

T. H. WHELESS.
RAILWAY CONSTRUCTION.
APPLICATION FILED FEB. 2, 1910.

968,618.

Patented Aug. 30, 1910.

Fig. 1

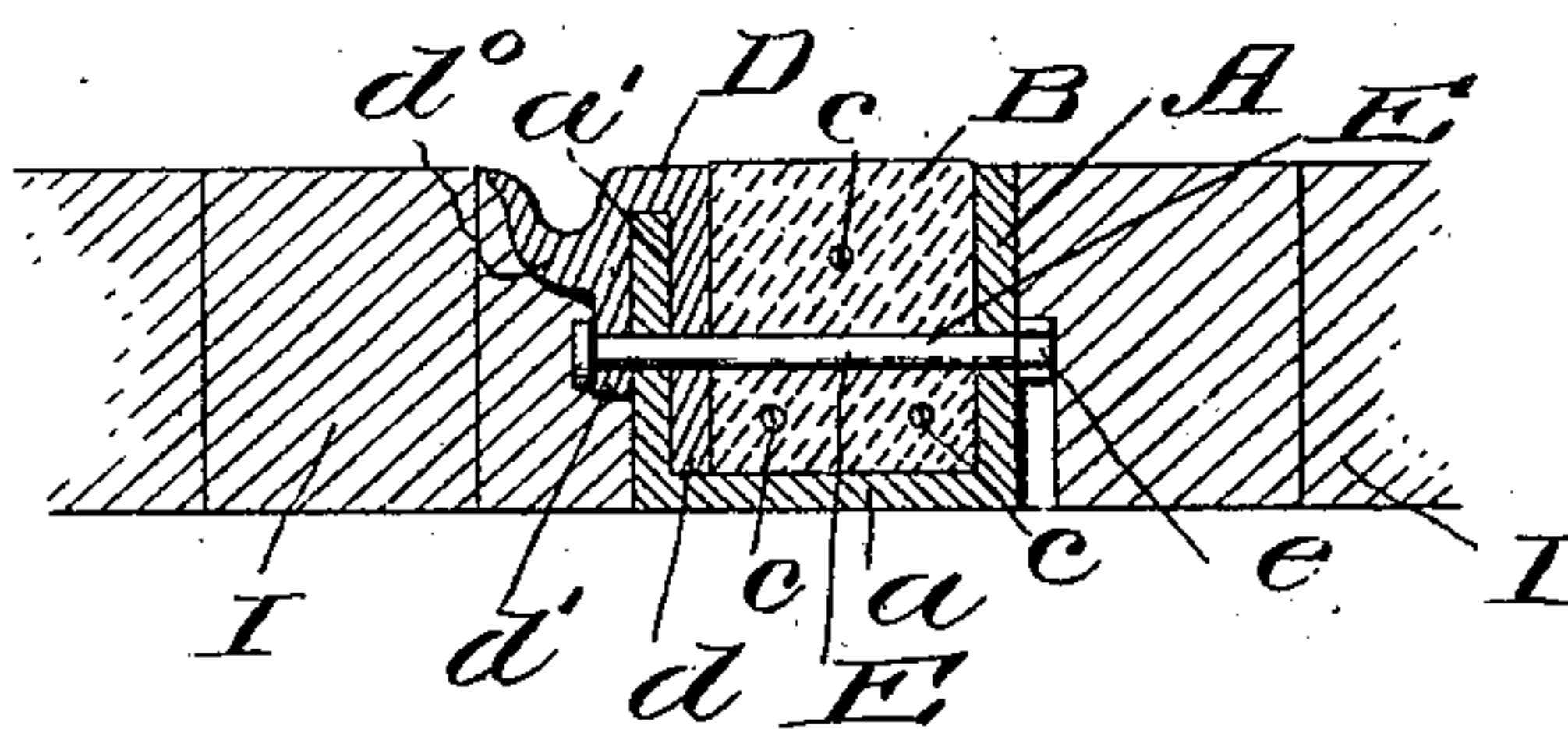


Fig. 2.

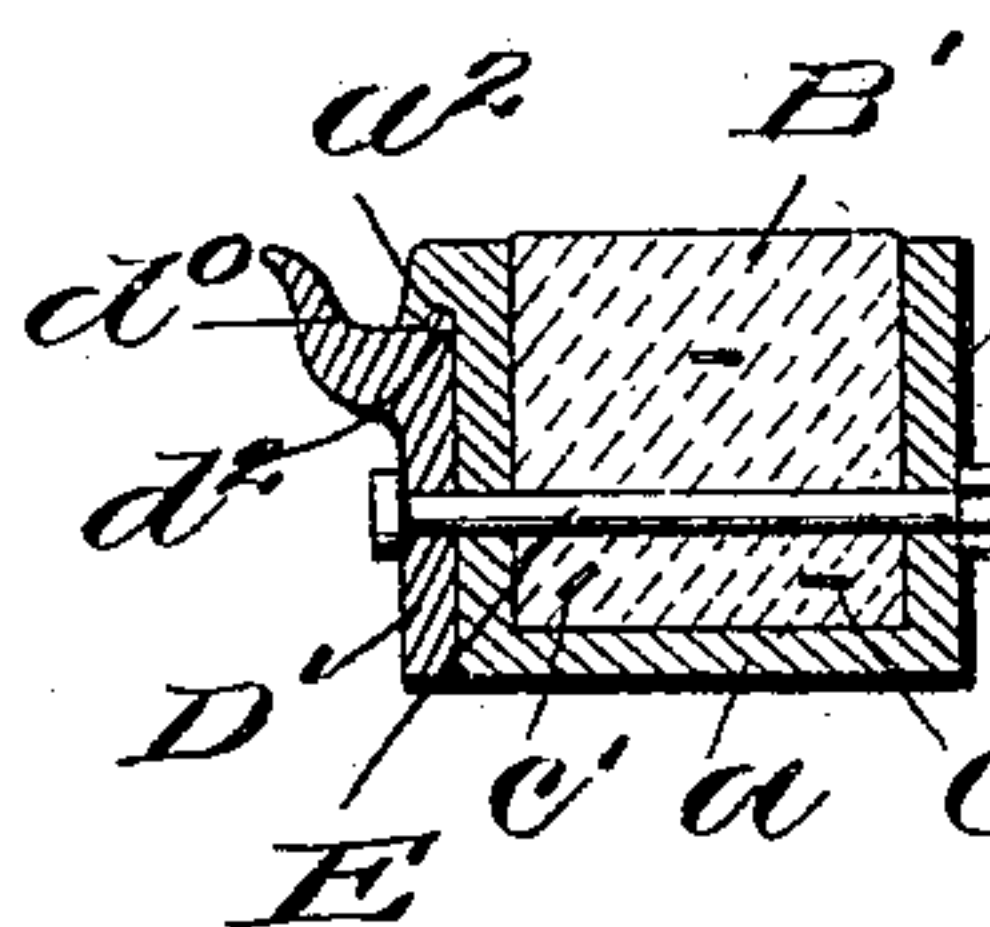


Fig. 3.

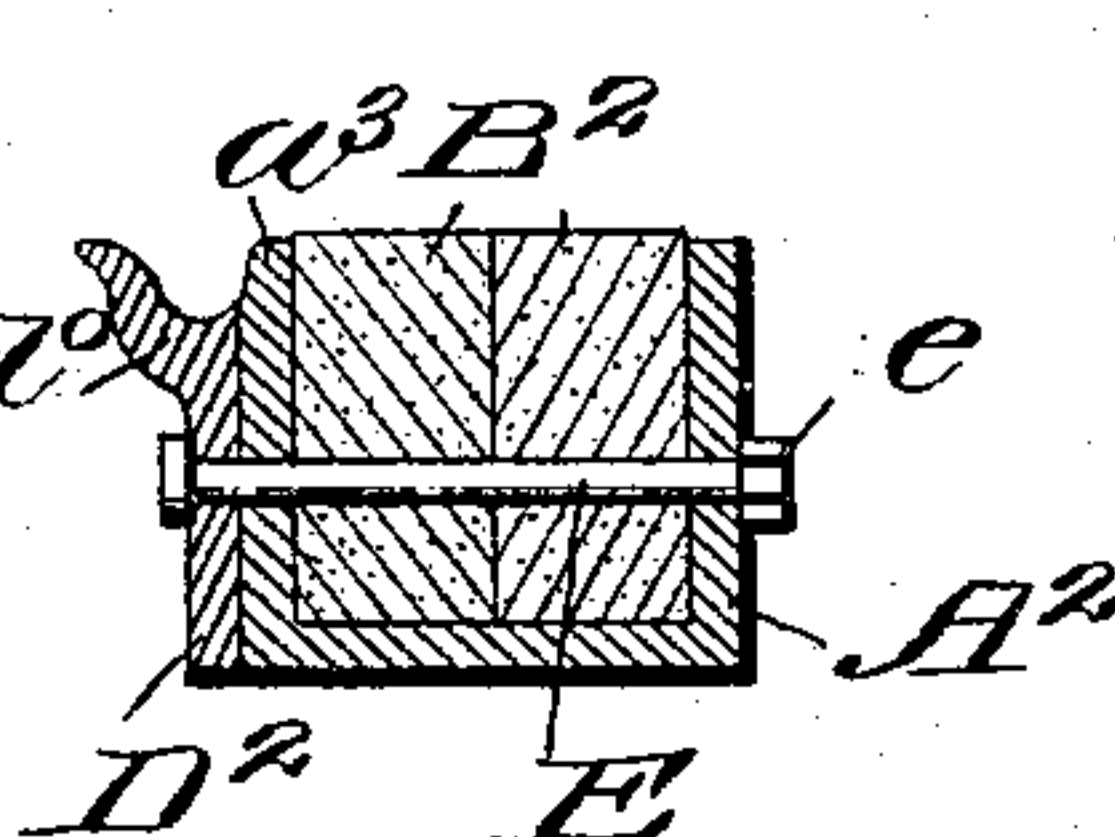


Fig. 4.

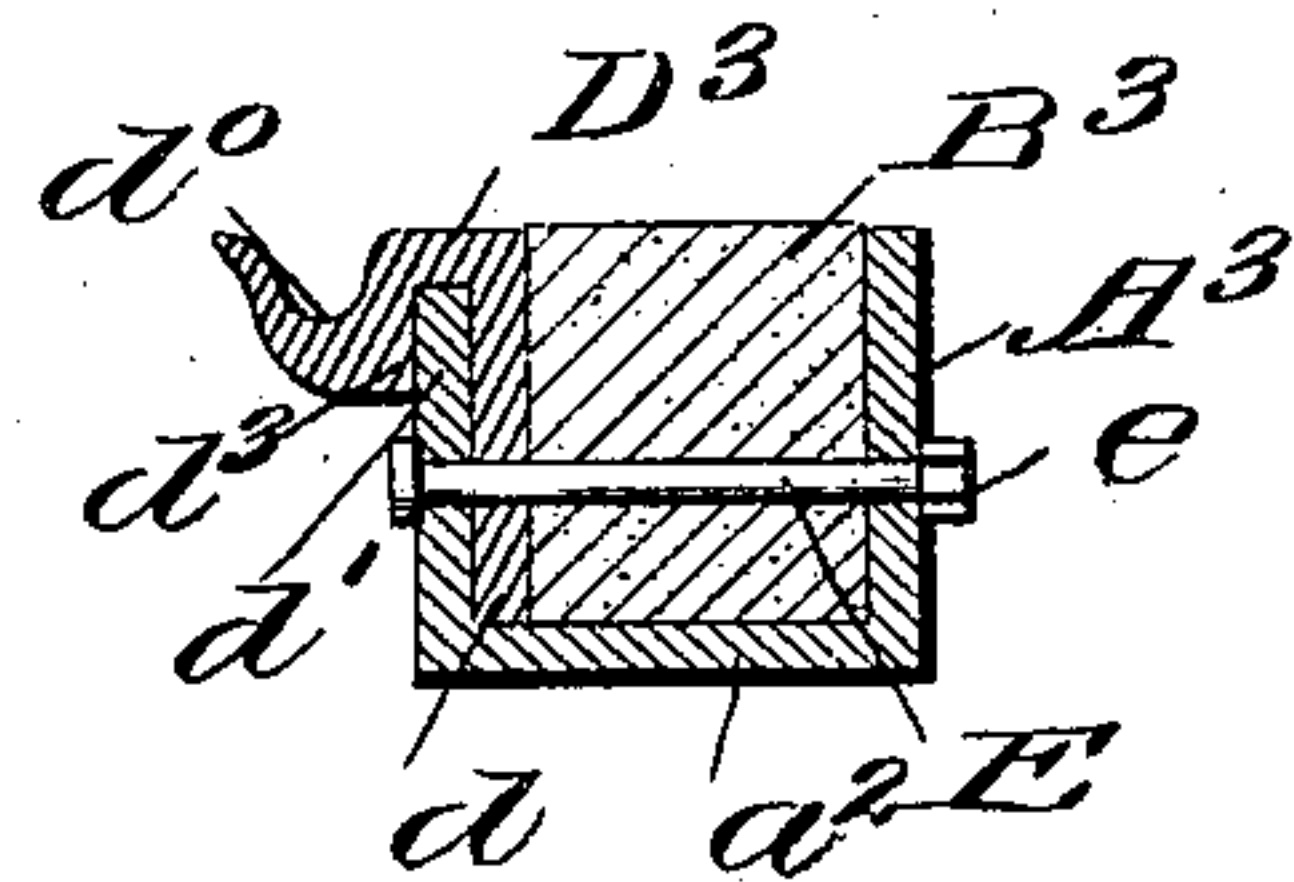


Fig. 5

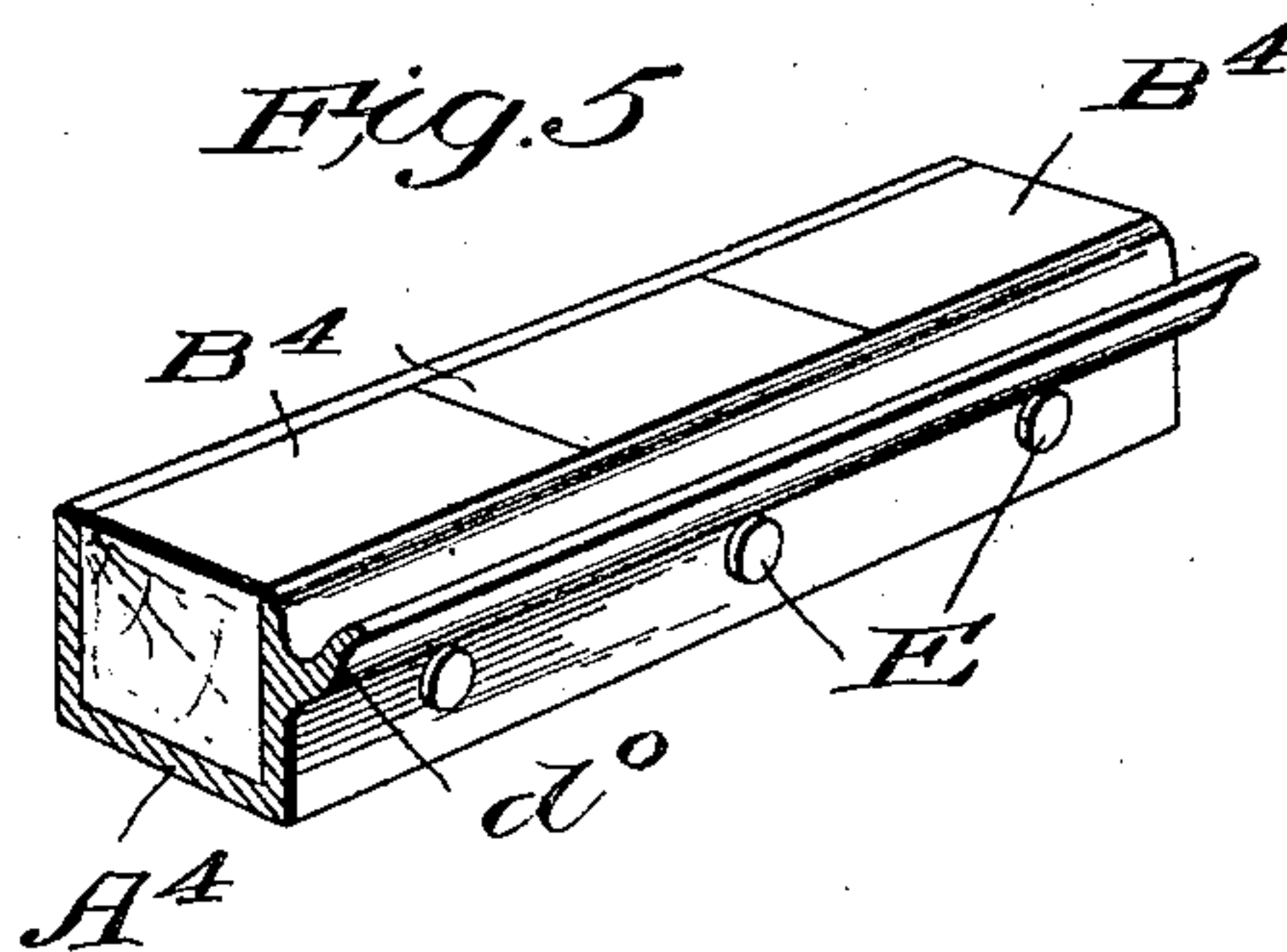


Fig. 7

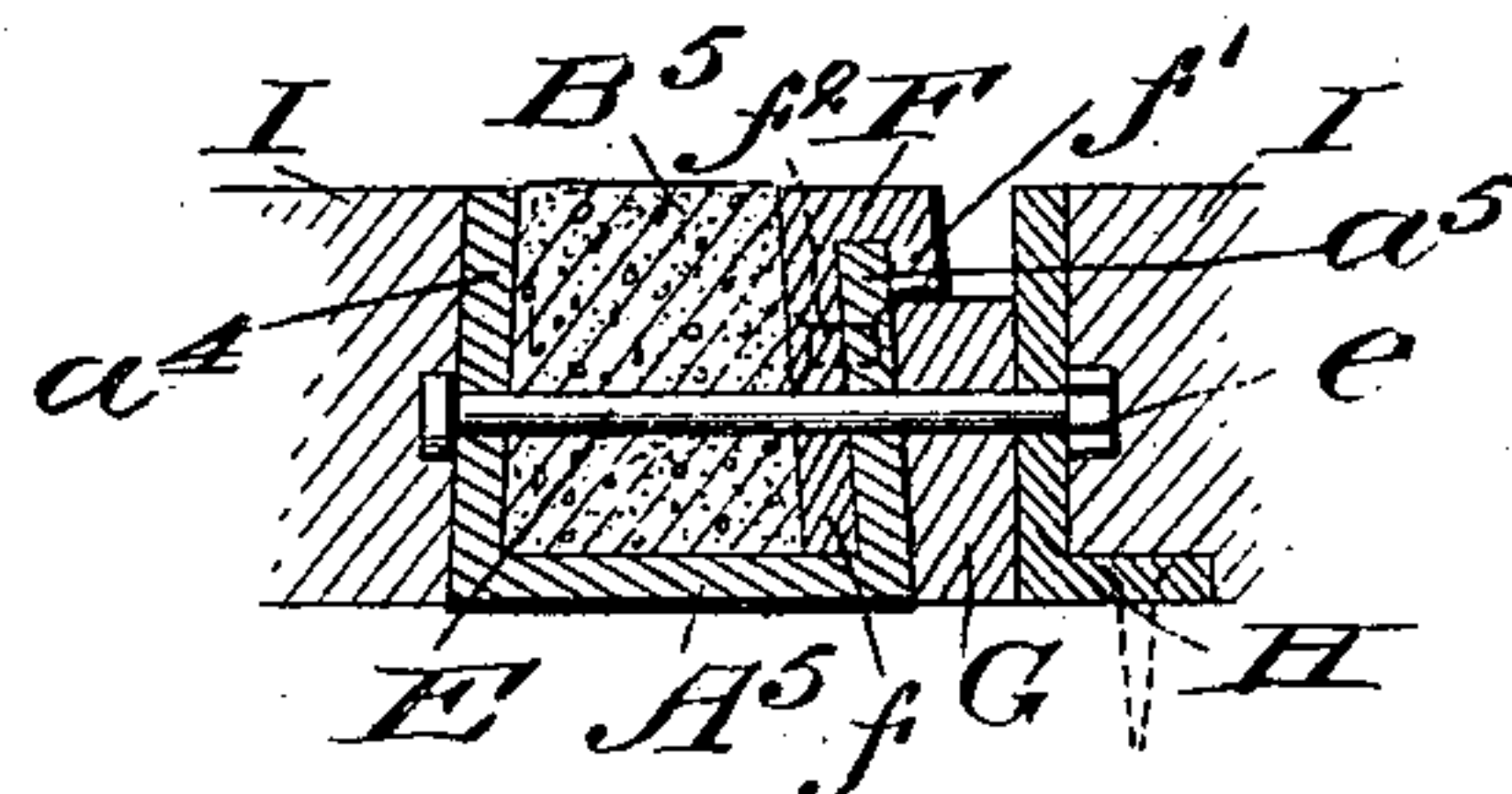


Fig. 6.

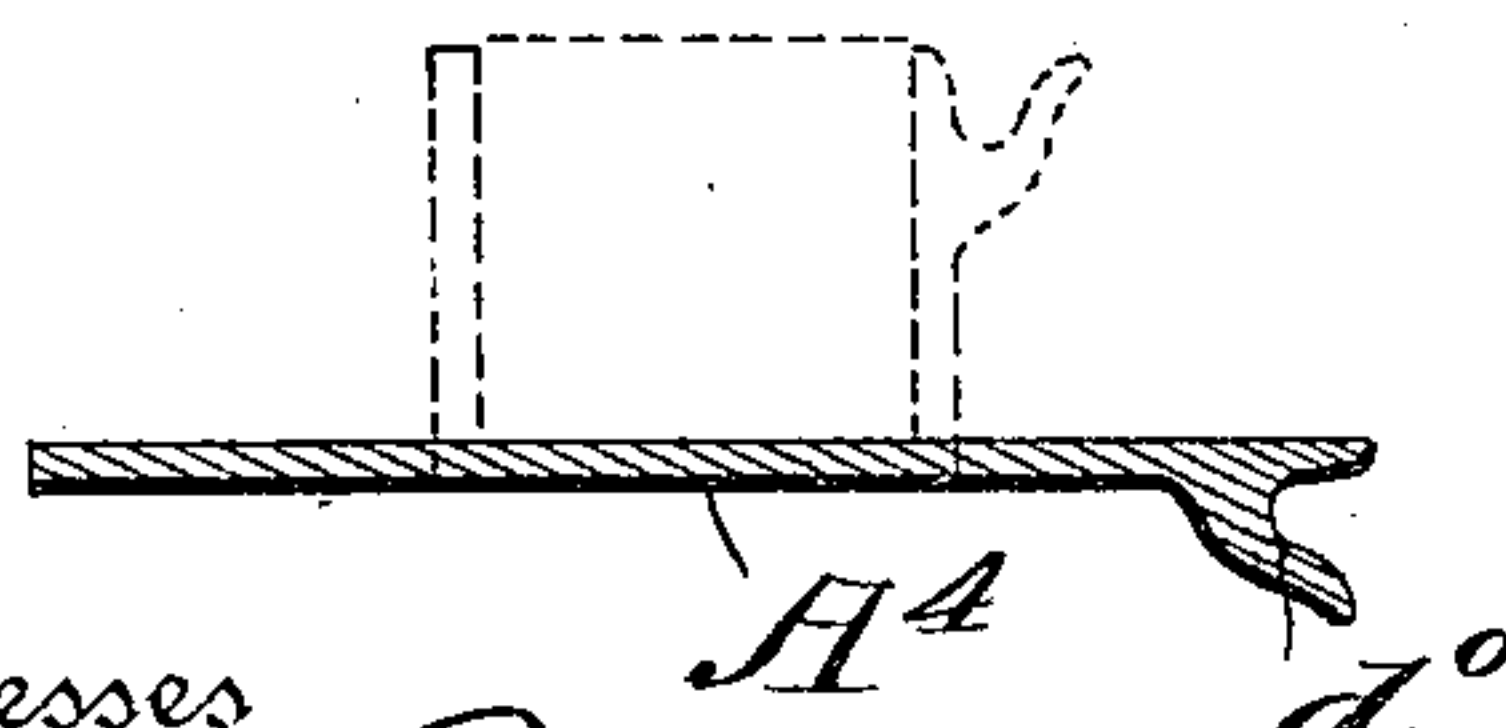
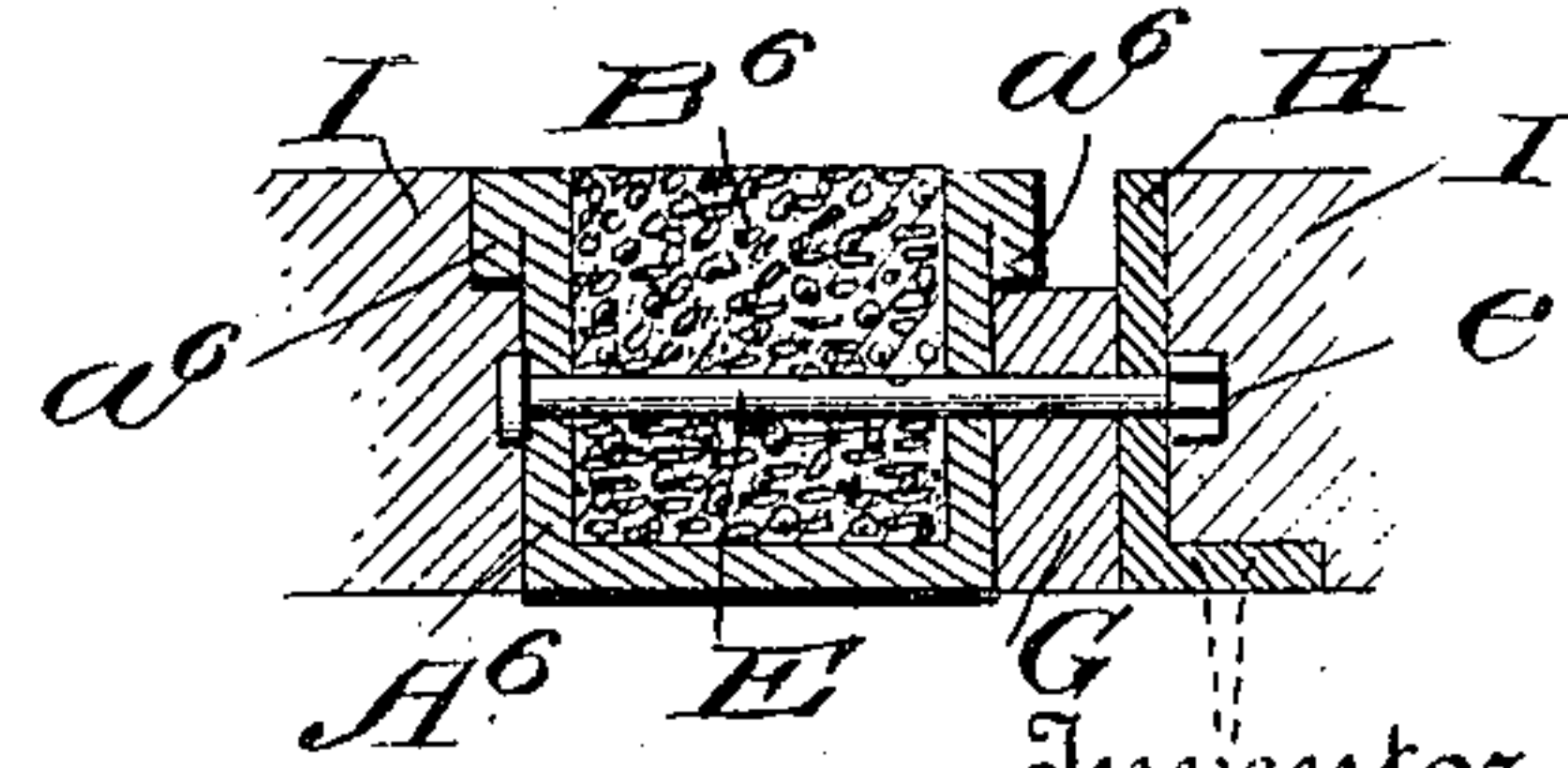


Fig. 8.



Witnesses
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UNITED STATES PATENT OFFICE.

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RAILWAY CONSTRUCTION.

968,618.

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Application filed February 2, 1910. Serial No. 541,532.

To all whom it may concern:

Be it known that I, THOMAS HENRY WHELESS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Railway Construction; and I do hereby 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.

My present invention relates to tracks for wheeled vehicles, the upper portions of which tracks are preferably substantially flush with the normal surface of the road-bed, so that said tracks will not interfere with the traffic on the road or street. The invention is also intended to provide an improved form of track which may be used mounted above cross ties or other supports in the usual way.

Reference is had to the accompanying drawings, in which similar parts are indicated by corresponding letters throughout the several views:—

Figure 1 shows a cross section of a rail fitted with a cement core. Fig. 2 shows a cross section of a similar rail fitted with a core of artificial stone or like composition. Fig. 3 shows a cross section of a rail fitted with a brick core. Fig. 4 shows in cross section a rail fitted with a dimension stone core. Fig. 5 is a perspective view, partly in section, showing a rail fitted with a core of blocks of wood. Fig. 6 shows a mode of bending up the rail trough shown in Fig. 5. Fig. 7 shows a cross section of a rail containing a bitulithic core with a flange guard and connections. Fig. 8 shows a modified form of rail containing a bitugranulithic core.

Referring to Fig. 1, A represents a trough having a flat bottom a and one side a' shorter than the other. In this trough, a cement core B is placed while in a plastic state, which cement core is reinforced with twisted rods c .

D represents a rail plate, which is connected to the trough A as by the long leg d , projecting down inside of said trough, the short leg d' engaging against the outer face of the short side a' of the trough A, which rail plate is provided with the grooved flange d^0 , adapted to receive the flange of the car wheel.

E represents a bolt passing through the parts d' , a' , d , the core B and the outer wall of the trough A, and held in place by a nut e . The upper portion of the core B projects slightly above the top of the trough A and of the rail plate D and is preferably slightly above the upper surface of the road-bed I.

In Fig. 2, the core B' is made of artificial stone, or other similar composition, and projects slightly above the sides of the trough A', and one side of the trough is provided with a hook-shaped flange a^2 , engaging the lug d^2 on the rail plate D', which rail plate is provided with a grooved flange d^0 to engage the rim of the wheel flange. The rail plate D' is connected to the trough A' by means of the bolts E and nuts e . c' are reinforcing bars.

In the form of device shown in Fig. 3, the trough A² has one side a^3 forming with the curved flange d^0 , a groove for the flange of the car wheel, and the rail plate D² is secured to said trough A² merely by the bolts E. In this form of device, bricks B² are shown, constituting the core.

In the form of device shown in Fig. 4, the rail plate D³ and trough A³ are generally similar to those shown in Fig. 1, except that the shoulder d^3 of the rail plate does not extend down far enough to engage the bolt E.

In the form of device shown in Figs. 5 and 6, the trough A⁴ is provided with an integral curved flange d^0 , which trough is constructed by rolling up the flat plate from the position shown in full lines to that shown in dotted lines in Fig. 6. Inside of said trough, a core of wooden blocks B⁴ is provided, said blocks preferably having the grain running vertically. Bolts E may be used to hold the blocks in place, if desired.

In the form of device shown in Fig. 7, the sides a^4 and a^5 of the trough A⁵ taper inward toward the top, and the flange guard F is mounted over the short side a^5 of the trough, one leg of said flange guard, f , projecting down into the trough A⁵, and the other leg f' overhanging the side a^5 of the trough, the said flange guard being held in place by rivets f^2 . Any suitable core B⁵ may be inserted, preferably one of plastic material, such as one of bitulithic material, meaning by this a composition of asphaltum, cement and broken stone. In order to provide a groove for the flange of the wheel, spacing blocks G are provided, outside of

which are the angle-irons H secured to the rail by means of bolts E, the whole being embedded in the road-bed I.

In the form of device shown in Fig. 8, the trough A^c has its sides bent over as at a^c, to form a flange guard for the wheels and also to stiffen the upper side of the trough. In this trough, any suitable core B^c may be mounted, preferably one composed of bitu-
 10 granulithic material, meaning by this a composition of small spiculæ of stone coated with asphalt and forced together under pressure. In order to form a groove for the flange of the wheel, a spacing block G is
 15 provided and an angle-iron H, the two being connected to the rail proper by means of the bolts E. The upper edge of the trough A^c and of the angle-iron H should preferably be flush with the road-bed I.

20 In all of the forms of the device, the upper surface of the core mounted in the trough should preferably be slightly raised above the metallic sides of said trough, so that the tread of the wheels will be supported
 25 chiefly on the core, and the only metal portions in contact will be the guard flange or side of the rail and the flange of the car wheel.

It will be noted that the herein described
 30 form of rail is provided with a broad, flat base, and that the base of the trough serves as a plate to resist lateral strains, while the two vertical sides of the trough serve as beams to resist vertical deflections of the
 35 rail. Thus great strength against lateral thrust, as in curves, and against vertical thrust, as where heavy loads are carried, are secured, and at the same time a broad firm base is provided for the rail, which may
 40 be mounted upon any suitable support. By this form of construction, a rolled trough is made to take the place of most, if not all, of the heavy and expensive T-rails which
 45 are now generally in use for passenger and light freight traffic over street railways and in inter-urban traffic.

The flat bottom trough may be mounted upon cross ties, stringers, a cement foundation, or in exceptionable circumstances on
 50 the foundation of the roadway itself. The trough should preferably be of thin rolled metal bent into shape and of sufficient strength to stand the traffic required.

I have described various forms of core as
 55 adapted for use in my invention, some of

which would be preferable under certain conditions of traffic, and others under varying climatic conditions, and I do not mean to limit the invention to any specific form of core, but wish to include any suitable form
 60 of core that is of sufficient strength and toughness to withstand the wear of the wheels.

It will be obvious that various modifications might be made in the herein described
 65 apparatus, which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:

70 1. A rail for flanged wheeled vehicles, comprising a continuous trough of rolled metal bent into shape, and having a guard flange on one side of said trough, adapted to engage the flanges of the wheels, a core
 75 mounted in said trough and forming a path for the tread of the wheels, and means for holding said core in place, substantially as described.

80 2. A rail for flanged wheeled vehicles, comprising a continuous trough of rolled metal bent into shape, and having a guard flange on one side of said trough, adapted to engage the flanges of the wheels, with a
 85 guide groove adjacent to said flange guard, a core mounted in said trough and forming a path for the tread of the wheels, and means for holding said core in place, substantially as described.

90 3. A rail for flanged wheeled vehicles, comprising a continuous trough of rolled metal bent into shape, a grooved flange guard at one side of said trough to engage the flanges of the wheels, a core mounted in
 95 said trough and forming a path for the tread of the wheels, and means for holding said core in place, substantially as described.

100 4. A rail for wheeled vehicles, comprising a continuous trough of rolled metal bent into shape, a core mounted in said trough and forming a path for the tread of the wheels, and means for holding said core in place, substantially as described.

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

THOMAS HENRY WHELESS.

Witnesses:

A. W. NEALE, Jr.,
 GEO. B. PITTS.