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BRAKE LINING

Filed Sept. 2, 1930

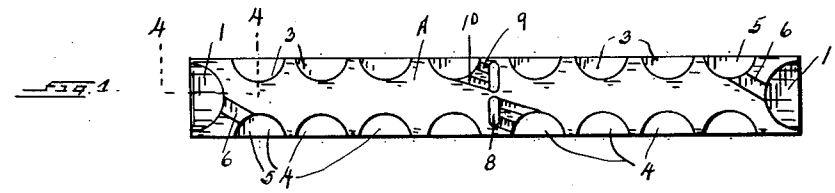


Fig. 1.

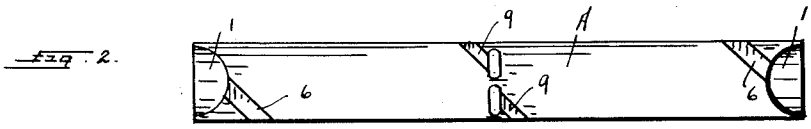


Fig. 2.



Fig. 3

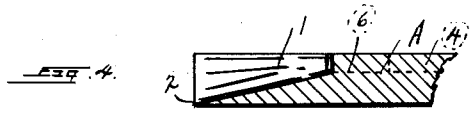


Fig. 4.

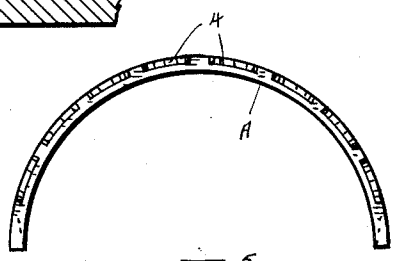


Fig. 5.

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BRAKE LINING

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Application September 2, 1930. Serial No. 479,202

2 Claims. (Cl. 188—251)

Our invention relates to brakes for motive vehicles and more particularly to brakes for use on automobiles which brakes are to be made preferably of a metal compound or alloy.

A further object is to provide a metal brake alloy of which copper is the main constituent and which brake lining is formed in a special design to provide for cleaning of the brake drum when the lining is brought into contact therewith.

A still further object is to provide a brake lining which will be constructed of copper alloy mixed and molded with the use of a flux of carbonaceous shale.

A still further object is to provide a brake lining which is made in such a form as to clean the brake drum when it is contacted therewith and which brake lining is so constructed as to be self-cooling when in operation.

These objects we accomplish with the device illustrated in the accompanying drawing in which similar numerals and letters of reference indicate like parts throughout the several views and as described in the specification forming a part of this application and pointed out in the appended claims.

In the drawing, in which we have shown the best and most preferred manner of building our invention, Figure 1 is a plan view of the side of the brake band which does not engage the drum. Figure 2 is a plan view of the same side of a modified form of band, leaving out the cooling recesses. Figure 3 is a side edge elevation of Figure 1. Figure 4 is a section on line 4—4 of Figure 1. Figure 5 is a side elevation of the brake band when curved to contact on the circumference of a brake drum, as for an external brake. The expanding type of brake would be reversed in form.

In the drawing we have shown our brake band as moulded of a band or bar A, having each end provided with a curved or semi-circular depression 1 formed therein cut in a slant, leaving a feather edge on the end of the band, as shown at 2 in Figure 4 of the drawing. We then provide an angled cleaning slot 6 leading from the rear of said depressions to the edge of the band A to allow foreign material to pass from said depressions through and out of said slot. Along the edges of the non-engaging face of the band A, we provide spaced apart cooling recesses 3 and 4, which recesses are cut into the face in semi-circles or arcs, and the recesses 5 at the ends of the band are connected with the depressions 1 by the slots 6; instead of having the slots continue through the edge of the band they are cut into the end recesses. Medially of the band we then cut holes or openings 8 through the band to aid in the cooling thereof and to allow the openings to aid in cleaning the brake drums, and the said openings are also connected with either the edge of the band, as shown in Figure 2, or with some of the recesses 3 and 4 by spaced apart slots 9 and 10. These slots 9 and 10 are to draw all foreign material from the openings and discharge it at the edge of the band. As shown in the drawing, the bands are made so that they can be used on either the right or left brake and, as shown, the slots from one end are cut on an angle leading out to one side, while the slots from the other end are cut to the opposite side. This manner of constructing the bands makes it possible to use one mold for making the bands whether they be used on the right or left brake shoe. The bands will be curved to fit the brake shoe, as shown in Figure 5, or may be cast in the curved form if desired.

The bands are cast from an alloy of copper, lead and tin, amalgamated with a carbonaceous shale in the proportions as follows: 80% copper; 19% lead; and 1% tin. These percentages of metals are mixed together and amalgamated with a percentage of carbonaceous shale varying from 1½% to 5% of the shale by weight when they are moulded or cast. The carbonaceous shale used consists, as near as an analysis can be made, of the following ingredients: SiO_2, Al_2O_3, Fe_2O_3, TiO_2, CaO, MgO, K_2O, Na_2O, with a loss of which no analysis has been possible.

This manufacturing of an amalgamation or alloy forms a bronze which will not check, crack or crumble, and one which has a high thermal conductivity, thereby eliminating the danger and trouble due to brakes heating from often or continued applications.

Deviations may be made in the percentages of metals used, but we have found through continued experiments that the above proportions produce the best results.

Having thus described our invention we desire to secure by Letters Patent and claim:

1. In a brake lining for vehicles the combination of a bar of copper, lead, tin and carbonaceous shale, cast into the desired form.

2. In a brake lining for motive vehicles the combination of eighty per cent copper, nineteen per cent lead and one per cent tin, alloyed with carbonaceous shale and cast into a brake lining.

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