April 30, 1940. C. A. WARDEN 2,199,166

RUNNING SKID

Filed Sept. 6, 1938

Fig. 1.

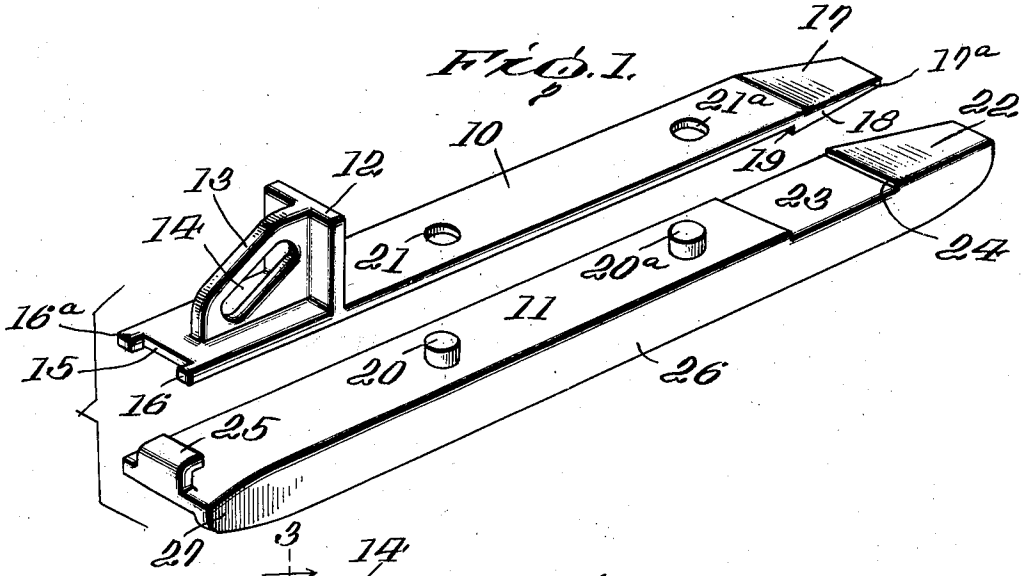


Fig. 2.

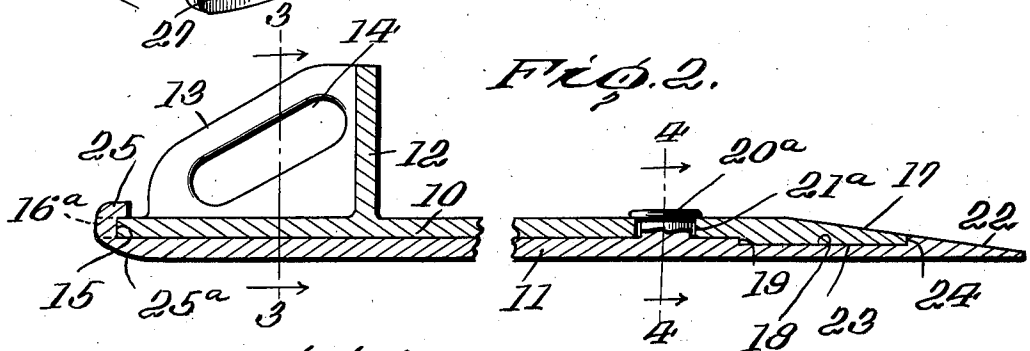


Fig. 3.

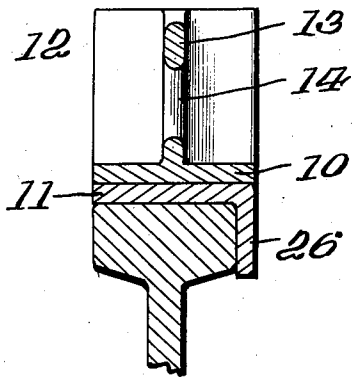
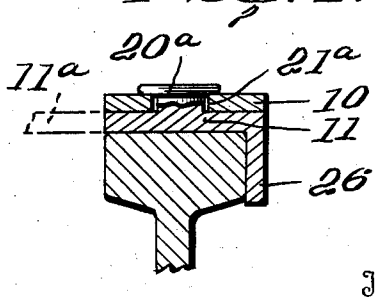


Fig. 4.



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RUNNING SKID

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6 Claims. (Cl. 104—260)

The present invention relates to new and useful improvements in skids for mine cars, and more particularly to improvements in a running skid which is adapted to be placed between the rail and the wheel of the mine car as it goes down an inclined trackway.

In mining operations, the mine cars must often be driven down long grades, and in order to save wear on the brakes and wheels, it is desirable to provide a running skid, as distinguished from a stopping or holding skid. When the thicker seams of coal are being worked out and the thinner seams are being opened up, new and more modern types of mine cars are being built to within three or four inches of the ball of the rails so that often brakes are not included in the mine car construction. These running skids are applied between one or more of the car wheels and the rail and are adapted to afford sufficient frictional resistance to slow up or hold back the speed of the cars so that the mine locomotive can control the entire group of cars with its own brakes and possibly the use of sand on the tracks. Obviously, therefore, these running skids are subjected to a great deal of wear, and the present invention is concerned with the provision of a running skid which has certain distinct characteristics and advantages.

An object of the present invention is to provide a running skid wherein a brake shoe is removably secured to a holder and is adapted to afford a friction surface between the holder and the rail for taking up the entire wear during use of the device.

A further object of the invention is to provide a running skid of the above type, which may be manually positioned between the rail and one of the car wheels during movement of the car without any danger of the operator's hand coming in contact with the car wheel.

A still further object of the invention is to provide a running skid of the above type, wherein the wheel of the car rests entirely on the holder and which is so designed that the moving car wheel riding up on the device will not dislodge the same from position on the rail.

A still further object of the invention is to provide a running skid of the above type, wherein the removable brake shoe is secured to the holder in such a manner that continued application of the skid betwen a car wheel and the rail will result in a tigher connection between the holder and the shoe.

A still further object of the invention is to provide a running skid of the above type, wherein frictional wear on the brake shoe during use of the device will not affect the connection between the shoe and the holder.

The invention still further aims to provide a running skid of the above type wherein the brake shoe and the holder are removably secured together in such a manner as to prevent separation of the parts due to forward pull of the holder on the brake shoe and any tendency for the parts to twist apart, as when rounding a curve.

The above and other objects of the invention will in part be obvious, and will be hereinafter more fully pointed out.

In the accompanying drawing,

Figure 1 is a perspective view showing the holder and removable brake shoe separated.

Figure 2 is a fragmentary side view, in section, showing the assembled holder and brake shoe.

Figure 3 is a sectional view, taken along the line 3—3 of Figure 2, showing the assembled holder and brake shoe.

Figure 4 is a sectional view taken substantially along the line 4—4 of Figure 2.

Referring more in detail to the accompanying drawing, the running skid is illustrated as including a holder 10 and a brake shoe 11. The holder 10 includes an upstanding transverse flange 12 adjacent the forward end thereof. This flange 12 serves as a stop against which a car wheel abuts when the skid is placed between the wheel and the rail. There is a brace member 13 disposed centrally of the holder between the flange 12 and the adjacent forward end of the holder. The brace member 13 is provided with an opening 14 which serves as a holder for transporting the skid and also as a hand hold for locating the skid on the rail. The transverse stop flange 12 prevents the operator's hand from coming in contact with the car wheel when the skid is placed in service. The holder 10 is provided at the same end with a cutout portion 15 which provides end lugs 16, 16a. The opposite or rear end of the holder 10 is tapered downwardly, as at 17, and also inwardly, as at 17a along the sides thereof. The under surface of the downwardly inclined or tapered end 17 of the holder is provided with a depending offset portion 18 which affords a transverse shoulder 19 spaced from the rear end of the holder.

The brake shoe 11 is provided with spaced integral upward projections 20, 20a which are adapted to extend into similarly spaced openings, 21, 21a, respectively, in the holder 10. The openings 21, 21a in the holder 10 are disposed between the tapered end 17 thereof and the transverse

flange 12. The rear end 22 of the brake shoe 11 is downwardly inclined and the sides are inwardly tapered symmetrically with respect to the inclination and shaping of the ends 17 of the holder 10. Immediately adjacent the inclined end 22 of the brake shoe 11, there is provided a transverse recessed portion 23 into which the offset portion 18 on the holder 10 is adapted to snugly fit. The transverse shoulder 19 on the holder 10 and the adjacent end of the holder abut against the transverse edges 24 provided by the recessed portion 23 in the brake shoe.

The opposite or forward end of the brake shoe 11 is provided with a hook portion 25 which is adapted to snugly fit between the lugs 16, 16a on the holder 10 and to thus overlie the upper surface of the holder, as particularly shown in Figure 2. Thus, the lugs 16, 16a cooperate with the hook portion 25 on the brake shoe to provide locking means at the forward end of the brake shoe and holder for guarding against any tendency of the brake shoe to pivot under and relative to the holder. The forward end of the under surface of the brake shoe 11 is upwardly inclined, as shown at 25a in Figure 2, so that the skid will negotiate rail joints which may be vertically out of alignment. The brake shoe 11 is provided at one longitudinal edge thereof with a depending flange 26 which is adapted to engage one edge of the rail. The flange 26 may be placed at either longitudinal edge of the brake shoe, depending upon whether a "left" or "right" skid is employed. The forward end of the flange 26 is formed so that it extends outwardly, as at 27. This outwardly extending portion at the forward end of the flange 26 enables the skid to readily negotiate any rail joints which may be laterally out of alignment. Thus, the outwardly extending portion 27 and the upwardly inclined portion 25a permit the skid to negotiate all bad joints which may occur between adjacent rail ends.

When the holder and brake shoe are assembled, the hook portion 25 in the forward end of the brake shoe 11 is placed between the lugs 16, 16a at the forward end of the holder 10. When the adjacent edges of the holder and brake shoe are then fitted closely together, the depending offset portion 18 at the rear end of the holder 10 will snugly fit within the recessed portion 23 at the rear end of the brake shoe 11. Similarly, the projections 20, 20a on the brake shoe 11 will be disposed within the openings, 21, 21a, respectively, in the holder 10. The ends of the projections 21, 21a are then peened or riveted so as to tightly engage the upper surface of the holder 10 around the openings therein. Thus, the assembled skid can be conveniently transported by hand from one trackway to another without the holder and brake shoe becoming separated.

When the skid is to be employed, it is placed on a rail with the under surface of the brake shoe 11 resting thereon and with the flange 26 engaging the inside edge of the rail. In this position of the skid, the similarly inclined surfaces 17, 22 at the rear ends of the holder and brake shoe, respectively, afford a smooth surface over which the car wheel can ride. The car wheel then passes over the rivet head of the projection 20a and finally abuts against the transverse flange 12. The car wheel thus rests entirely on the holder, and each time the skid is placed between the rail and the car wheel, the connection between the holder and the brake shoe at 20a will be tightened due to the movement of the car wheel over the projection 20a.

From the foregoing description, it will be seen that the downwardly offset portion 18 at the rear end of the holder 10 cooperates with the recessed portion 23 adjacent the rear end of the brake shoe 11 to prevent relative movement between the holder and the brake shoe. Similarly, the hook portion 25 at the forward end of the brake shoe 11 cooperates with the lugs 16, 16a at the forward end of the holder 10 to prevent relative movement therebetween. Of course, the projections 20, 20a prevent separation of the shoe from the holder and the brace member 13, with the aperture 14 therethrough, serves as a handle means for transporting the assembled skid from one location to another and for conveniently applying the skid between a rail and a car wheel.

In use, the car wheel rides up the inclined surface at the rear end of the skid, this inclined surface being formed by the similarly tapered ends 17, 22 of the holder and brake shoe, respectively. The side edges of the portions 17 and 22 are tapered inwardly toward the center of the rail so that the car wheel flange will not strike the side of the skid and dislodge the same from its position on the rail. Thus, the shaping of the rear end of the skid assures that the device will not become dislodged when it is applied between the wheel and the rail. The car wheel rests entirely on the upper surface of the holder 10 so that the entire wear is taken up by the brake shoe 11. When the wheel passes over the projection 20a, the connection between the holder and the brake shoe will be tightened. It is to be particularly noted that the projections 20, 20a are formed integral with the brake shoe 11. Thus, wearing of the under surface of the brake shoe during use of the skid will not affect the connection afforded by the projections 20, 20a with the holder 10, as in the case where a separate bolt or rivet is employed for securing the holder and the brake shoe together. When the brake shoe is substantially worn, its connection with the holder 10 can be readily broken by chipping off the riveted ends of the projections 20, 20a. Thus, the holder is not subject to wear when the skid is used and a worn brake shoe may be readily removed and replaced by a new one. It is to be further noted that the holder is so designed that it can be used with either right or left brake shoes without destroying any of its functions.

As shown diagrammatically in Figure 4, the horizontal portion of the brake shoe 11 may be extended, as shown by dotted lines, to provide a lateral extension 11a. This portion 11a extends beyond the edge of the holder 10 and also beyond the outside of the ball of the rail. In passing over switches which are normally maintained open by spring means or the like, the wheels of the car are relied upon to close the switch. In such cases, it often occurs that the switch is not completely closed so that a relatively narrow skid may be dropped between the rails during passage thereover. With a lateral extension 11a provided on the brake shoe 11, the skid will not drop through the space which may be left between the rails.

It is to be clearly understood that various changes in the details of construction and arrangement of parts may be made without departing from the scope of the invention as set forth in the appended claims.

I claim:

1. A running skid adapted to be applied between a car wheel and a rail, comprising a holder on which the car wheel is adapted to rest, said holder having an opening adjacent the rear end thereof and disposed in the path of a car wheel riding over the same, a stop flange at the forward end of said holder for limiting movement of the car wheel thereon, said holder having the rear end thereof tapered downwardly and having a depending projection, a brake shoe disposed between said holder and the rail and adapted to assume the entire wear when the skid is used, said brake shoe extending beyond the rear end of said holder and having a similarly inclined end, said brake shoe having a recessed portion adjacent the rear end thereof for receiving the depending projection at the rear end of the said holder, and means including an upstanding projection integral with said brake shoe and extending into the opening in said holder for preventing relative movement between the holder and the brake shoe.

2. A running skid adapted to be applied between a car wheel and a rail, comprising a holder on which the car wheel is adapted to rest, a stop flange adjacent the forward end of said holder for limiting movement of the car wheel thereon, said holder having a rearwardly and downwardly tapered upper surface at the opposite end thereof and having the sides thereof adjacent the downwardly tapered surface inclined inwardly toward the center thereof, a brake shoe disposed beneath said holder and extending beyond the rear end thereof and serving as the sole wearing surface on the rail, the upper surface of the rear end of said brake shoe being similarly inclined with respect to the downwardly tapered surface on said holder, the edges of said brake shoe adjacent the downwardly inclined upper surface being tapered inwardly toward the center thereof whereby the car wheel flange will not dislodge the skid when riding up thereon, said brake shoe having a depending rail engaging flange at one edge thereof, and means for connecting said brake shoe to said holder for preventing relative movement therebetween and including integral projections on the holder and the brake shoe cooperating with corresponding recesses in the holder and the brake shoe.

3. A running skid adapted to be applied between a car wheel and a rail, comprising a holder upon which the car wheel is adapted to rest, a stop flange adjacent the forward end thereof for limiting movement of the car wheel thereon, a brake shoe disposed beneath said holder and serving as the sole wearing surface on the rail and having a depending rail engaging flange at one edge thereof, the rear end of said holder and of said brake shoe being similarly inclined downwardly and rearwardly for permitting a car wheel to ride up on the holder, said holder having an opening therethrough immediately adjacent the downwardly inclined surface at the rear end thereof and disposed in the path of a car wheel riding over the holder into engagement with said stop flange, and means including an upward projection integral with said brake shoe and extending through the opening in said holder for preventing relative movement between the holder and the brake shoe, said upward projection being peened over the surface of said holder around the opening therethrough and adapted to be more firmly tightened each time a car wheel rides up on the holder.

4. A running skid adapted to be applied between a car wheel and a rail, comprising a holder on which the car wheel is entirely supported, a stop flange on said holder at the forward end thereof for limiting movement of the car wheel thereon, a brake shoe disposed beneath said holder and extending beyond the rear end thereof and serving as the sole wearing surface between the holder and the rail, said brake shoe having a depending rail engaging flange, and means for connecting said brake shoe to said holder for preventing relative movement therebetween.

5. A running skid adapted to be applied between a car wheel and a rail, comprising a holder on which the car wheel is entirely supported, a stop flange on said holder at the forward end thereof for limiting movement of the car wheel thereon, said holder having an opening therethrough adjacent the rear end thereof and disposed in the path of the car wheel during its movement into engagement with said stop flange, a brake shoe disposed beneath said holder and extending beyond the rear end thereof and serving as the sole wearing surface between the holder and the rail, and means including an upward projection integral with said brake shoe and extending through the said opening in the holder for preventing relative movement between the holder and the brake shoe, said upward projection being flattened over the surface of said holder around the opening therethrough and adapted to be more firmly tightened each time a car wheel rides over the same into engagement with said stop flange.

6. A running skid adapted to be applied between a car wheel and a rail, comprising a holder on which the car wheel is entirely supported, a stop flange adjacent the forward end of said holder for limiting movement of the car wheel thereon, said holder having a depending projection adjacent the rear end thereof and having an opening therethrough in advance of said depending projection and disposed in the path of a car wheel riding over the holder into engagement with said stop flange, a brake shoe disposed between said holder and the rail and adapted to assume the entire wear when the skid is in use, said brake shoe including a depending rail engaging flange and having a recess adjacent the rear end thereof for receiving the depending projection on said holder, and means including an upstanding projection integral with said brake shoe and extending into the opening in said holder for preventing relative movement between the holder and the brake shoe, said upstanding projection being flattened over the upper surface of said holder around the opening therethrough and adapted to be more firmly tightened each time a car wheel rides over the same.

CHARLES A. WARDEN.