

(No Model.)

R. T. WHITE.

TRUCK AND RUNNING GEAR FOR RAILROAD CARS.

No. 362,563.

Patented May 10, 1887.

FIG. 1.

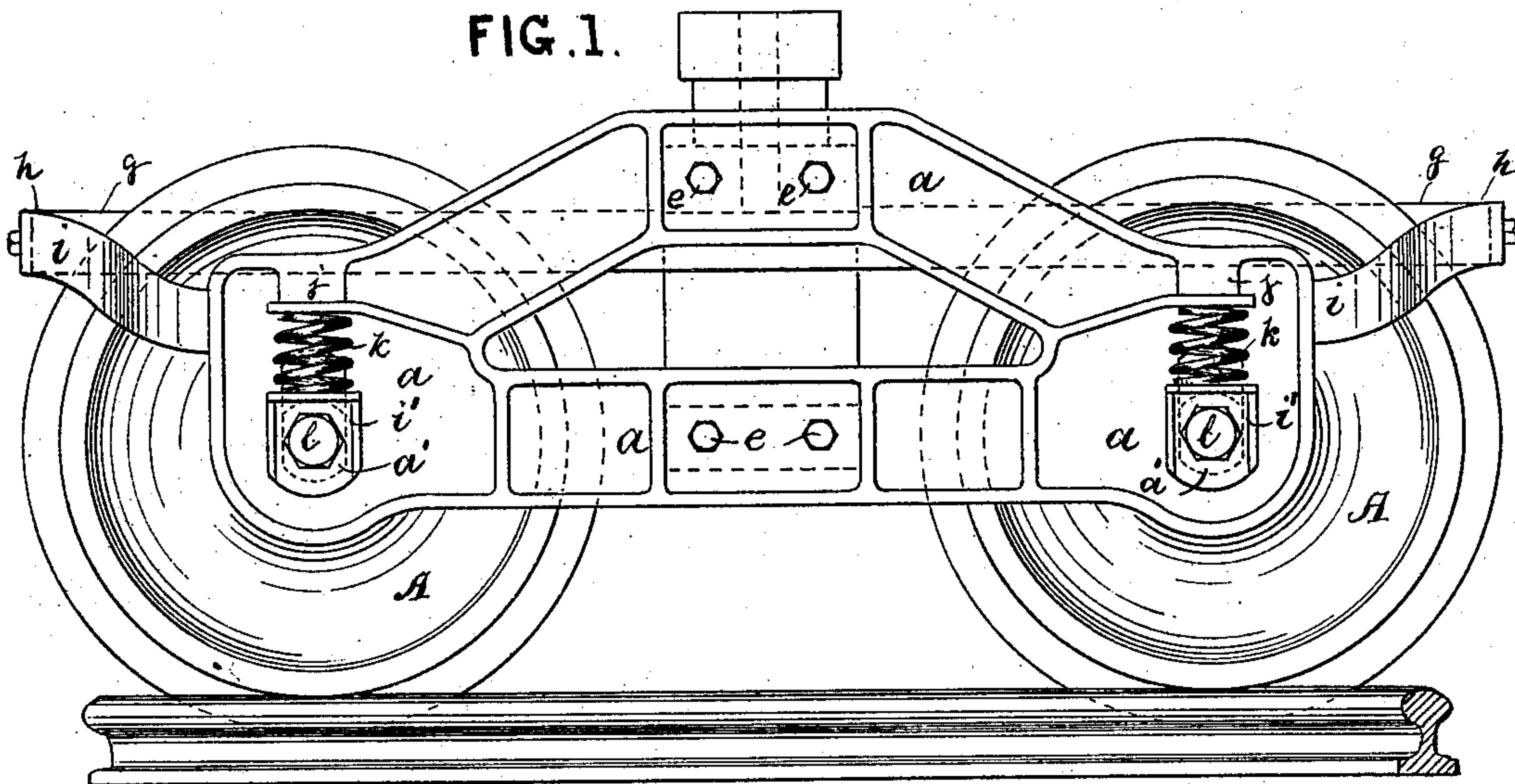


FIG. 2.

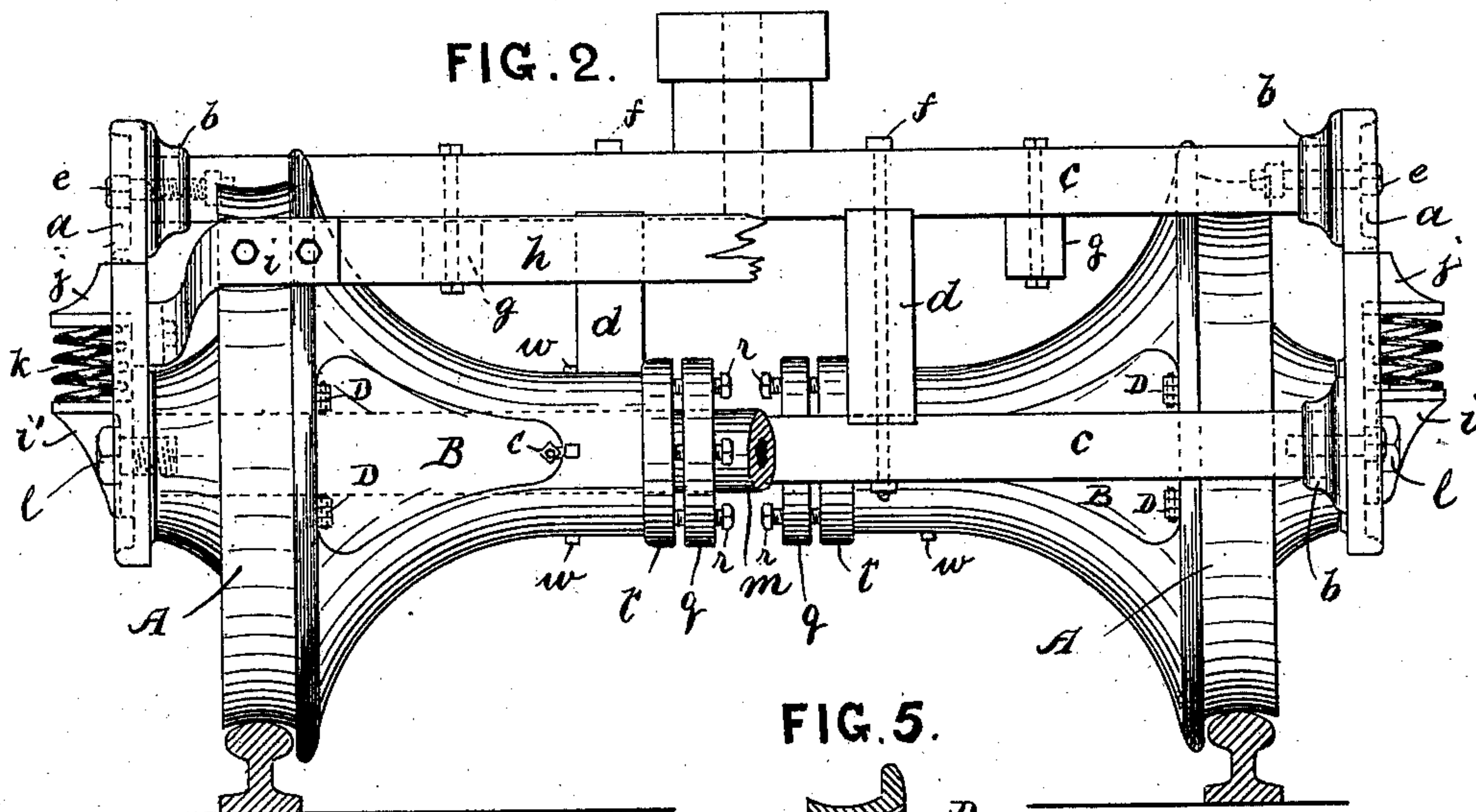


FIG. 5.

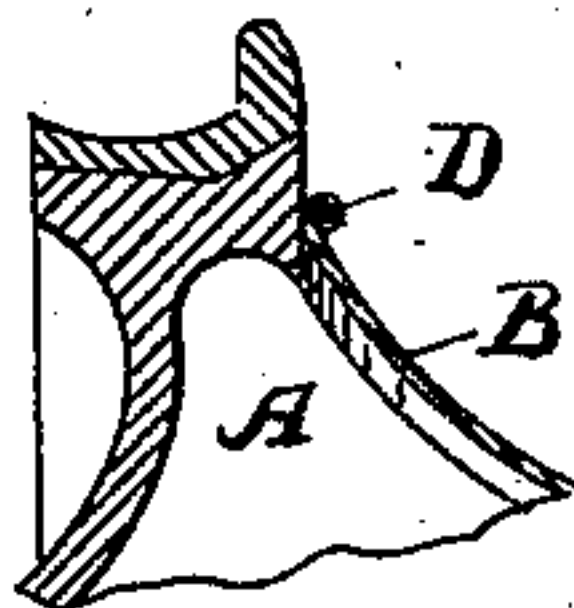


FIG. 3.

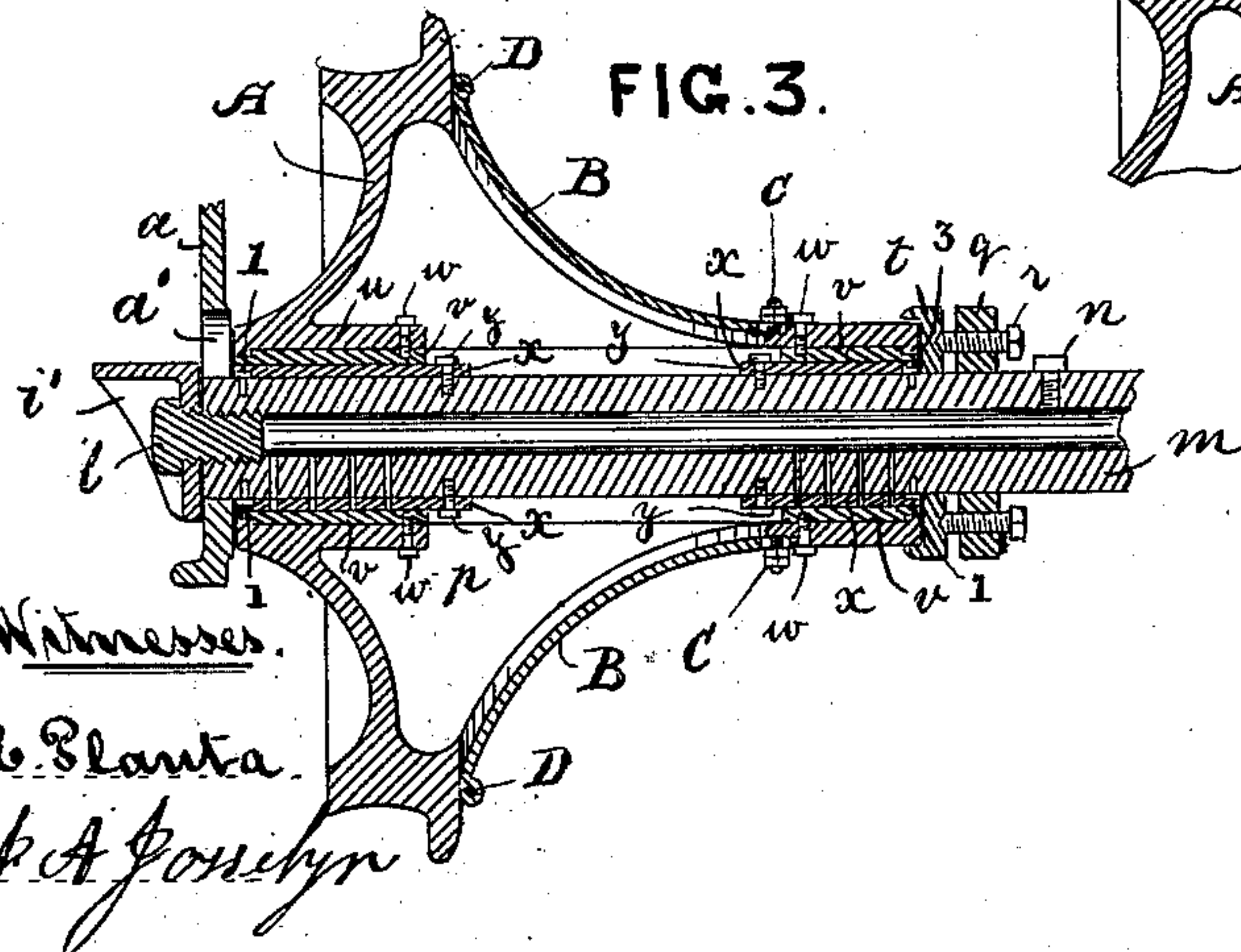
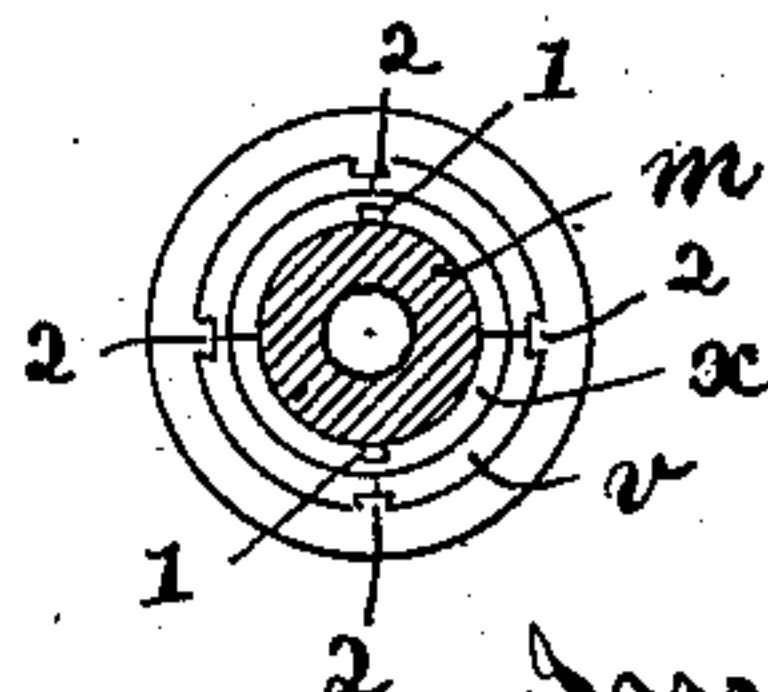


FIG. 4.



Witnesses.

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TRUCK AND RUNNING-GEAR FOR RAILROAD-CARS.

SPECIFICATION forming part of Letters Patent No. 362,563, dated May 10, 1887.

Application filed July 6, 1886. Serial No. 207,185. (No model.)

To all whom it may concern:

Be it known that I, REYNOLDS T. WHITE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Trucks and Running-Gear for Railroad-Cars, of which the following is a specification.

My invention relates to certain improvements in railroad-car trucks, axles, and wheels, the wheels revolving independently of each other, thereby avoiding the great wear and strain when rounding curves; and the invention consists in certain details of construction, hereinafter fully set forth, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a side view of a railroad-car truck embodying my invention. Fig. 2 is an end view of the same with one of the four wheels removed to show the connection of the timbers with the side frames. Fig. 3 is a vertical section through a portion of the axle and one of the wheels. Fig. 4 is a cross-section of the axle, showing the sleeves and end of the wheel-bearings. Fig. 5 is a section of a portion of a wheel with a steel tire.

a a are frames of cast steel or iron, forming the sides of the truck-frame. On the inside of these frames are cast hoods or sleeves *b*, to receive the ends of cross-timbers *c c*, which are secured by joint-bolts *e* to the side frames, *a*.

d d are blocks of timber placed between the timbers *c c*, and secured thereto by bolts *f f*. Timbers *g g* are secured to the under side of the upper timbers, *c c*, and to the ends of the timbers *g g* are secured beams *h h*, to carry the brake-beams. Straps or brackets *i i* are secured at one end to the side frames, *a a*, and pass out and around the ends of the beams *h h*, to which they are bolted. By this arrangement the side frames, *a a*, timbers *c c*, *d d*, *g g*, and *h h* are all firmly secured together, thus making a very strong frame.

The space in the center of the truck between the timbers *c c* and *d d* may be utilized for the storage of extra sleeves, tools, &c., the ends to be closed by doors.

The side frames are each provided with openings *a' a'*, through which the axles *m* pass. Above each of the openings *a' a'*, brackets *j j* are cast with or secured to the frames *a a*.

i' i' are brackets secured to the ends of the axles *m* by means of bolts *l*. Between the brackets *i'* and *j* are placed spiral or other springs *k*. The axles *m* project beyond the face of the side frames, *a a*, just sufficient to allow the frames to work up and down without the brackets *i' i'* grinding against said frames. By thus having the springs on the outside of the side frames greater steadiness of the car is obtained.

The wheels *A A*, I prefer to cast in one piece of the form shown—that is, with an extension that reaches nearly to the center of the axle and the hub projecting beyond the face of the wheel, both the hub and the inner end of the extension being fitted with bearings, hereinafter described.

The tread of the wheel I make slightly concave, so that it will not be liable to slip from side to side upon the rail, thereby keeping the flanges just clear of the rail, and as the tread of the wheel is over the inner part of the hub-bearing the weight is evenly distributed, so that there will be very little, if any, strain upon the bearings.

The wheels run loose upon the axles *m*, and the wearing parts are constructed in the following manner: Upon the axles *m*, where the wheel has its bearings, are placed semicircular plates *x*, each secured at its outer end by a dovetailed stud, *1*, fitting into a corresponding dovetail in the end of the plate *x*, the inner ends of the plates being secured to the axle by bolts *y*. These plates form the wearing-surfaces of the axles and can be readily replaced when worn. Similar wearing-surfaces, *v*, are also secured to the inside of the hub and the rear of the extension-wheel. These plates are each made up of four sections, secured at their outer ends by dovetailed lugs *2 2*, cast on or secured to the hub and extension of the wheel, each corner of the rear of the plates *v* passing over the said lugs *2*, and the inner ends are secured by bolts *w* passing through the hub and extension, as shown.

When it is desired to insert a new plate *v* for one that is worn, the wheel is turned until the plate to be removed is at the top of the axle. The screw *w*, holding said plate, is then removed and the plate drawn out, a new plate inserted, and the screw replaced.

Openings are formed in the extension of the

wheel, so that access can easily be had to the parts. The openings are closed by covers B, secured to the wheel at one end by hinges D D, and fastened by a bolt, C, at the other end, so as to keep dust and dirt out of the interior of the wheel, and prevent its working in between the bearing-surfaces from the interior of the wheel. The axles are hollow, and each end is closed by means of the screws 10 l, that carry the brackets i'.

In the center of the length of the axle is a hole, through which the axle can be filled with oil, the hole being closed by a screw, n. On the under side of the axle, opposite each of 15 the bearings, is formed a series of small holes, as shown. Corresponding holes are also formed in the lower plate, x, so that the oil will pass from the center of the axle through the holes to the wearing surface; but as the lower plates, 20 x, bear hard upon the plate v but a very small amount of oil escapes—just sufficient to keep the bearings lubricated.

The position of the wheel on the axle must be such that while it can run freely the face 25 of the hub must be as close as possible to the frame a. To hold it in this position, I shrink or otherwise secure to the axle collars q q, through which are passed bolts or set-screws r r, the ends of which fit into depressions in a loose collar, t, placed on the axle between the collar q and the inner side of the wheel. By 30 means of the screws r r the position of the loose collar t can be adjusted as required; and as the collar t is held by the screws, I place a washer, 3, between it and the end of the wheel. The collar t is provided with a lip or projection all round, that fits over the end of the wheel to exclude dust and dirt from the bearings, and the lip may be covered with leather, 40 if desired.

It will be seen that by this construction all the wheels run independently of each other and the wearing parts can be readily replaced when worn out, the axle itself not being sub- 45 ject to any wear and the wheel only on the tread, and, if desired, the wheel may be provided with a steel rim, as shown in Fig. 5, so that when it becomes worn the rim can be removed and a new one shrunk on.

50 What I claim as my my invention is—

1. A car-truck consisting of side frames, a a, timbers c c, d d, g g, h h, and brackets i i, all secured together, substantially as shown and described.

55 2. The hollow axle m, secured to the side frames, a a, by bolts l and brackets i', in com-

bination with springs k and brackets j, secured to the frames a, substantially as shown and described.

3. The combination, with a truck-frame 60 having the bracket j integral therewith and the removable bracket i' secured to the axle, of the spring k, held between said brackets on the outside of the frame and wheels, substantially as set forth. 65

4. A hollow car-wheel with an extension at the inner side and the hub projecting beyond the face of the wheel, both the hub and the extension being fitted with movable parts forming the bearings, substantially as shown and 70 described.

5. A hollow axle forming an oil-chamber, provided with removable plates for the wheels to run on, said plates adapted to be oiled from the chamber of the axle, substantially as and 75 for the purpose set forth.

6. A car-wheel, A, provided with removable wearing plates v v, in combination with a hollow axle forming an oil chamber, said axle having removable wearing-plates x x, 80 with holes through them communicating with the oil-chamber, substantially as and for the purpose set forth.

7. A car-wheel provided with an extension on the inner side and a hub projecting beyond 85 the face of the wheel, the said wheel being hollow and provided with openings closed by covers hinged thereto and secured by a bolt, substantially as and for the purposes described. 90

8. The combination, with a car-wheel having removable bearing-plates, of a hollow axle closed at each end by a screw-bolt, forming an oil-chamber therein, and provided in the center of its length with an orifice for filling the 95 chamber, and having removable bearing-plates secured to its sides, and a series of holes leading from the oil-chamber through the bearing-plates of the axle to those of the wheel, substantially as and for the purpose set forth. 100

9. In combination with a car-wheel, an axle with collars q q secured thereto, through which screws r r pass for regulating the position of a loose collar, t, for holding the wheel in position, substantially as shown and described. 105

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

REYNOLDS T. WHITE.

Witnesses:

J. H. ADAMS,
E. PLANTA.