

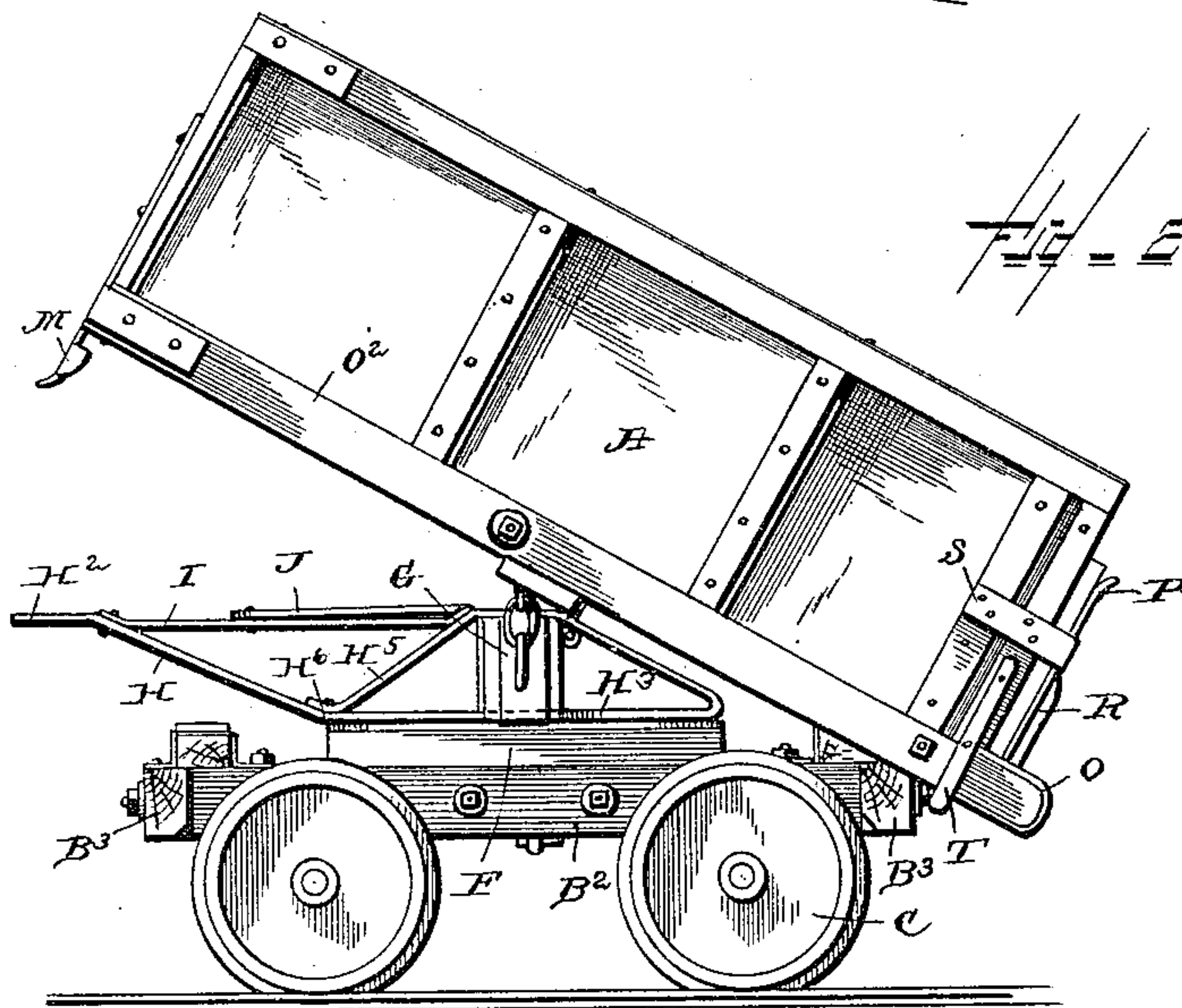
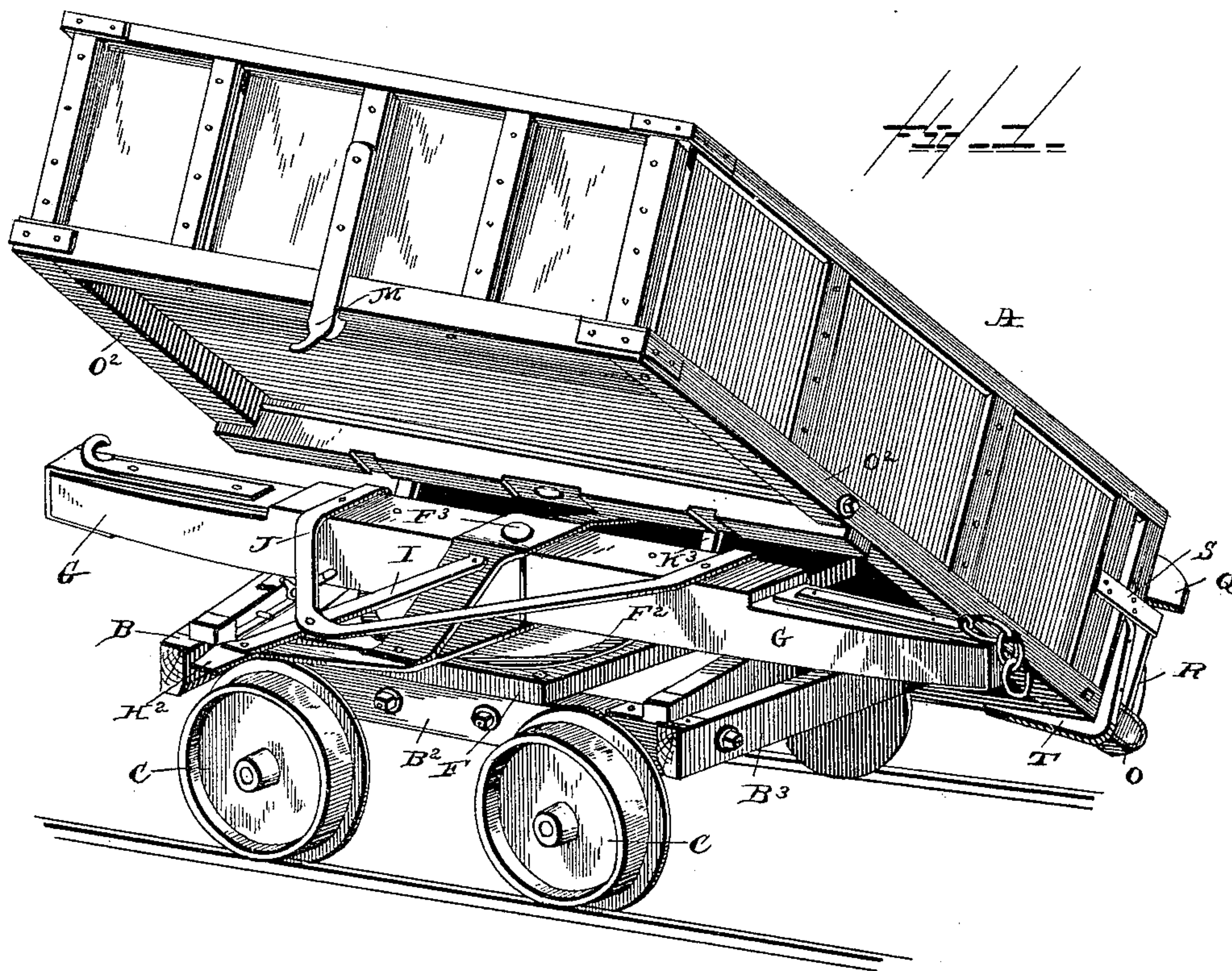
(No Model.)

2 Sheets—Sheet 1.

J. W. ALFRED.  
DUMPING CAR.

No. 403,571.

Patented May 21, 1889.



Witnesses,

*Albert Spiden.*

*Elida C. Hough.*

Inventor,

*James W. Alfred*

By his Attorney

*Franklin H. Hough*

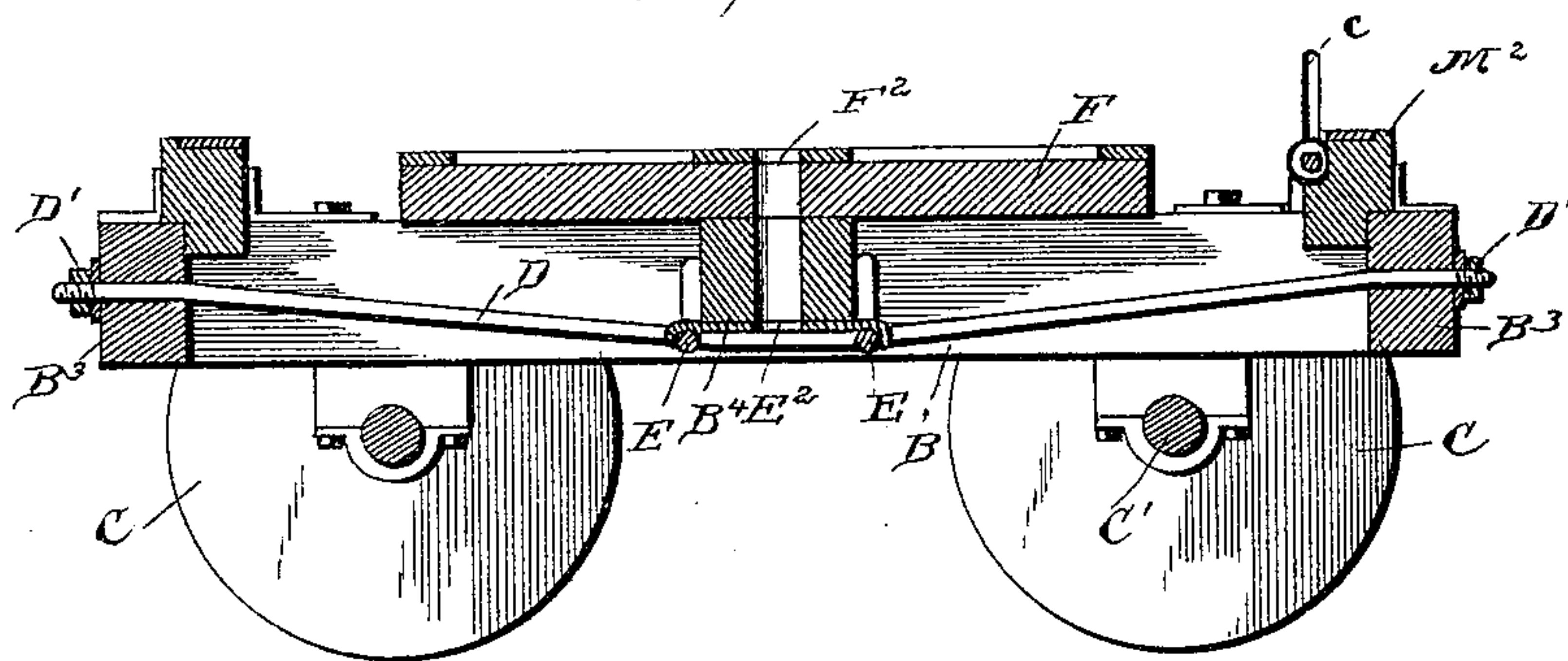


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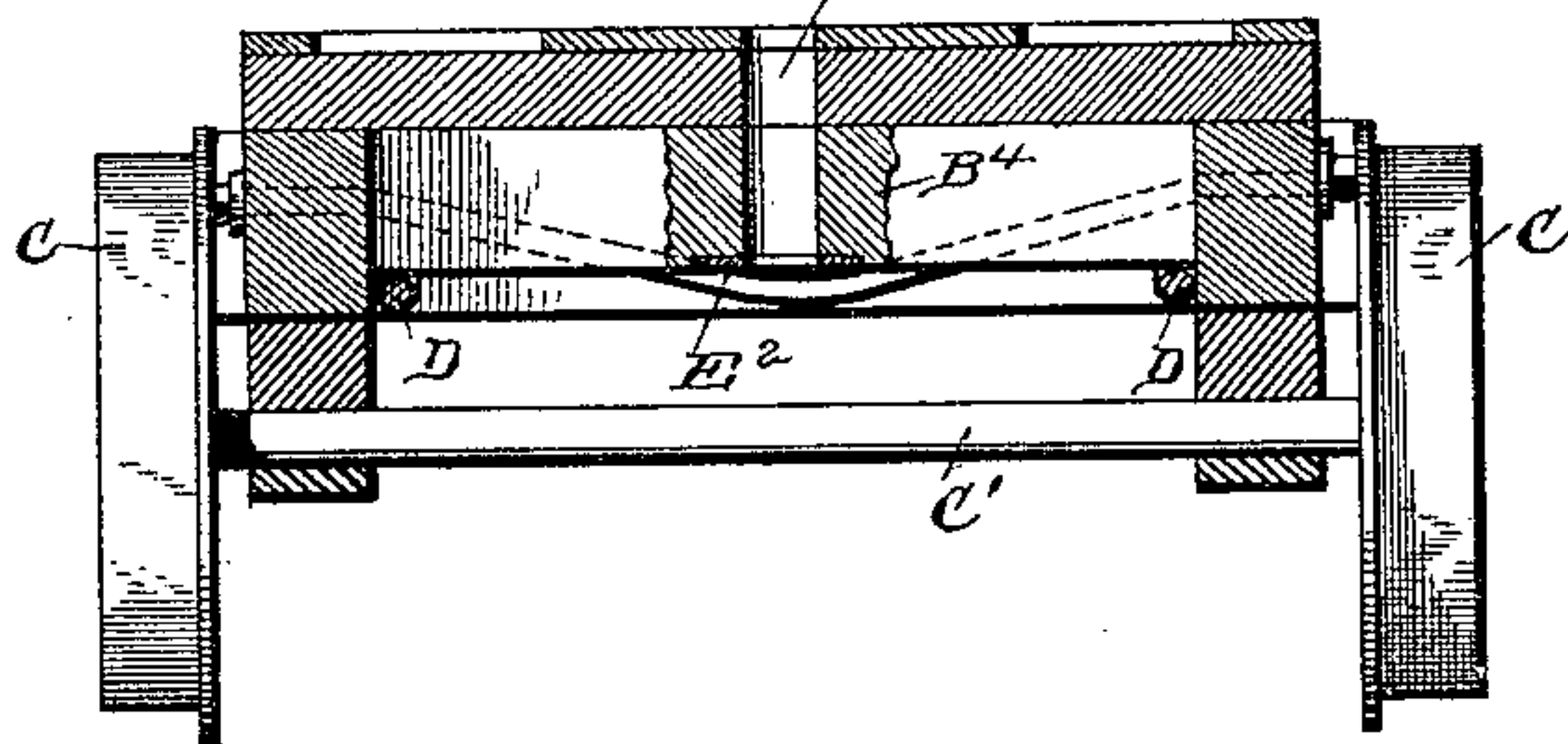
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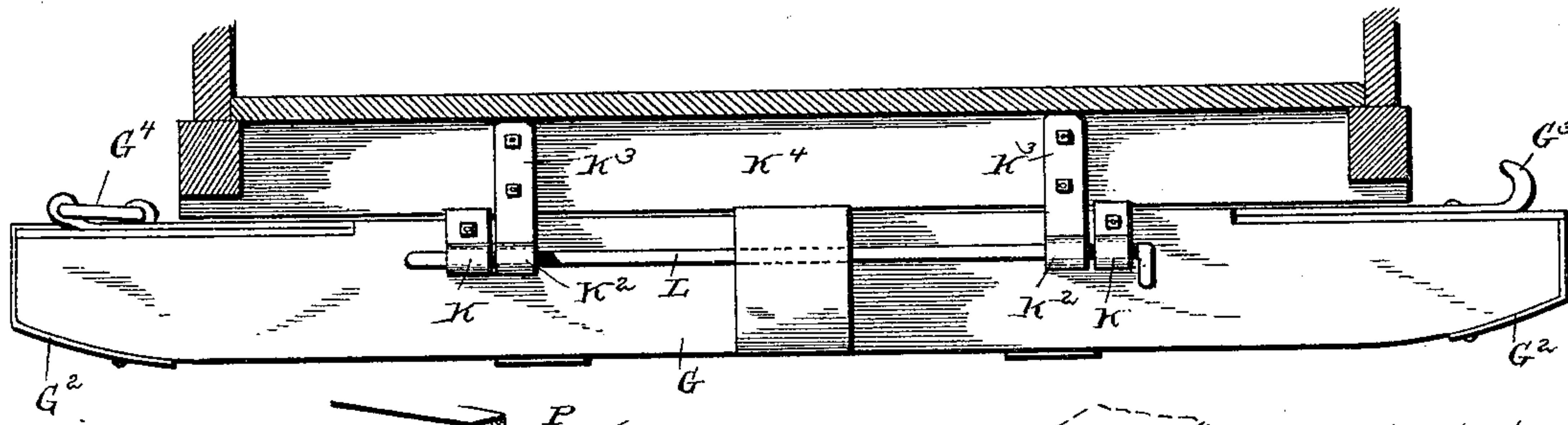
*Fig. 3*



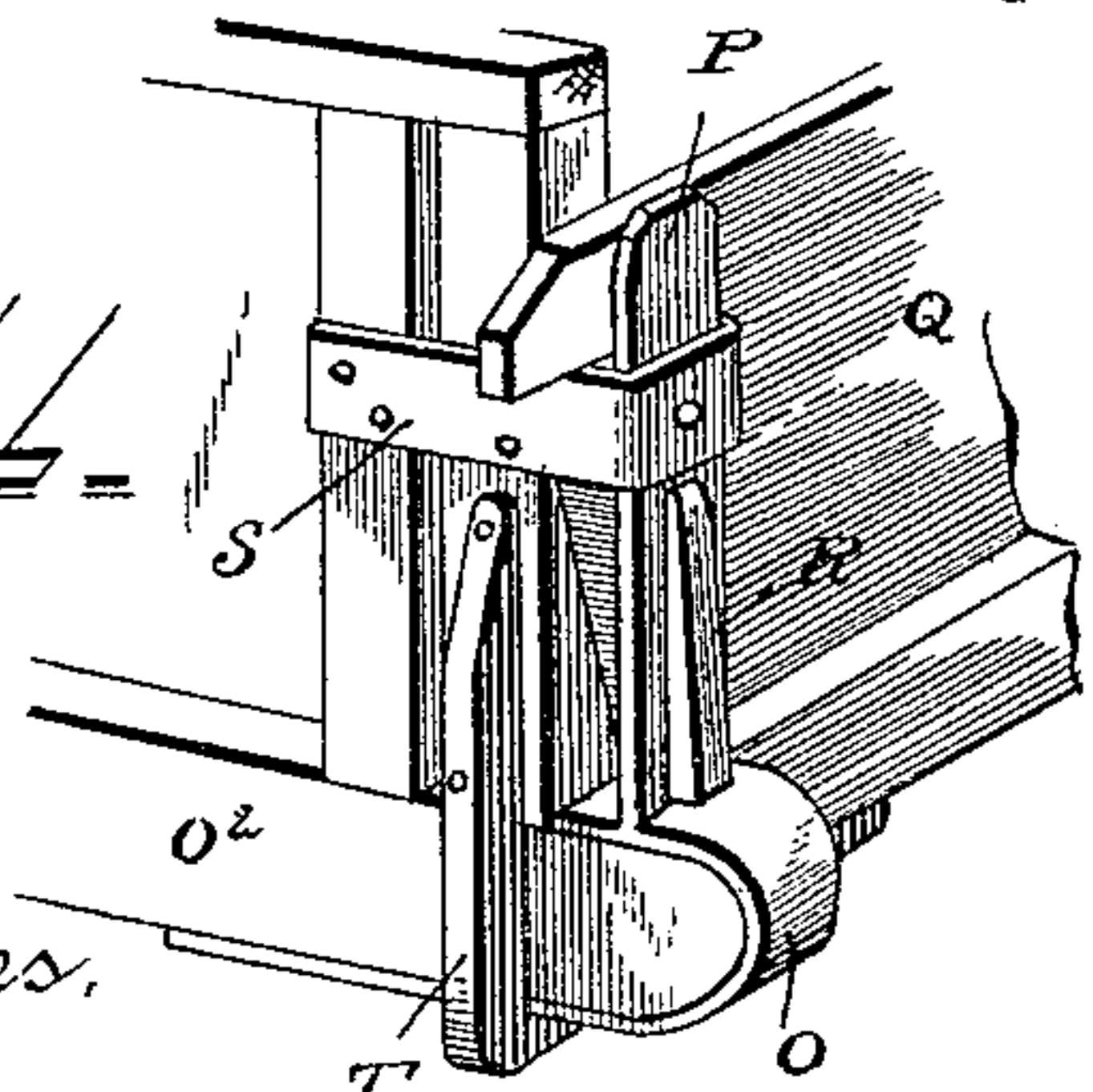
*Fig. 4*



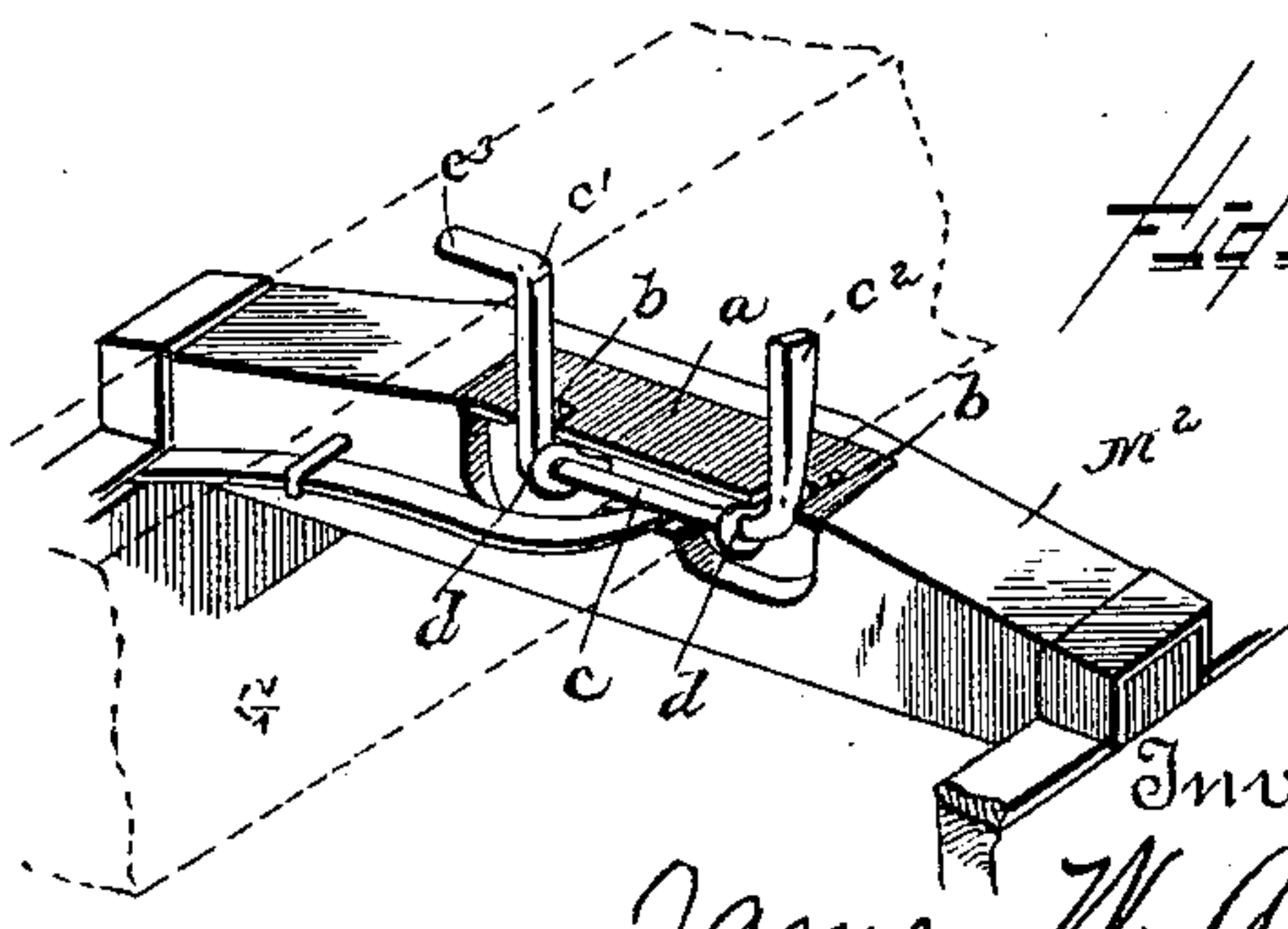
*Fig. 5*



*Fig. 6*



*Fig. 7*



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*James W. Alfred*  
By *His Attorney*  
*Franklin H. Hough*



# UNITED STATES PATENT OFFICE.

JAMES W. ALFRED, OF WALL, PENNSYLVANIA.

## DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 403,571, dated May 21, 1889.

Application filed March 20, 1889. Serial No. 303,957. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. ALFRED, a citizen of the United States, residing at Wall, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Dumping-Cars; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in dumping-cars; and it has more particular reference to that class of dumping-cars which are intended for use upon tram-roads and for general use in railroad excavating and grading.

The invention has for its object to improve upon the construction, to render more durable and efficient in operation this class of cars.

The further and more immediate object of the invention is to provide a dumping-car in which the bumpers or points of attachment of the car are upon the extended ends of a timber extending longitudinally beneath and secured to the body of the car independent of the trucks, the advantages of which construction will more clearly hereinafter appear.

A further object of the invention is to provide an improved form of truck, the framework of which is secured together by a system of truss-rods so arranged as to cause the parts to be drawn more closely together by the loading of the car. The construction of the car is such as to afford a bearing for the weight directly over the center of the truck, at which point the body of the car is pivotally connected to the truck and is adapted to be turned upon said pivot, so as to permit the contents of the car to be dumped in any direction, either at the sides or at the ends of the car.

To the above ends, and to such others as the invention may pertain, the same consists in the peculiar combinations and in the novel construction, arrangement, and adaptation of

parts, all as more fully hereinafter described, shown in the drawings, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating like parts throughout the several views, and in which drawings—

Figure 1 is a perspective view of a dumping-car constructed in accordance with my invention, the body of the car being shown as tilted or dumped at the side of the car. Fig. 2 is a side view, in which the car is dumped at the end. Fig. 3 is a central longitudinal section of the car-truck. Fig. 4 is a transverse section of the same. Fig. 5 is an enlarged detail, showing the manner of hinging the body of the car. Fig. 6 is an enlarged detail in perspective of one of the corners of the box of the car, and Fig. 7 is an enlarged perspective detail of the mechanism for locking the box in position.

Reference now being had to the details of the drawings by letter, A represents the body of the car, B the truck, C the wheels, and C' the axles. The body B of the truck consists of a substantially-constructed rectangular frame of heavy timbers, B<sup>2</sup> and B<sup>3</sup>, and central transverse timber, B<sup>4</sup>.

D D are heavy truss-rods connecting the end timbers, B<sup>3</sup>, of the truck-frame, the ends of these rods being passed through suitable holes formed in the said timbers, while the rods are curved downwardly at their centers and are passed beneath the central timber, B<sup>4</sup>. The ends of the rods are screw-threaded and provided with suitable nuts and washers, as shown at D', for securing the same in position.

E E are truss-rods similar in all respects to the rods D just described, said rods being curved downwardly at their centers and passed beneath the extended arms of the plate E<sup>2</sup>, secured to the lower face of the transverse timber B<sup>4</sup>. It will be seen by this arrangement of the truss-rods that the heavier the weight upon the truck the greater will be the strain upon the truss-rods, and that the timbers of the truck-frame will be the more securely drawn or bound together.



F is a platform placed centrally upon the frame of the truck, said platform being provided with a central opening,  $F^2$ , for the reception of the bolt or pin  $F^3$ .

5 G is a heavy timber centrally pivoted to the truck by the bolt or pin  $F^3$ . This timber G is slightly longer than the box or body of the car, and its ends, which are tapered, as shown, are protected by means of heavy strips of  
10 metal,  $G^2$ , secured thereto, and with suitable hook and links, as  $G^3$  and  $G^4$ , for use in coupling or connecting the cars together, as will be readily understood.

H is a strip of heavy boiler-plate or sheet  
15 metal, which serves as a support for the body of the car. This supporting device is clearly shown in Fig. 2 of the drawings, and by reference to said figure it will be seen that the metallic strip H is bent so as to form at its  
20 extended free end a horizontal arm or extension,  $H^2$ , and from the inner end of this arm it is inclined downwardly and inwardly at an angle of about forty-five degrees, and is again bent and extended horizontally beneath the  
25 timber G, thus forming the horizontal portion  $H^3$  of a length corresponding with the width of the platform F upon the truck, the lower face of the said horizontal portion bearing upon the circular track  $F^2$  upon the said  
30 platform. After being extended horizontally to form the portion  $H^3$  the said strip H is extended at an angle of forty-five degrees to the upper face of the timber G, and thence horizontally across said upper face of the timber,  
35 and is again bent downwardly, as shown at  $H^5$ , and the end is bolted securely to the body of the strip at  $H^6$ .

I is a metallic strip or bar extending horizontally from the horizontal portion of the  
40 strip H, at the top of the timber G, to a point near the horizontal free end  $H^2$  of the strip, and is bolted securely in place.

J is a strip of metal bolted at points near its free ends to the upper face of the strip H,  
45 the extreme ends of the strip being extended over the rear edge and bent to form the loops or eyes K, for the passage of the rod L in connecting the box of the car to the timber G, as is clearly shown in Fig. 5 of the drawings.  
50 The body or main portion of the strip J is extended horizontally in the form of a triangle, and is bolted at the apex of the triangle to the brace bar or strip I, thus serving both as a support for the bottom of the car and also  
55 as a brace, rigidly securing the parts in position.

$K^2$  are eyes formed at the ends of the metallic strips  $K^3$ , which strips are secured to the rear face of the cross-timber  $K^4$  beneath  
60 the bottom of the car, and the box or body of the car is pivotally connected to the timber G by means of the rod L, passed through said eyes  $K^2$  and the corresponding eyes K upon the timber G.

65 The body of the car is locked in position by the engagement of the spring-latch M upon the end of the car with the horizontal exten-

sion  $H^2$  of the support H, as will be readily understood, and it will also be seen that by releasing the said latch M the body of the car  
70 may be tilted or dumped, as desired.

The timber G normally occupies the position shown in Fig. 1 of the drawings, or lengthwise of the truck of the car, and it is locked in such position by means of the locking device connected with the transverse timber  $M^2$ ,  
75 secured at one end of the truck. This locking mechanism is shown in detail in Fig. 7, and by referring to said figure it will be seen that  $a$  is a metallic plate countersunk into the  
80 upper face of the timber  $M^2$  and provided at its rear edge with slots  $b$ . The locking-latch  $c$  consists of a metallic rod passed through suitable eyes,  $d$ , upon the rear face of the timber  $M^2$  adjacent to and directly beneath the  
85 slots  $b$  in the plate  $a$ , the ends of said rod being bent upwardly, as shown at  $c'$  and  $c^2$ , the arm  $c'$  being provided with the horizontal extension or handle  $c^3$ . These arms  $c$  and  $c^2$  are adapted, when turned so as to occupy a vertical  
90 position, as shown in Fig. 7, to embrace the sides of the timber G and prevent said timber from turning upon its central pivot, and by turning said arms downward the timber will be released, and the timber, with the  
95 body of the car, which is attached thereto, may be so turned as to permit the car to be dumped either at the side or end, as may be desired.

In order to provide against the tendency of  
100 the corners of the car to spread or break, and especially those corners that are adjacent to the delivery end of the car, which points are greatly weakened by the removal of one side of the car-box, I have provided the following  
105 means of bracing and binding the said parts securely together, and in this connection reference may be had to Fig. 6 of the drawings, in which figure the construction is shown more in detail.

O represents a strip of heavy iron which is bolted securely to the lower face of the side timber,  $O^2$ , of the car-box, said iron being bent upwardly around the end of said timber. P is a vertical strip of iron, the lower  
115 end of which rests upon the upper face of the strip O, leaving a space intervening between the said strip and the end of the car-body for the reception of the tail-board Q.

R is a vertical rod or bar, the lower end of  
120 which is tapped through the end of the timber  $O^2$ , and is provided at its lower end with a screw-threaded nut. This rod is adjacent to the outer face of the strip P, and is bolted securely thereto.

S is a strip of iron securely bolted to the corner of the car, its extended end being bent so as to embrace the strip P at a point near its upper end, and is securely bolted to said  
130 strip, as shown.

T is an angle-iron embracing the end of the timber O, and securely binding the parts together.

What I claim to be new is—



1. The combination, with the truck-body and the central transverse timber thereof, of the plate E<sup>2</sup>, having arms extending lengthwise of the truck, and the transverse truss-rods E, connecting the side timbers of the truck-body and bearing on said arms, substantially as shown and described.

2. The combination, with the truss-body and the central transverse timber thereof, of the plate E<sup>2</sup> on said transverse timber and formed with a hole to receive the king-bolt, and with arms extending lengthwise of the truck and formed with hooked ends, and the transverse truss-rods E, connecting the side timbers of the truck-body, bearing on said arms and engaging said hooked ends, substantially as and for the purpose described.

3. The combination, with the timber G, of the strip H, secured to said timber and bent to form a horizontal portion at the top and bottom of said timber, and with inclined portions connecting said horizontal portions, substantially as shown and described.

4. The combination, with the timber G, of the strip H, secured to said timber and bent to form a horizontal portion at the top and bottom of said timber, with inclined portions connecting said horizontal portions, and with one end extended, as at H<sup>2</sup>, to engage a spring-catch upon the body of the car, substantially as and for the purpose described.

5. The combination, with the timber G, of the strip H, secured to said timber and bent to form a horizontal portion at the top and bottom of said timber, with inclined portions connecting said horizontal portions, with one end extended, as at H<sup>2</sup>, to engage a spring-catch upon the body of the car, and the brace-strips I and J, substantially as shown and described.

6. The combination, with the car-body and the timber G, of the truck and the locking-latch c, pivoted to said truck and formed with parallel arms adapted to embrace said timber upon opposite sides, substantially as shown and described.

7. The combination, with the car-body, of the strip O, secured to the end of the side timber and covering the end thereof, the vertical strip P, resting upon the strip O, the vertical rod R, the strip S, embracing said strip P, and the angle-iron T, arranged at right angles to the strip O, substantially as shown and described, and for the purpose specified.

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

JAMES W. ALFRED.

Witnesses:

V. L. MASON,

FRANKLIN H. HOUGH.