May 7, 1946. A. C. MATHIESON 2,400,015

BRAKE SHOE CONSTRUCTION

Filed Nov. 30, 1944

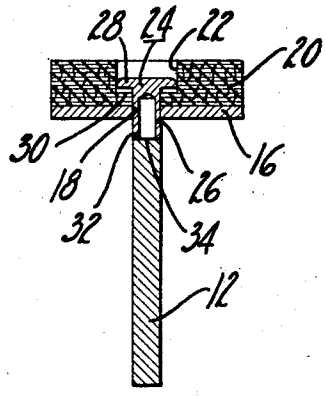


Fig. 1

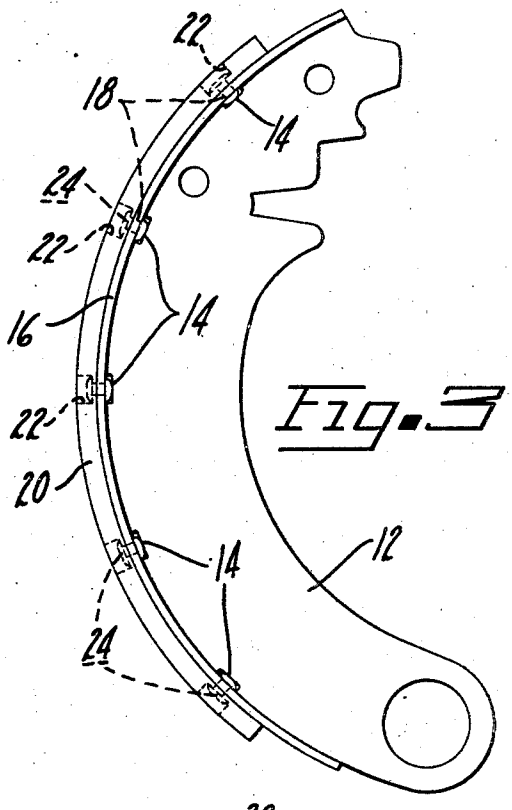


Fig. 3

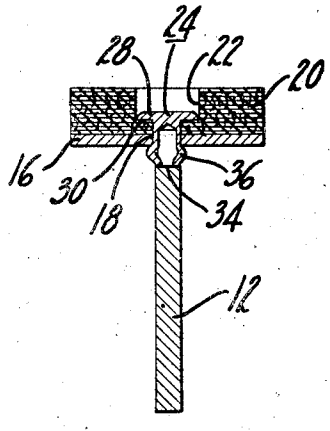


Fig. 2

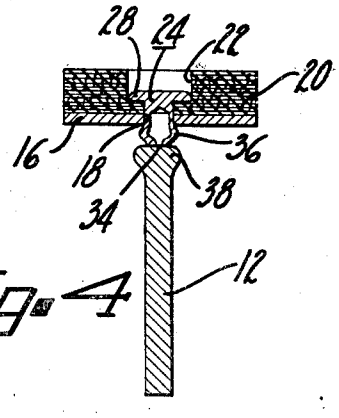


Fig. 4

INVENTOR
ANDREW C. MATHIESON
BY
T. J. Plante
ATTORNEY

Published by AsbestosClaims.Law
asbestosclaims.law/library/21943/1

Patented May 7, 1946 2,400,015

UNITED STATES PATENT OFFICE

2,400,015

BRAKE SHOE CONSTRUCTION

Andrew C. Mathieson, South Bend, Ind., assignor to Bendix Aviation Corporation, South Bend, Ind., a corporation of Indiana

Application November 30, 1944, Serial No. 565,864

4 Claims. (Cl. 188—234)

This invention relates to brake shoes and particularly to the method and means for fastening the shoe lining to the shoe rim.

The conventional fastening means which hold shoe lining in place on the rim are rivets arranged in two rows, one row being on each side of the shoe web. While this arrangement is satisfactory for shoes which are of normal width, it is not applicable to shoes having narrow rims. With narrow rims and linings, a single row of rivets located at the center of the lining should be used, but heretofore it has not been possible to accomplish this because the shoe web is located at the middle of the rim and therefore precludes the use of an upsetting anvil for the rivets.

An object of the present invention is to provide suitable fastening means for securing the lining to the rim in narrow rim shoes.

A further object of the invention is to utilize a row of rivets located approximately at the center of the lining for fastening a shoe lining to a shoe rim.

Other objects and advantages of the present invention will become apparent during the course of the following description, reference being had therein to the accompanying drawing, in which:

Figure 1 is a cross-section taken through a brake shoe assembly preparatory to upsetting the rivets to secure the shoe lining to the shoe rim;

Figure 2 shows the same section as Figure 1 after the upsetting operation, with the assembly in its final form;

Figure 3 is a side elevation of a completed brake shoe embodying my invention; and

Figure 4 is a section taken through a shoe showing a modified version of my improved construction.

Referring to Figures 1 to 3 inclusive, the brake shoe comprises a web 12 having a plurality of circumferentially spaced notches 14 cut in its periphery, a rim 16 at right angles to the web 12 and having a plurality of openings 18 formed therein corresponding to and in alignment with the notches in the web, and a friction lining segment 20 having a plurality of countersunk openings 22 corresponding to and aligned with the openings 18 in the rim and the notches 14 in the web. The openings in the web and lining are preferably arranged in a row approximately at the center of said rim and lining, or in other words, in the plane of the shoe web.

As illustrated in Figure 1, I insert a rivet 24 in each of the openings formed through the lining and rim. The rivets may be of conventional type and their shanks 26 may be either tubular as shown, or solid, whichever is preferred. As shown in Figure 1, the head 28 of the rivet is spaced somewhat above the shoulder 30 formed in the lining and the point 32 of the rivet is in contact with the bottom surface 34 of the respective notch in the web.

With the web of the shoe constituting, in effect, an anvil, the upsetting operation is performed. As a result of this, the head 26 of the rivet is forced against the shoulder 30 of the lining and the point of the rivet is spread or expanded as shown at 36 to form a head on the underside of the shoe rim. The nut result is an effective fastening which is applicable to shoes having narrow rims. The process used in fastening the lining to the rim is both rapid and inexpensive.

In the version illustrated in Figure 4 the construction of the web is varied somewhat by providing a thickened portion 38 below the rivet point, thereby increasing the strength of the web for the rivet upsetting operation and increasing the bearing surface for the rivet point.

Although certain particular embodiments of my invention have been described, it will be understood by those skilled in the art that the object of the invention may be attained by the use of constructions different in certain respects from those disclosed without departing from the underlying principles of the invention. I therefore desire by the following claims to include within the scope of my invention all such variations and modifications by which substantially the results of my invention may be obtained through the use of substantially the same or equivalent means.

I claim:

1. A brake shoe comprising a web having a plurality of notches circumferentially spaced along its periphery, a rim at right angles to said web and having openings aligned with the notches in the web, a friction lining on the face of the rim having countersunk openings aligned with the rim openings, and a plurality of rivets having their head portions embedded in the respective lining openings, their shanks extending through the rim openings, and their points contacting the bottom surfaces of the respective web notches and spread to bear against the underside of the rim.

2. A brake shoe comprising a web having a notch in its periphery, a rim at right angles to said web and having an opening aligned with the notch in the web, a friction lining on the face of the rim having a countersunk opening aligned with the rim opening, and a rivet having its head portion embedded in the lining opening, its shank extending through the rim opening, and its point

Published by AsbestosClaims.Law
asbestosclaims.law/library/21943/2

contacting the bottom surface of the web notch and spread to bear against the underside of the rim.

3. A brake shoe comprising a web having a notch in its periphery, a rim at right angles to said web and having an opening aligned with the notch in the web, a friction lining on the face of the rim having a countersunk opening aligned with the rim opening, and a rivet having its head portion embedded in the lining opening, and having a tubular shank extending through the rim opening with its inner end contacting the bottom surface of the web notch and spread between the inner end and the rim to bear against the underside of the rim.

4. That method of manufacturing a brake shoe which comprises forming a web with one or more notches in its periphery, forming a rim with one or more openings corresponding to the web notches, forming a lining with one or more countersunk openings corresponding to the rim openings, inserting one or more rivets in the respective openings with the shanks extending through the rim and the points in contact with the bottom surfaces of the web notches and with the heads spaced outwardly from the shoulders formed in the lining, and upsetting the rivet to force the head thereof against the lining shoulder and at the same time spread the rivet point to fasten it to the underside of the rim, the shoe web serving as the anvil during the upsetting operation.

ANDREW C. MATHIESON.

Published by AsbestosClaims.Law
asbestosclaims.law/library/21943/3