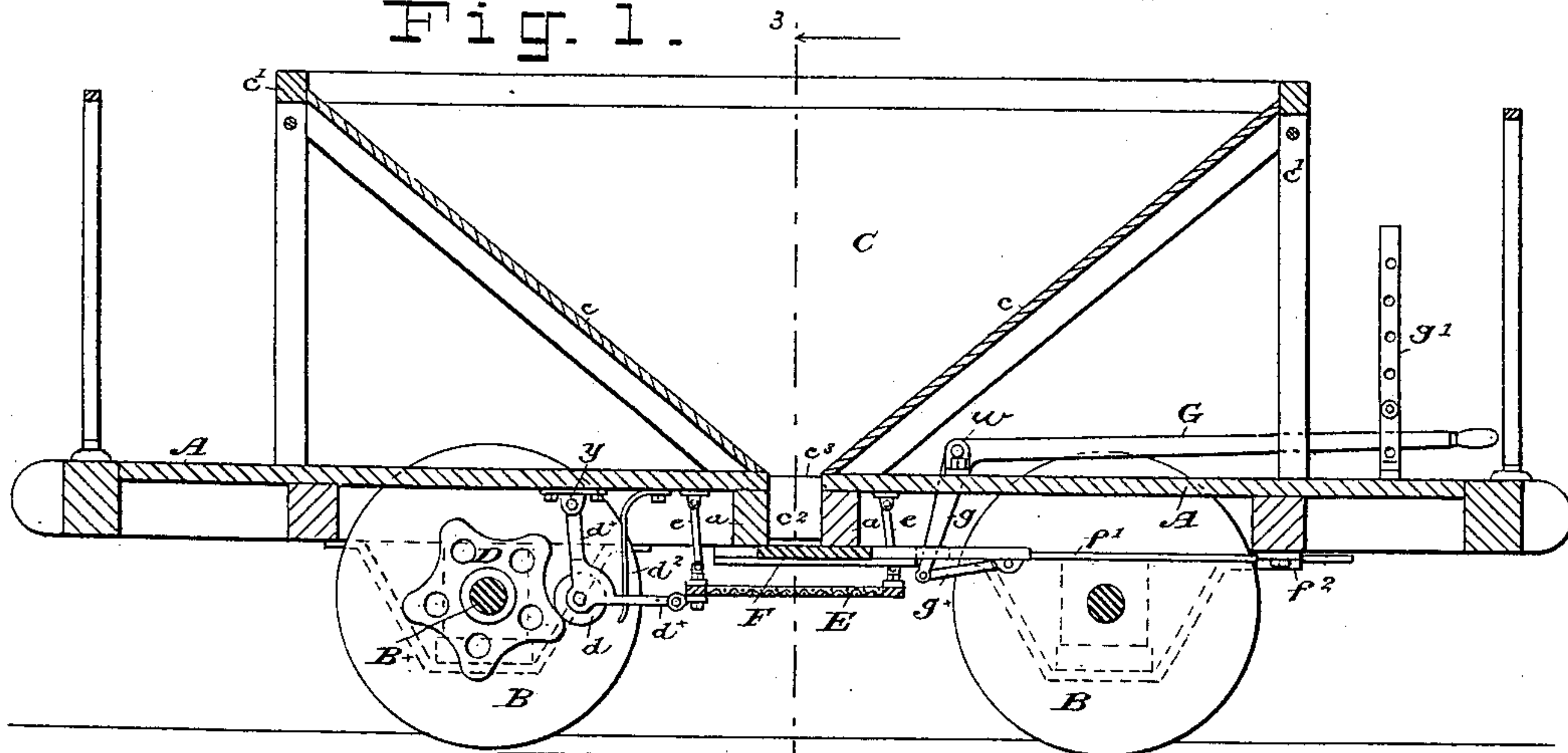


Fig. 2.

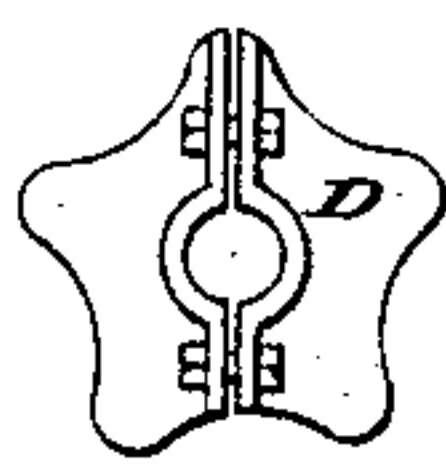


Fig. 4.

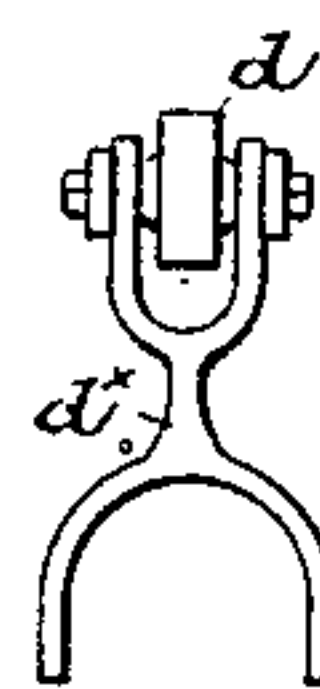


Fig. 5.

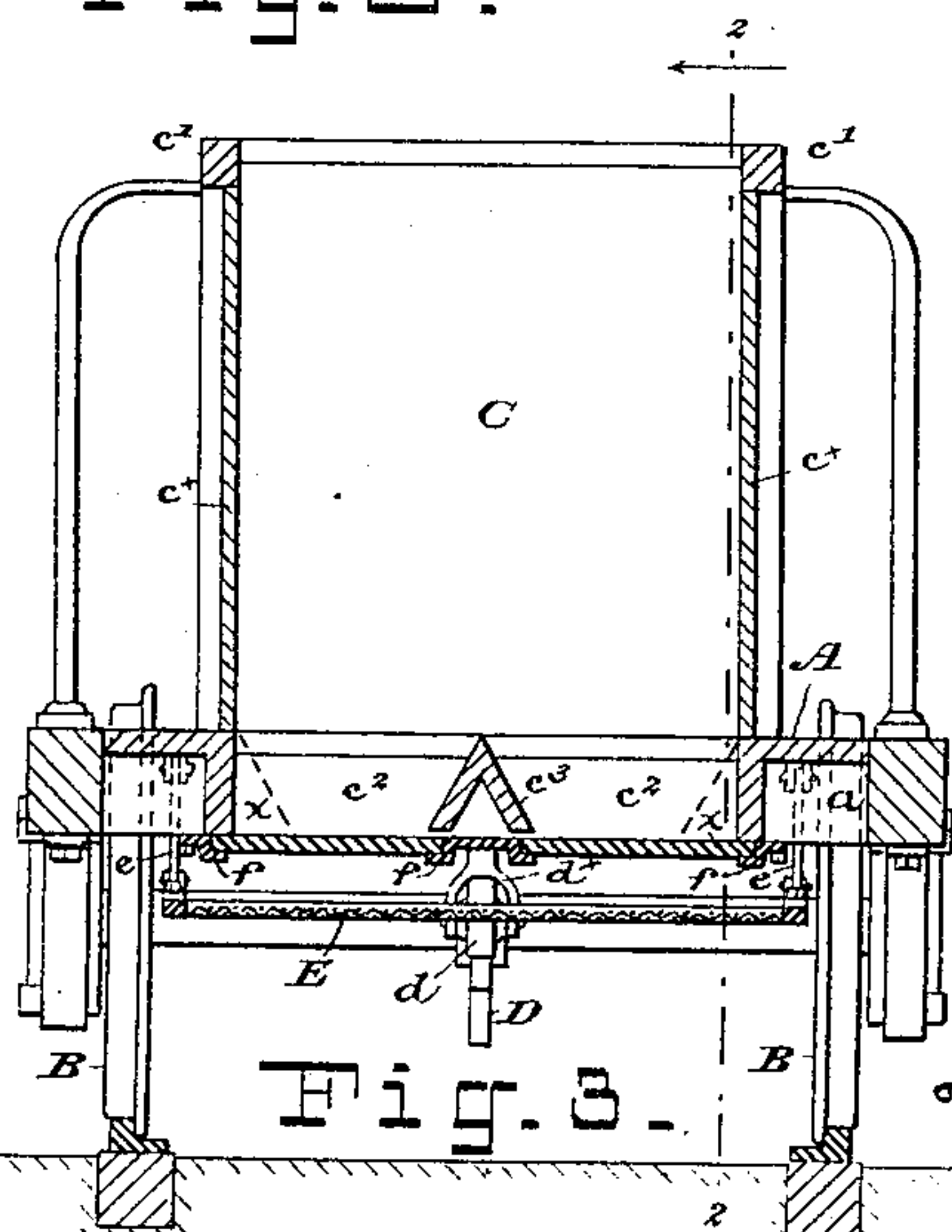


Fig. 3.

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# UNITED STATES PATENT OFFICE.

WILLIAM H. BARROWS, OF BROOKLYN, NEW YORK.

## SAND-CAR.

SPECIFICATION forming part of Letters Patent No. 370,232, dated September 20, 1887.

Application filed March 29, 1887. Serial No. 232,853. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. BARROWS, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Sand-Cars, especially designed for use on horse-railways, of which the following is a specification.

My invention relates to sand-cars for sprinkling sand on street or horse railway-tracks between the rails where the horses walk; and my object is to provide the car with a hopper to hold and freely deliver the sand, having a simple and convenient mechanism for regulating the delivery of the sand from the hopper and for cutting it off entirely, and means for agitating a screen arranged under the hopper-outlet.

My invention will be hereinafter fully described, and its novel features carefully defined in the claims.

In the drawings, which serve to illustrate my invention, Figure 1 is a plan view of the bottom of the car, as seen from below. Fig. 2 is a longitudinal vertical section of the car, the plane of the section being indicated by line 2 2 in Figs. 1 and 3. Fig. 3 is a transverse vertical mid-section of the car. Figs. 4 and 5 illustrate modified details that will be hereinafter described.

A represents the platform or floor of the car, mounted in the usual manner upon wheels B B. The car will be provided with the usual braking devices and draft-hooks; but these I have not shown in the drawings, as they form no part of my invention, do not co-operate therewith, and would tend to render the drawings obscure.

On the platform A is constructed a hopper, C, which has two sloping sides,  $c c$ , and two perpendicular ones,  $c^x c^x$ . This hopper is supported by a suitable frame and posts,  $c'$ . At the bottom of the hopper in the car-floor is formed the hopper-outlet  $c^2$ . This outlet I prefer to divide by a bridge,  $c^3$ , of  $\Lambda$  form, where the car is to be employed on roads employing two-horse cars, the object being to avoid waste of sand by sanding the middle portion of the track between the horses where sand is not needed. Where the car is to be employed on roads employing one-horse cars this bridge may be omitted, and in lieu thereof

angle-blocks  $x x$  may be fitted into the ends of the hopper-outlet, as indicated by dotted lines in Fig. 3. These would serve to confine the outflow of sand to the middle of the space between the track-rails. The hopper-outlet is, by preference, arranged between two cross-beams,  $a a$ , of the car-platform.

On one of the car-axes  $B^x$  is mounted a star-shaped cam, D, which is fixed to and rotates with the axle. This cam acts on a roller,  $d$ , rotatively mounted in a suspended frame,  $d^x$ , pivoted at  $y$  to the bottom of the platform.

The vertical portion of frame  $d^x$  is forked to receive said roller  $d$ , and the horizontal portion is forked, and its ends are coupled, at  $z z$ , in some convenient manner, to a sand-screen, E, of wire-gauze, suspended by links  $e e$  from the under side of the platform below the hopper-outlet  $c^2$ . In Fig. 1 I have shown only a part of the screen E, as its presence would obscure the parts above it.

When the car is in motion, the rotation of the star-cam D, acting upon roller  $d$ , imparts a vibratory motion to the screen E, a spring,  $d'$ , pendent from the under side of the platform, keeping said roller  $d$  pressed up elastically to said cam. This spring rests against the suspended frame  $d^x$  between the forks of its horizontal portion, as seen in Fig. 1.

On the under side of the car-platform are secured keepers  $f f$ , in which play cut-off slides F F, which play across the two divisions of the hopper-outlet and serve to regulate the passage of sand from said outlet. These slides are preferably connected together rigidly by a tie,  $f^x$ , and are provided with a guide-rod,  $f'$ , which plays through an eye,  $f^2$ , on the under side of the platform.

G is a hand-lever for operating slides F. This is an elbow-lever, fulcrumed at  $w$  on the platform A between two ears or lugs secured to said platform. The short arm  $g$  of this lever G depends through a slot in the platform, and is coupled to the tie  $f^x$  by means of a short connecting-rod,  $g^x$ . When the long arm of lever G is raised, the slides F are drawn back, thus opening the hopper-outlet, and when it is lowered the slides are pushed forward in a greater or less degree, closing the hopper-outlet. The long arm of the lever plays in a guide,  $g'$ , made from a strip of iron bent upon itself to form a flat loop, and its ends secured to the



platform. This guide has holes in its opposite sides to receive a pin or pins to hold the lever in any position or at any elevation at which it may be set.

5 The vertical sides  $c^x$  of the hopper C are arranged at the sides of the car. They need not stand absolutely vertical; but this is the most convenient arrangement.

The star-cam D, which is usually made from  
10 cast-iron, may be cast in halves and provided with flanges to receive bolts for bolting these halves together when they shall have been placed on the axle. This sectional or halved construction is illustrated in Fig. 4, which  
15 shows cam D detached.

It is not absolutely essential that the upright and horizontal parts of the suspender  $d^x$  shall be cast or formed integrally. They may be constructed separately, and both be hinged or  
20 pivoted on the axis of wheel  $d$ , as illustrated in Fig. 5.

Having thus described my invention, I claim—

1. In a sand-car for street-railways, the combination, with the platform and the supporting car-wheels, of the hopper mounted on said platform and provided with an elongated outlet extending across the space between the rails of the track, said outlet being divided by  
25 a bridge,  $c^3$ , arranged at the middle thereof, whereby the sand is deposited only in the paths followed by the two horses drawing the cars.

2. In a sand-car, the combination, with the platform and hopper, of the wheels and axles, the suspended screen arranged below the hopper-outlet, the star-cam D on one of said axles, the wheel  $d$ , the suspender  $d^x$ , coupled to said screen and carrying said wheel, and the spring  $d'$ , which keeps said wheel pressed up to said cam, substantially as set forth. 35

3. In a sand-car, the combination, with the platform and hopper mounted thereon, of the slide controlling the hopper-outlet, the elbow-lever G, fulcrumed on the platform, the link  $g^x$ , connecting the short arm of said lever with said slide, and the guide  $g'$ , embracing said lever, substantially as set forth. 40

4. In a sand-car, the combination, with the platform, of the hopper mounted thereon, said hopper having an outlet divided at its middle by a bridge,  $c^3$ , of  $\Lambda$  form, the connected slides F F and their guides or keepers, the elbow-lever G, fulcrumed at  $w$  on the car-platform, the link  $g^x$ , coupling said slide to the short arm  $g$  of said lever, and the guide  $g'$ , embracing said lever, all arranged substantially as set forth. 50

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WM. H. BARROWS.

Witnesses:

HENRY CONNETT,  
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