Jan 6, 1931. A. W. FREHSE 1,787,780

BRAKE SHOE

Filed Dec. 24, 1928

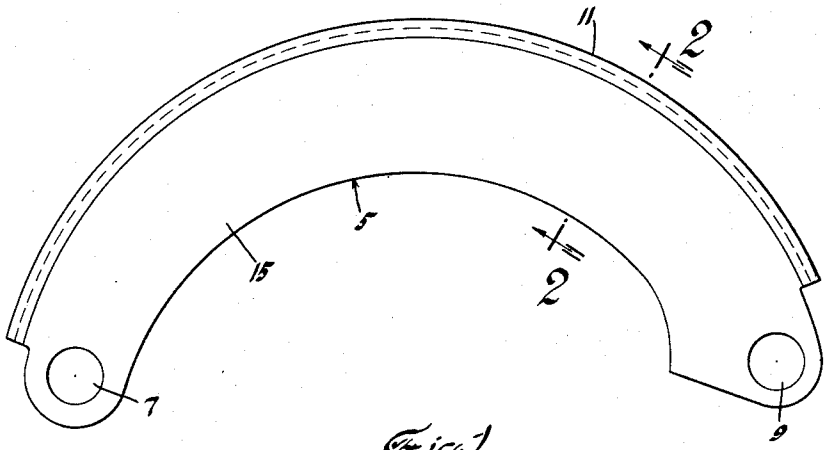


Fig. 1

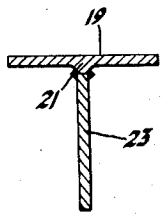


Fig. 3

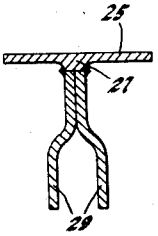


Fig. 4

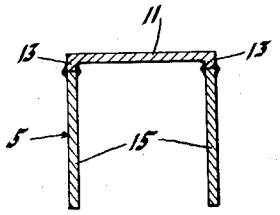


Fig. 2

Inventor

Albert W. Frehse

By Blackmore, Spencer & Flint

Attorneys

Patented Jan. 6, 1931 1,787,780

UNITED STATES PATENT OFFICE

ALBERT W. FREHSE, OF DETROIT, MICHIGAN, ASSIGNOR TO GENERAL MOTORS CORPORATION, OF DETROIT, MICHIGAN, A CORPORATION OF DELAWARE

BRAKE SHOE

Application filed December 24, 1928. Serial No. 328,074.

This invention relates to brakes, and particularly to brake shoes as used for frictionally engaging the drums of internal expanding brakes.

An object of the invention is to make a brake shoe possessing in a high degree efficiency in operation and economy in manufacture.

Other objects and advantages will be understood from the following description.

In the drawing accompanying the description:

Figure 1 is a view in elevation of the novel brake shoe;

Figure 2 is a section on line 2—2 of Figure 1;

Figure 3 is a similar section through a modified form of the shoe.

Figure 4 is another modification in section.

Referring to the drawing, numeral 5 designates, in general, a brake shoe designed for engagement with the internal surface of the flange of a conventional or any preferred kind of brake drum.

The shoe is apertured at one end as at 7 for association therewith of any suitable anchoring means. At 9 is an opening at the other end of the shoe for carrying a cam follower. It should be explained that these openings 7 and 9 are shown merely to suggest any sort of means for the anchorage and the cam-engaging instrumentality. Since the invention is not concerned with the anchorage, nor with the cam-engaging means, no further illustration or description need be given.

The shoe comprises a rolled metal lining-carrying member 11. This member will be curved in outline to conform to the inner surface of the drum, as usual. Any sort of lining may be used, and no lining is illustrated. This rolled member may be formed with flanges 13. These flanges are to be of slight radial depth, forming a rolled channel. To each of these flanges is secured a stiffening member 15 of sheet metal. These stiffening members are to be welded to the flanges 13 as shown.

In Figure 3 is a modified form. In this form the lining-carrying part 19 is also a rolled member, in this case being rolled into T-shape in section, the flange 21 being between the side edges of the shoe and of slight radial dimension. A stiffening member 23 is of substantially the same transverse dimension as the flange 21 and is welded thereto in edge-to-edge relation, as clearly shown in the drawing.

Brake shoes are required in very large numbers, especially in view of the almost universal use of internal rigid shoe brakes. The very great production of motor vehicles and the almost universal use of four-wheel brakes makes necessary the utmost economy in manufacture consistent with efficiency in operation.

Shoes of channel section and of T-section are known to be old. Shoes of sheet metal having their parts secured by welding are also old. This invention aims to show a way to make the shoes of T-section or of channel section more economically than heretofore, and with greater strength. When shoes are rolled into T-section or channel section, and the flanges are of sufficient dimension to give the necessary strength, the provision of the curved surface for the lining-carrying part causes distortion of the metal in the flanges. In shoes made from sheet metal stampings with the parts welded together much difficulty has arisen in properly securing the parts. These difficulties are well known to those familiar with the art and with the patents which show attempts to avoid the difficulties.

These difficulties are overcome by the construction here shown. The stamped metal stiffening members are welded to the radially short flanges of the lining-carrying part. The transverse dimension of the radial flange of the lining-carrying part is substantially the same as that of the stiffening member, with the result that a flash or butt welding instantly makes a perfect union. As a result, the shoe is exceedingly strong, there being no distortion of the metal in the stiffening member. Such a shoe is very cheap to manufacture, since the stiffening members are of stamped metal and the lining-carrying part which is rolled either in the form of

a T-section, or channel, is almost as cheap as a flat metal sheet. The attachment is instantaneous, thereby saving time in the operation of manufacture. All overlapping of metal is avoided, thereby saving material and facilitating the operation of welding.

As a further modification, Figure 4 shows a shoe having a lining-carrying part 25 with a flange 27 of limited radial extent but wider than the flange of Figure 3. To this flange are welded two stiffening members 29 as shown.

I claim:

1. A brake shoe comprising a rolled lining-carrying part with at least one short radial flange, and a stiffening member secured to said flange in the plane of the flange.

2. A brake shoe having a curved lining-carrying part consisting of a rolled member having a short radial flange, a stamped sheet metal stiffening member in edge-to-edge contact with said flange, and secured thereto.

3. A brake shoe having a rolled lining-carrying part with at least one short radial flange, and a stiffening member welded to said flange in the plane of the flange.

4. A brake shoe having a curved lining-carrying part consisting of a rolled member having a short radial flange, at least one stamped sheet metal stiffening member in edge-to-edge contact with said flange and welded thereto.

5. A brake shoe having a lining-carrying part with a pair of radially short flanges, stiffening members shaped to engage said flanges in edge-to-edge relation, said stiffening members being secured to said flanges.

6. A brake shoe having a lining-carrying part with a pair of radially short flanges, stiffening members shaped to engage said flanges in edge-to-edge relation and welded thereto.

7. A method of making brake shoes consisting in rolling a lining-carrying part with at least one short dimension radial flange, shaping a stiffening member to engage said flange in edge-to-edge relation, and welding said stiffening member to said flange.

8. The method of making brake shoes consisting in rolling a lining-carrying part into curved outline and with a radial flange of short depth, stamping from sheet metal a stiffening member shaped to engage said flange in edge-to-edge relation, and flash welding said stiffening member to said flange.

In testimony whereof I affix my signature.

ALBERT W. FREHSE.