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R. B. COTTRELL

2,366,957

FRICTION SHOE

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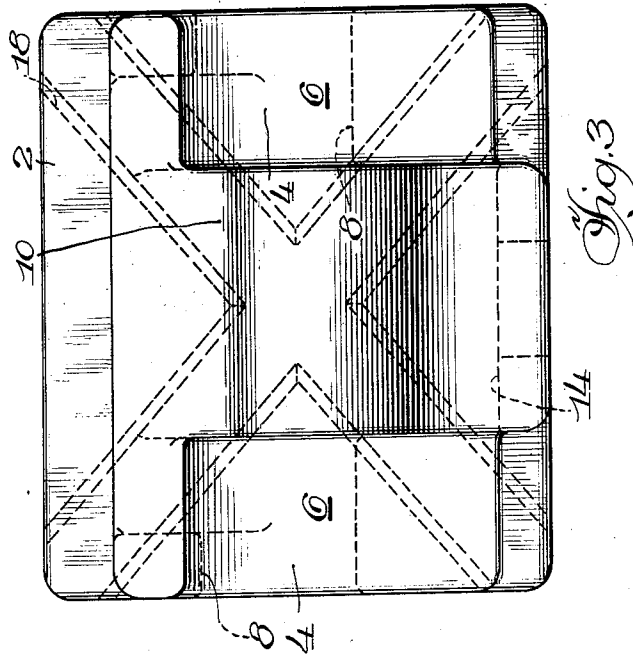


Fig. 1

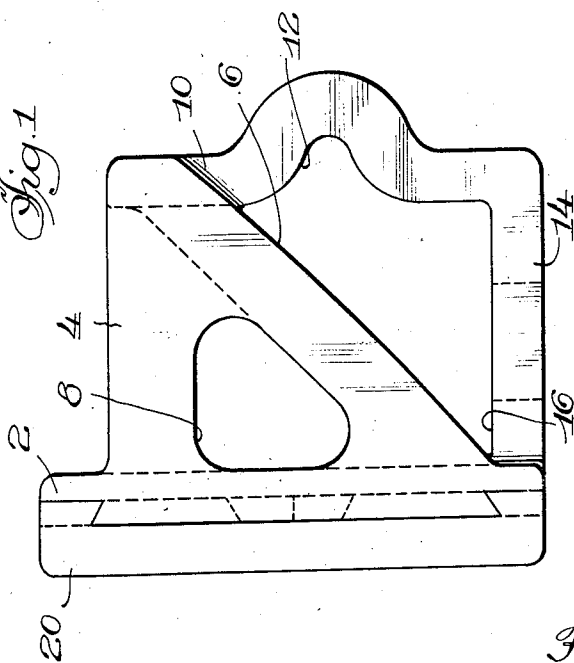


Fig. 2

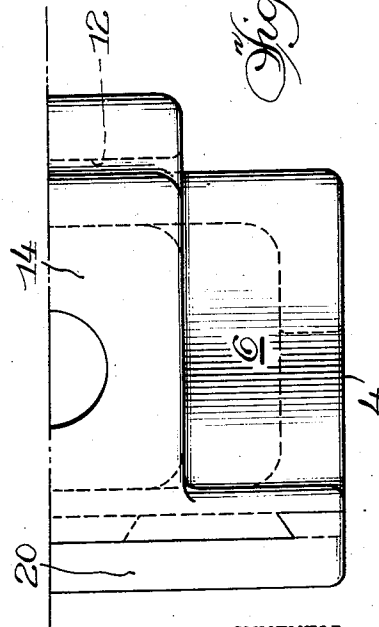


Fig. 3

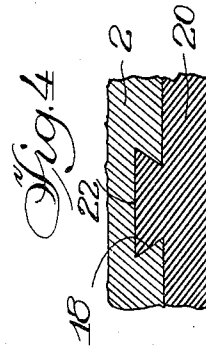


Fig. 4

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UNITED STATES PATENT OFFICE

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FRICTION SHOE

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Application December 6, 1943, Serial No. 513,010

10 Claims. (Cl. 188—251)

My invention relates to a friction shoe for utilization in a friction dampening device.

My novel shoe is especially adapted for use in a friction device associated with a railway car truck for dampening oscillations of the bolster supporting springs thereof. However, it will be understood that the shoe may be utilized in any device to which it may be adapted. The present invention is an improvement on the friction shoe shown and described in a co-pending application, Serial No. 436,731, filed in the United States Patent Office on March 30, 1942, in the name of David M. Light.

It has been found that under service conditions, a friction shoe of the above-described type, especially when utilized in a railway car truck, is subject to stresses which sometimes cause the front or main friction wall of the shoe to crack or break, especially at the corners thereof. It is therefore the principal object of the present invention to design a shoe of this type in which an iron friction face is cast onto the main friction wall of a cast steel shoe, said wall having an X-shaped recess extending between diagonally opposite corners thereof for the reception of a complementary lug on the iron portion of the shoe. It will be understood that by the novel construction above described, the friction face of the shoe will be retained in assembly with the cast steel portion thereof even if portions of the shoe are cracked or broken under service conditions.

In the drawing, Figure 1 is a side elevation of a friction shoe embodying my invention. Figure 2 is a half bottom plan view thereof, and Figure 3 is a rear elevation thereof. Figure 4 is a sectional view through the main friction wall of the shoe, illustrating the connection of the iron friction face thereto.

Describing my invention in detail, the friction shoe is a steel casting of cup-like form comprising the front or main friction wall 2 formed on its rear face with the spaced triangular ledges 4, 4 presenting the spaced friction or wedge surfaces 6, 6, said ledges being cored away as at 8, 8 to lighten the structure. Integrally formed with the ledges 4, 4 is a rear wall 10 having a handle-like loop 12 for the reception of a tool by means of which the shoe may be withdrawn from engagement with an associated friction surface, as more fully described in the above-mentioned co-pending application. The bottom wall 14 merges with the main wall 2 and with the rear wall 10, said bottom wall affording a seat as at 16 (Figure 1) for an associated spring, which extends upwardly

between the ledges 4, 4 and above the upper level of the main wall 2 for engagement with an associated abutment surface in the manner described in said depending application.

On the front face of the main wall 2 is an X-shaped recess 18 which flares toward its inner extremity as illustrated in Figure 4. An iron friction element 20 is cast onto the front face of the main wall 2, said element having an X-shaped projection 22 cast into the complementary recess 18 to afford an interlock with the main wall 2. It may be noted that the recess 18 and the complementary lug 22 extend between diagonally opposite corners of the main wall 2. Thus, in the event that one corner of the element 20 should be cracked or broken under service conditions, that corner nevertheless would remain in engagement with the main wall 2 of the friction shoe. Furthermore, it will be understood that inasmuch as the main wall 2 is of cast steel, it affords a relatively strong backing means for the friction element 20, thus diminishing the possibility of breakage in service.

It is to be understood that I do not wish to be limited by the exact embodiment of the device shown which is merely by way of illustration and not limitation as various and other forms of the device will, of course, be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a friction shoe, a cup-like member of cast steel having a front wall, a spaced rear wall comprising a handle-like loop, spaced ledges integral with said walls and presenting diagonal wedge surfaces, a bottom wall extending between said front and rear walls, and a pair of intersecting recesses in the front face of said front wall, each of said recesses extending between diagonally opposite corners of said front wall and each of said recesses flaring toward its inner extremity, and an iron friction member cast on said front face with complementary projections cast into said recesses.

2. In a friction shoe, a cup-like member of cast steel having a front wall, a spaced rear wall comprising a handle-like loop, spaced ledges integral with said walls and presenting diagonal wedge surfaces, a bottom wall extending between said front and rear walls, an X-shaped recess in the front face of said front wall, said recess flaring toward said inner extremity, and an iron friction member cast on said front face with a complementary projection cast into said recess.

3. In a friction shoe, a cup-like member of cast steel having a front wall, a spaced rear wall comprising a handle-like loop, spaced ledges integral with said walls and presenting diagonal wedge surfaces, a bottom wall extending between said front and rear walls, and a pair of intersecting recesses in the front face of said front wall, each of said recesses extending between diagonally opposite corners of said front wall, and an iron friction member cast on said front face with complementary projections cast into said recesses.

4. In a friction shoe, a cast steel cup-like member having a friction wall and at least one wedge surface angularly disposed with respect thereto, a spring seat on said member, a recess in the front face of said wall, an iron friction element cast onto said front face and having a complementary projection received within said recess, and a handle-like loop on the side of said member remote from said friction element.

5. In a friction shoe, a cup-like member of cast steel having a front wall, a spaced rear wall comprising a handle-like loop, spaced ledges integral with said walls and presenting diagonal wedge surfaces, a bottom wall extending between said front and rear walls, an X-shaped recess in the front face of said front wall, and an iron friction member cast on said front face with a complementary projection cast into said recess.

6. In a friction shoe, a steel cup-like member having a friction wall with a front face and at least one wedge surface angularly disposed with respect thereto, a spring seat on said member, a handle-like loop on the side of said member remote from said face, and an iron friction element cast on said face and bonded thereto.

7. In a friction shoe, a cast steel member comprising a front wall with a substantially rectangular flat front face, a spaced rear wall, spaced ledges integral with said walls and comprising respectively spaced wedge surfaces, a bottom wall extending between said front and rear walls, said bottom wall being spaced from said

ledges and presenting a spring seat facing said wedge surfaces in alignment with the space therebetween, an X-shaped recess in said front face extending between diagonally opposite corners thereof, and an iron friction member cast onto said front face and having a complementary lug cast into said recess.

8. In a friction shoe, a cast steel member comprising a front wall with a substantially rectangular flat front face, a spaced rear wall, spaced ledges integral with said walls and comprising respectively spaced wedge surfaces, a bottom wall extending between said front and rear walls, said bottom wall being spaced from said ledges and presenting a spring seat facing said wedge surfaces in alignment with the space therebetween, and an iron friction member cast on said face and bonded thereto.

9. In a friction shoe, a skeleton steel member comprising a front wall with a flat substantially rectangular front face, spaced ledges integrally formed with said wall and presenting respectively spaced wedge surfaces, a wall spaced from said ledges and projecting angularly from the rear face of said front wall, said second-mentioned wall presenting a spring seat facing said surfaces and aligned with the space between said ledges, an X-shaped recess in said front face extending between diagonally opposite corners thereof, and an iron member cast onto said front face and having a complementary lug cast into said recess.

10. In a friction shoe, a skeleton steel member comprising a front wall with a flat front face, spaced ledges integrally formed with said wall and presenting respectively spaced wedge surfaces, a wall projecting angularly from the rear face of said front wall and spaced from said ledges, said second-mentioned wall comprising a spring seat facing said surfaces and aligned with the space between said ledges, and an iron friction member cast on said face and bonded thereto.

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