

S. B. DRIGGS.  
Improvement in Railway-Car Trucks.  
No. 132,643.

2 Sheets--Sheet 1.

Fig. 1.

Patented Oct. 29, 1872.

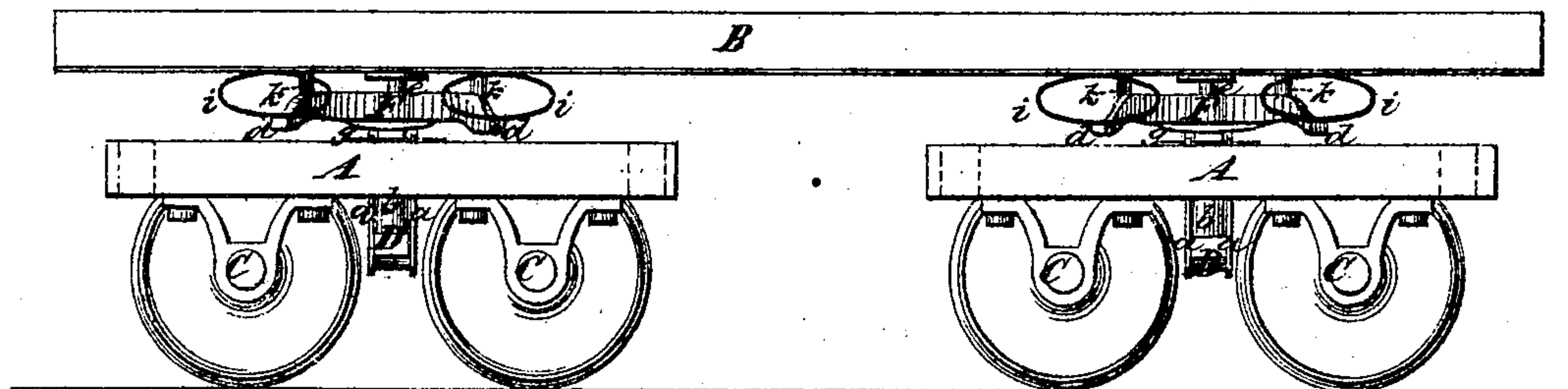


Fig. 2.

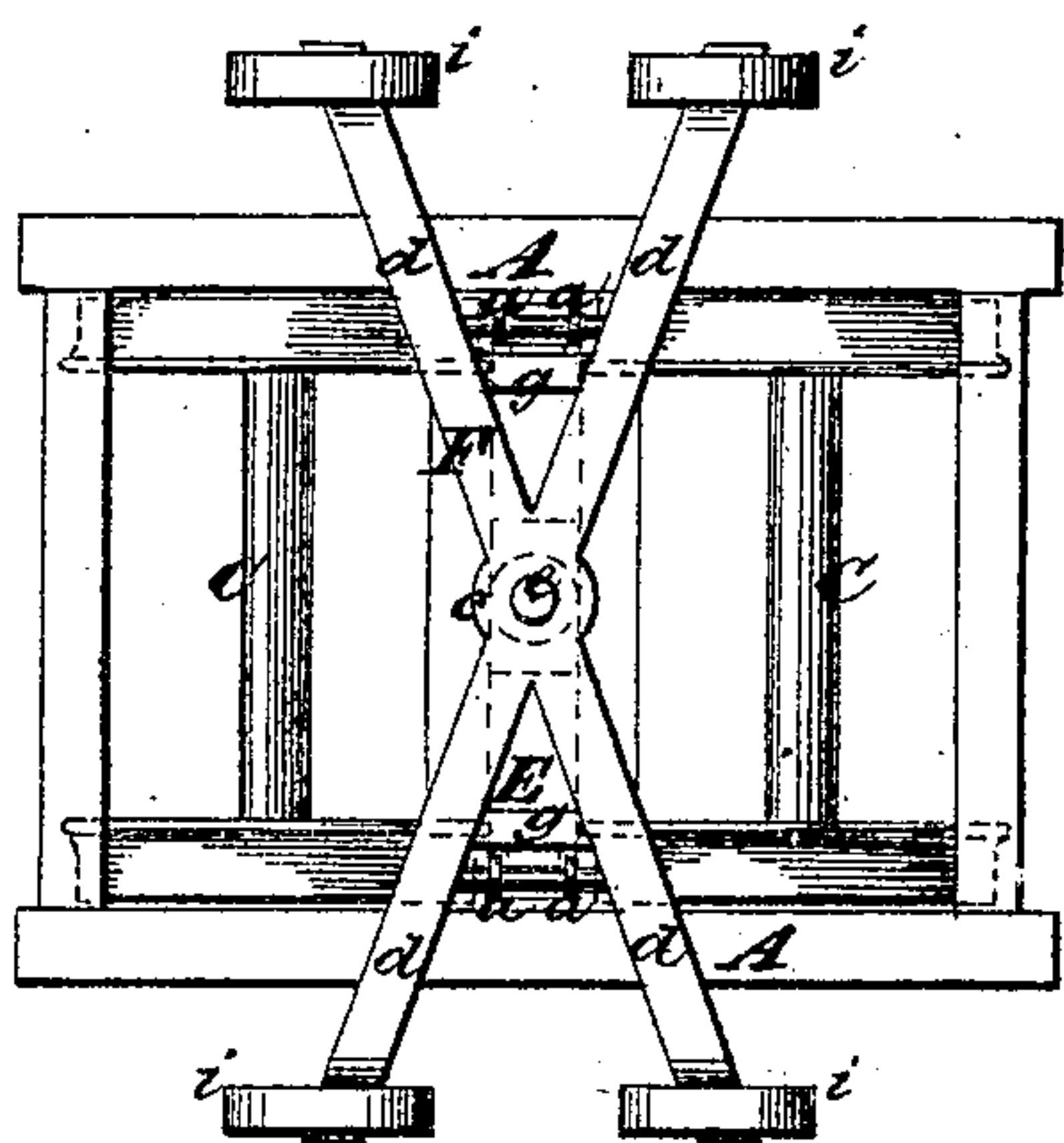


Fig. 4.

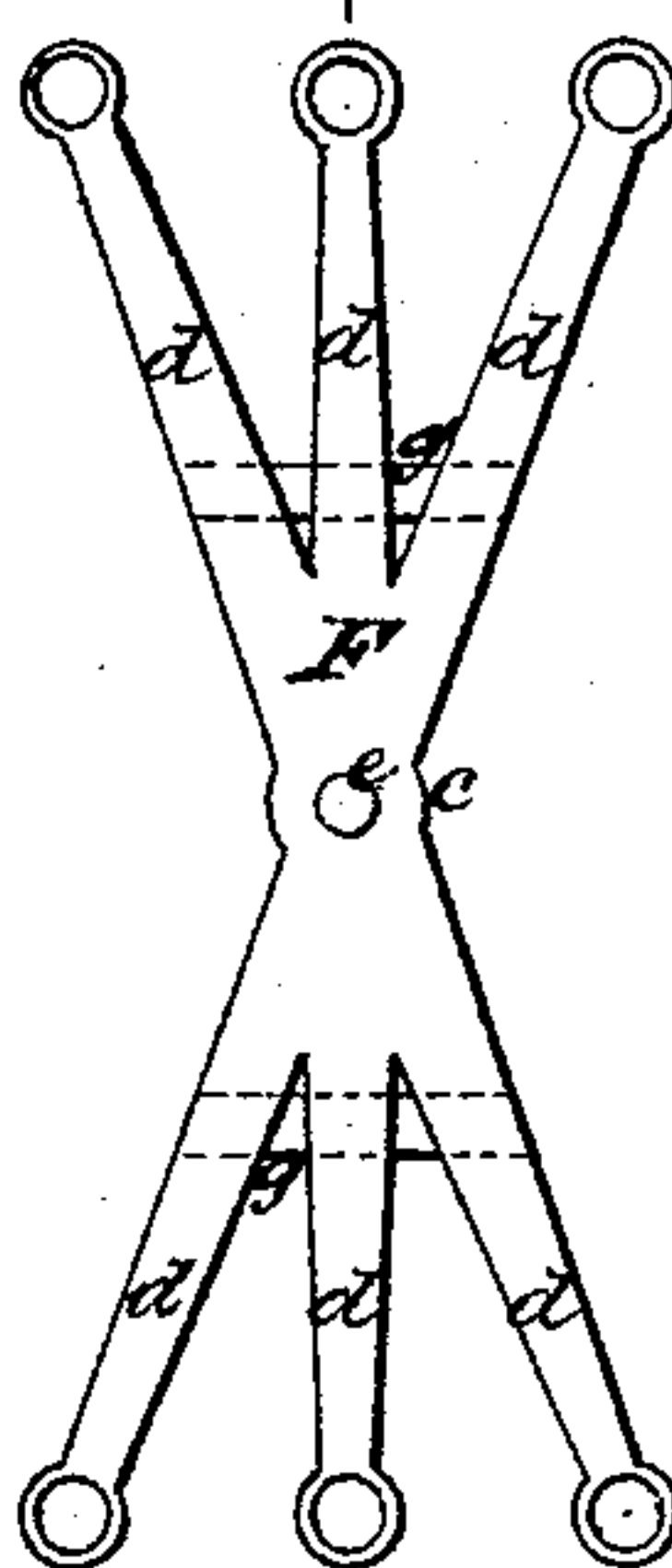


Fig. 5.

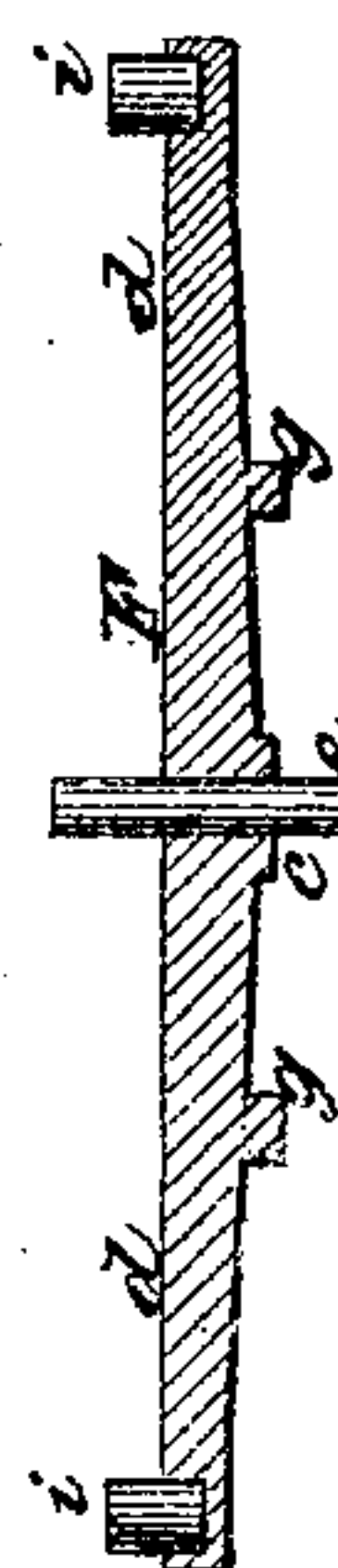


Fig. 3.

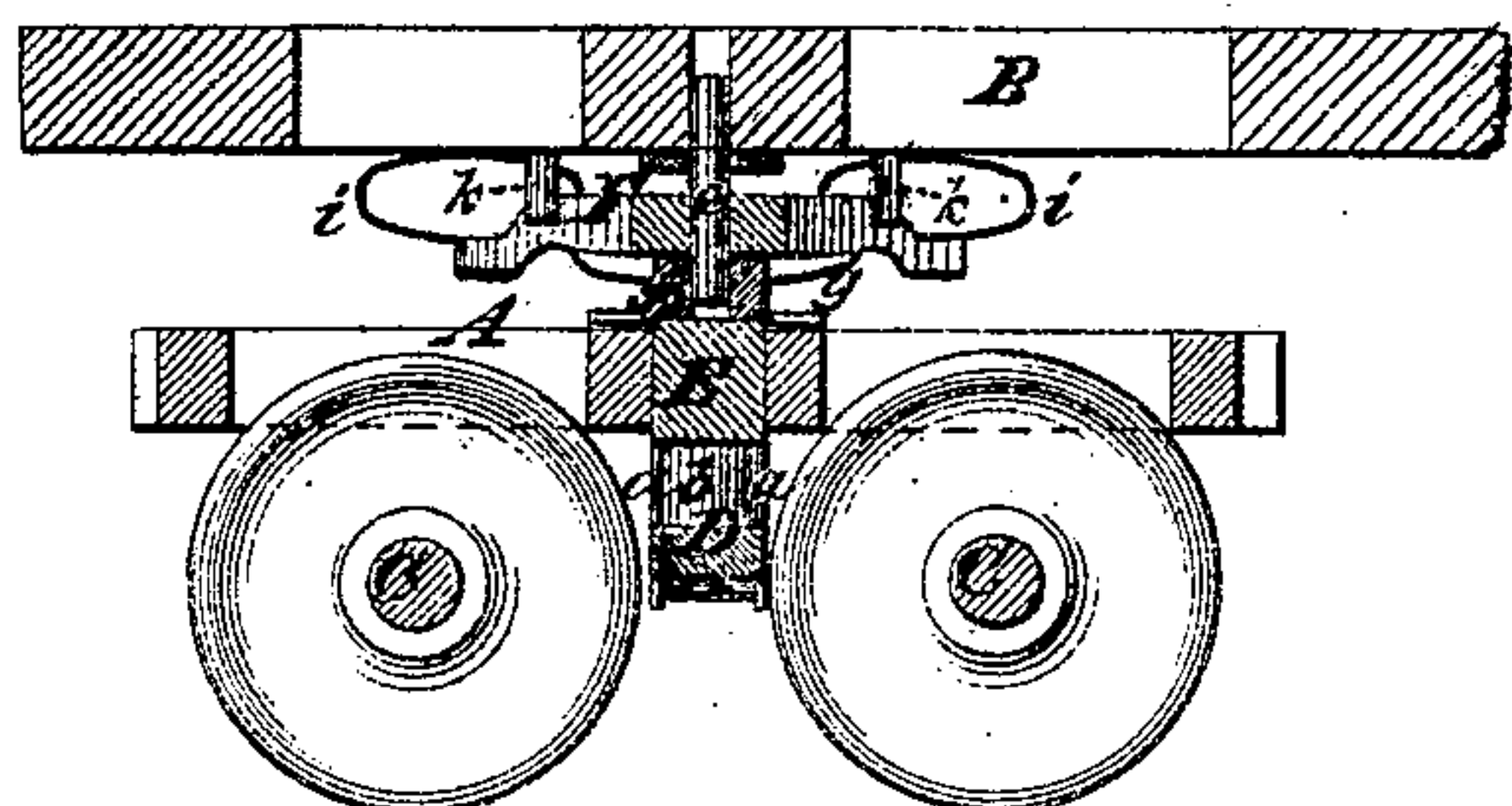
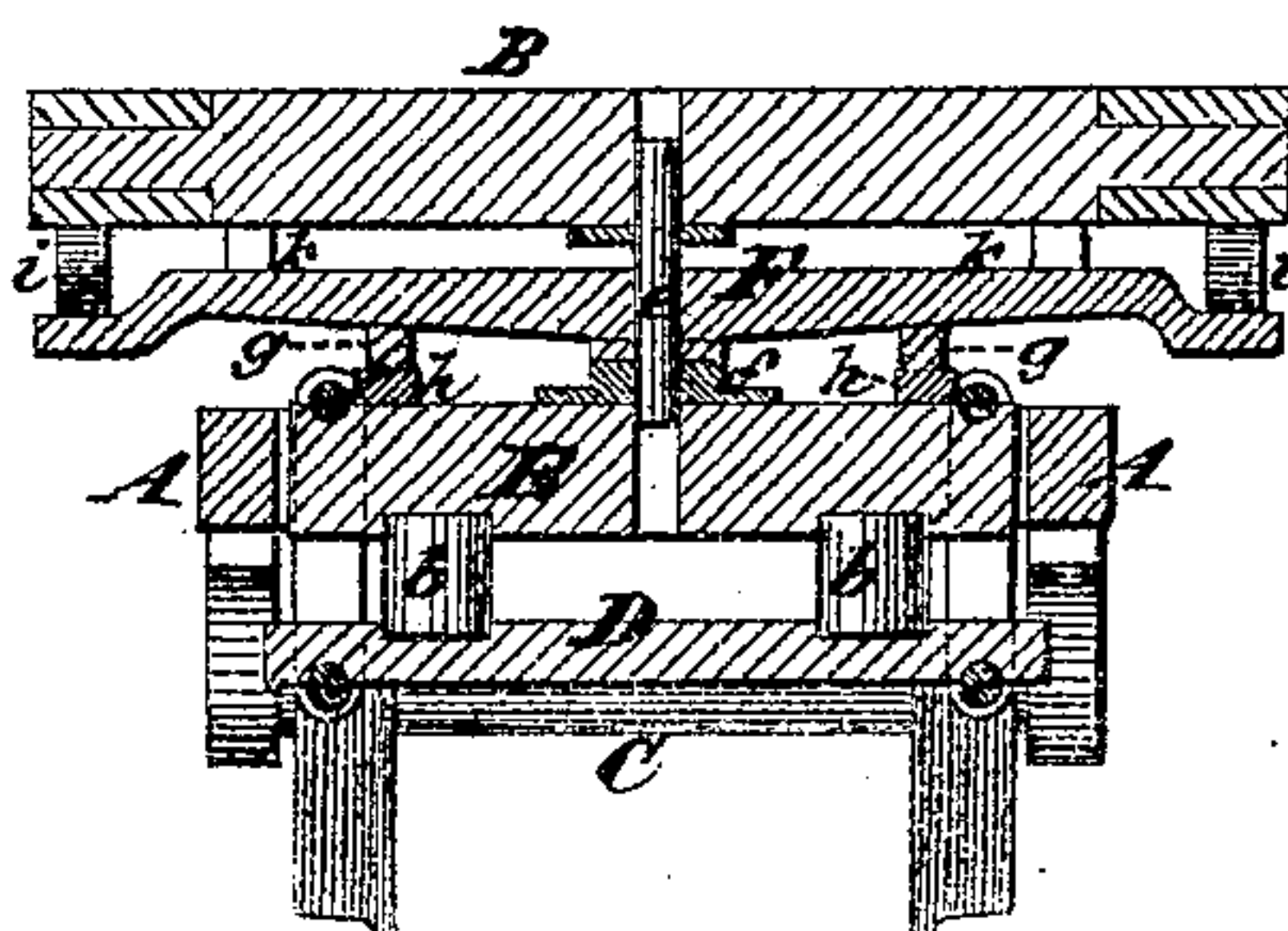


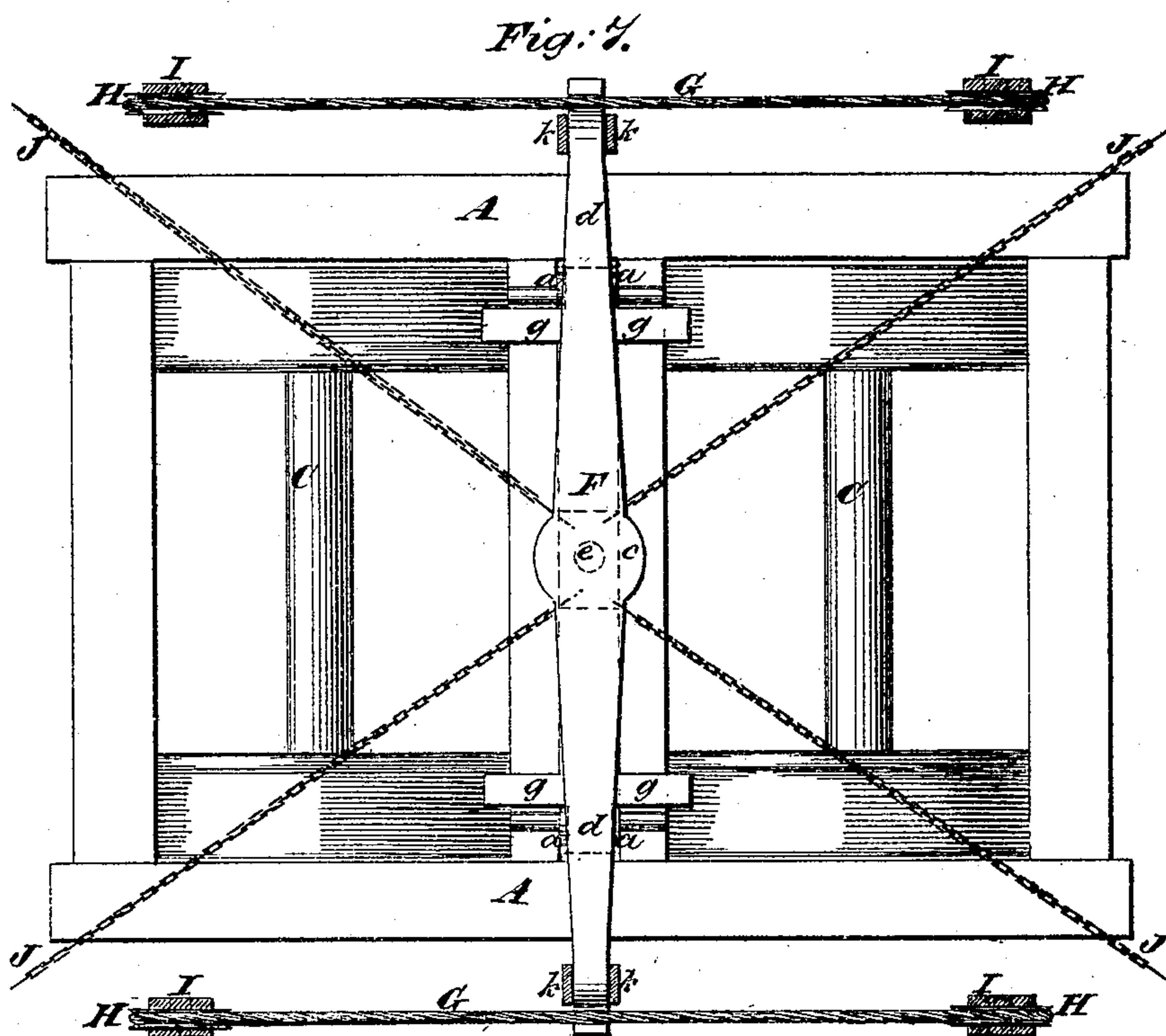
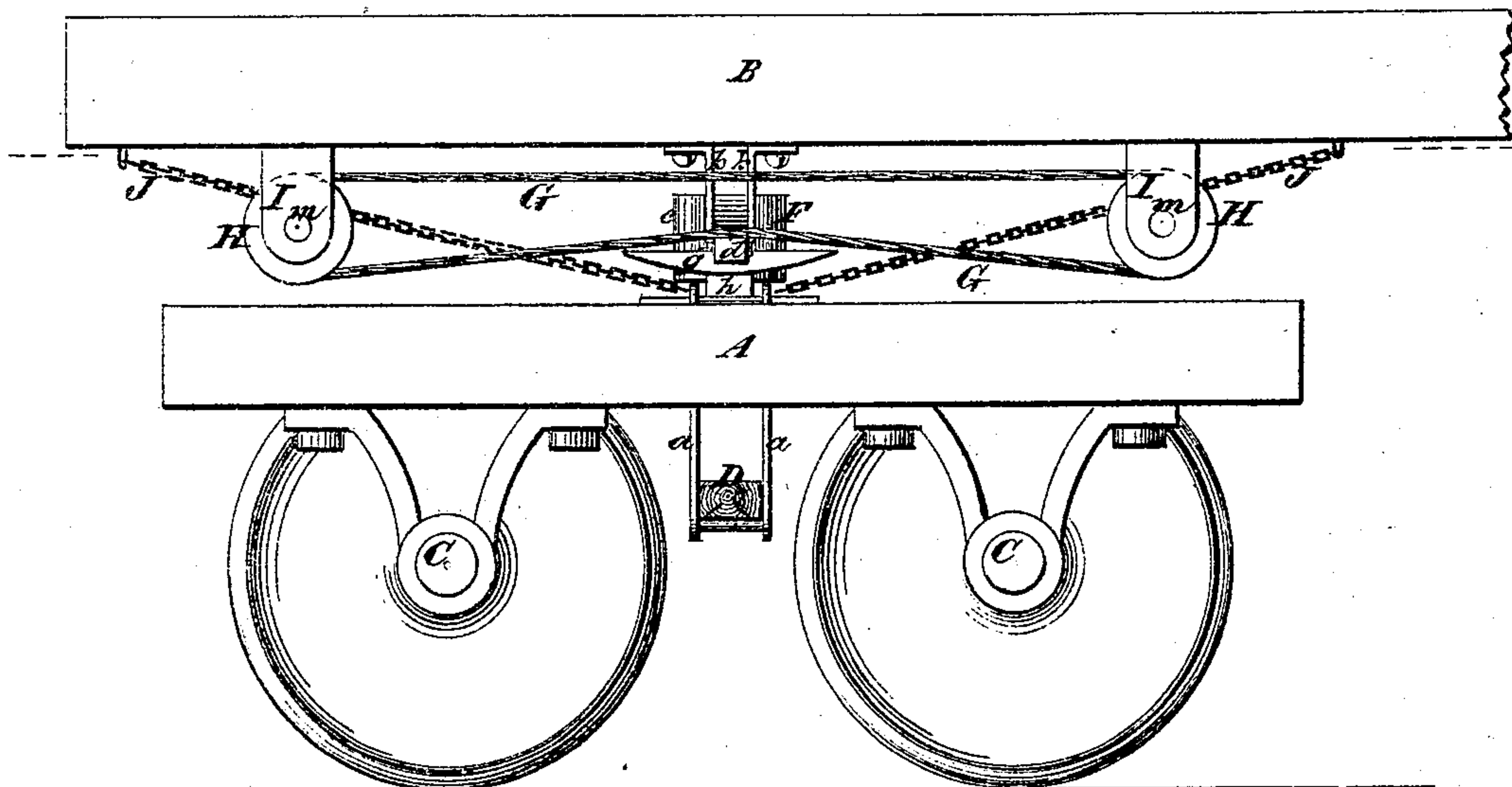
Fig. 3\*.



Witnesses:  
Fred Haynes  
David Hill

S. B. Driggs

S. B. DRIGGS.  
Improvement in Railway-Car Trucks.  
No. 132,643. *Fig. 6.* Patented Oct. 29, 1872.



Witnesses:

Fred Wagner  
David Hill

S. B. Driggs



# UNITED STATES PATENT OFFICE.

SPENCER B. DRIGGS, OF NEW BRUNSWICK, NEW JERSEY.

## IMPROVEMENT IN RAILWAY CAR-TRUCKS.

Specification forming part of Letters Patent No. 132,643, dated October 29, 1872.

*To all whom it may concern:*

Be it known that I, SPENCER B. DRIGGS, of New Brunswick, in the county of Middlesex and State of New Jersey, have invented an Improvement in Railway Cars, of which the following is a specification:

The object of this invention, which relates to cars the bodies of which are supported upon pivoted trucks, is to prevent or reduce the vertical vibration which is so unpleasant to passengers in railway cars, besides being destructive, both to rolling stock and permanent way; and to this end it consists, principally, in providing for the support of the car-body upon each of its trucks by means of an intervening bolster, which is substituted for the heavy rigid cross-beam heretofore built into the main or floor frame of the car for the purpose, such bolster resting at the middle of its length upon the upper swinging beam of the truck, and being attached thereto by a king-bolt, and attached to the car-body only at or near the sides thereof, and support it directly under or close to the walls thereof, leaving the central portion of the floor free from the truck in a vertical direction. The invention further consists in the connection of the floor frame or body of the car with the aforesaid bolster by means of springs composed of endless ropes or bands of steel wire stretched upon pulleys or their equivalents.

Figure 1 in the accompanying drawing is a side view of the floor-frame and trucks of a car with my improvement applied; Fig. 2 is a plan of one of the trucks and the improved bolster; Fig. 3 is a central longitudinal vertical section of one of the trucks, the bolster, and the superincumbent portion of the floor-frame; Fig. 3\* is a transverse section corresponding with Fig. 3; Fig. 4 is a plan of a modification of the bolster; Fig. 5 is a central longitudinal section of the bolster; Fig. 6 is a side view of a truck and its bolster, and a portion of the floor-frame of a car, showing a modification of the invention; and Fig. 7 is a plan of the truck-bolster and springs corresponding with Fig. 6.

Similar letters of reference indicate corresponding parts in the several figures.

A A are the truck-frames, and B the main or floor-frame of the car-body. The truck-frames are supported in the usual way by

springs and boxes upon the axles C C, and are fitted in the usual way with swinging beams D D suspended by links *a a* from the tops of the frames, the said beams having the upper beams E E supported upon them by springs *b b*. F F are the bolsters, which constitute the principal features of my invention. These bolsters, of which there is one for each truck, may be made of steel or wrought-iron, each with a central hub, *c*, from each side of which there radiate arms *d d*, as shown in Figs. 2, 4, and 5; Fig. 2 showing two arms on a side and Fig. 4 three arms on a side. Figs. 1 and 3 show bolsters like Fig. 2, with two arms on a side, and Figs. 3\*, 6, and 7 show a bolster with only one arm on a side. In the center of the hub of each bolster there is secured the king-bolt *e*, which fits into a socket, *f*, secured on the center of the upper swinging beam E of the truck; and on the under side of each bolster there are provided bearing-surfaces *g g*, which bear on slides *h h*, or rollers provided on the upper part of the truck-frame. On the upper side of each arm of the bolster there is a spring, *i*, represented in Figs. 1, 2, 3\*, and 5, which is secured to its respective arm, and which may be of steel, of elliptic, semi-elliptic, or other form, or may be of India rubber. The main or floor-frame B of the car-body, shown in Figs. 1, 3, and 3\*, rests upon the springs *i i*, which are or may be secured to the said springs by clips or otherwise, the arms of the bolsters extending beyond and projecting over the sides of the truck, so as to support the floor-frame upon their springs as close as practicable to the sides of the said frame, which receives no vertical support from the bolster except through the springs, so that the whole floor or bottom of the car is, except at the sides, entirely free from any vertical bearing upon the truck, as shown in Fig. 3\*. The king-bolt *e* is represented in Figs. 1, 3, and 3\*, as entering a socket, *j*, in the bottom of the frame B; but this forms no vertical connection, merely connecting the truck longitudinally and laterally with the car-body. Guide-plates *k k* are provided on the bottom of the car-body to receive the arms of the bolster between them, and keep the bolster in proper horizontal relation with the car-body. These guide-plates are better shown in Figs. 6 and 7. G G, in Figs. 6 and 7, rep-



resent the springs composed of endless belts, bands, or ropes of steel wire for making the connection between the ends of the arms of the bolster F and the bottom of the car-body. These may be composed of ordinary steel-wire rope, spliced in any suitable manner, and stretched over upright pulleys H H, the horizontal axles *m m* of which are received in bearings provided in hangers I I secured to the car-body at, under, or near the sides thereof. The lower parts of these belts rest upon the arms of the bolster, to which they may be attached by clips, saddles, or stirrups. The hangers I I, or the axle-bearings contained within them, may be so applied and provided with screws, that they may be set apart to give the belts a proper tension to produce the required degree of elasticity. The two springs G G on the corresponding sides of the two trucks of a car may have their hangers or pulley-axle bearings connected by steel-wire ropes, which, by their longitudinal tension, may aid in elastically sustaining the springs.

In Figs. 6 and 7 the upward extension of

the king-bolts into sockets in the bottom of the car-body is omitted, and the car-body is represented as connected with the trucks by chains J J, by which the momentum of the car-body is arrested in stopping, and the inertia of the trucks is overcome in starting, and by which the tendency to lateral movement of the car-body relatively to the trucks is arrested or controlled.

What I claim as my invention is—

1. The bolster F intervening between the truck and the car-body, attached at its center to the truck by a king-bolt, and adapted for attachment at its ends to the car-body, so as to support the latter only at the sides or walls thereof, substantially as set forth.

2. The combination, with the bolster F, of springs G G, consisting of endless belts, bands, or ropes of steel wire attached to the cars by pulleys H H, substantially as herein described.

S. B. DRIGGS.

Witnesses:

MICHAEL RYAN,  
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