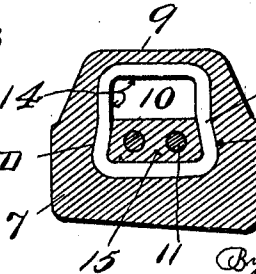
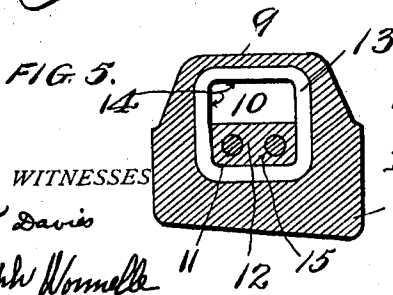
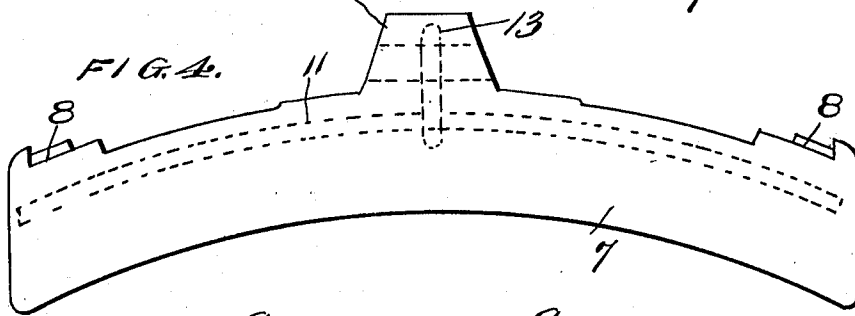
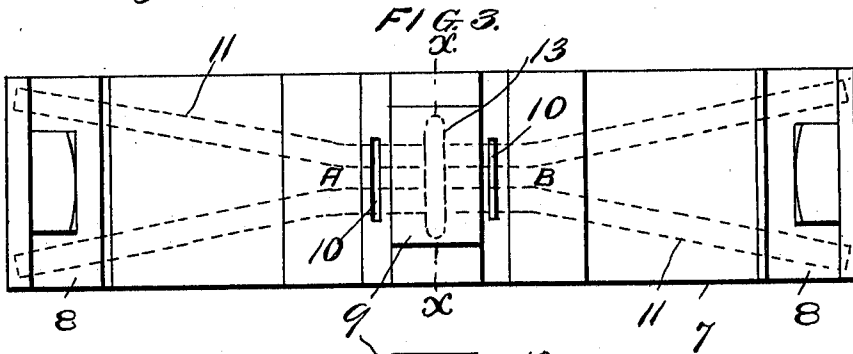
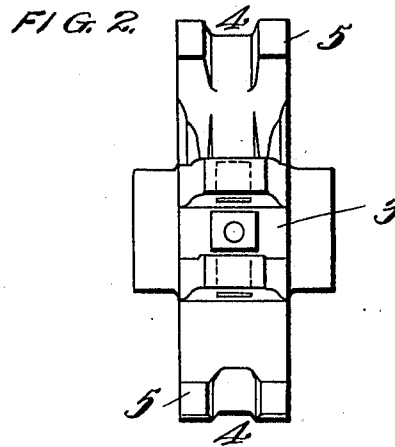
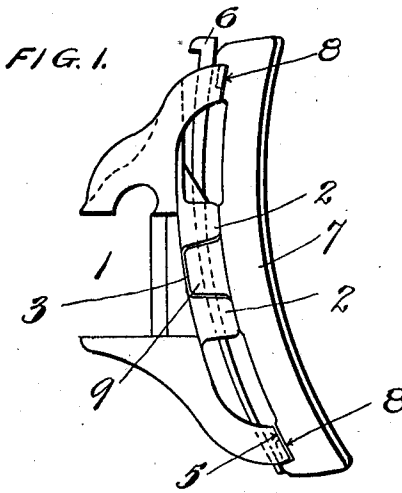


C. H. SMITH.
BRAKE SHOE.
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1,004,596.

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BRAKE-SHOE.

1,004,596.

Specification of Letters Patent.

Patented Oct. 3, 1911.

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To all whom it may concern:

Be it known that I, CHARLES H. SMITH, a citizen of the United States, residing at Clifton Forge, in the county of Alleghany and State of Virginia, have invented certain new and useful Improvements in Brake-Shoes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to brake shoes wherein the body of the shoe and the boss, which fits a seat in the brake block or head, are reinforced by inserts of wrought or other suitable metal which is less liable to crack or break than cast metal, the object being the provision of a shoe of this general type wherein the inserts shall be so located as to more effectively take the strains and prevent the cracking or breaking of the cast metal.

With this end in view my invention consists in constructing a shoe having two longitudinal inserts therein with their ends located directly beneath the bearing surfaces of the forked ends of the brake block, their middle portions slightly spaced apart and located directly beneath the central key boss of the shoe and the boss itself strengthened by a ring of wrought metal extending around the opening through the boss with its lower portion embedded in the cast metal below and out of contact with the metal of the longitudinal inserts.

The accompanying drawing illustrates the physical embodiment of the invention constructed according to the best method of procedure I have so far devised for the purpose.

Figure 1 is a side view of a brake block or head with my improved shoe attached thereto by a key. Fig. 2 is a bottom plan view of the block. Fig. 3 is an enlarged top plan view of the shoe. Fig. 4 is a side view of Fig. 3. Fig. 5 is a section of Fig. 3 on line *x-x*. Fig. 6 is a cross section of a slightly modified form of the boss insert.

Referring to the figures, the numeral 1 designates the brake block or head; 2, the perforated bosses to receive the key; 3, the recess to receive the boss on the shoe; 4, the forked ends of the brake block; 5, the bearing surfaces which engage the ends of the shoe directly above the ends of the inserts in the shoe; 6, the key; 7, the shoe;

8, the bearing surfaces for the ends of the brake block; 9, the central boss of the shoe; 10, the opening through the boss for the passage of the key; 11, 11 the two inserts of wrought metal, their central portions being located in a plane directly below the boss and spaced apart and out of contact each with the other so there will be a web of cast metal between them extending from A to B, from which said points they diverge and end beneath the bearing surfaces 8, 8 for the ends of the brake block; and 13 is the wrought metal ring or boss insert, the edge 14 thereof bounding the top and sides of the opening through the boss and the lower part embedded in the cast metal outside of and some distance below the two longitudinal inserts so there will be a body of cast metal 15 between the lower portion of the ring and the longitudinal inserts. As shown in Fig. 6 the opening through the lower part of the ring may be larger than at the top so the sides at D and E will lie in planes oblique to the vertical plane of the body of the shoe, thus providing an additional resistance to the withdrawal of the insert.

In service the key frictionally engages the insert in the boss and holds the shoe in position relative to the brake block. Excessive outward strains upon the boss insert are first transmitted to the metal 15 below the longitudinal inserts, then from this metal to the web 12 and the longitudinal inserts from A to B, and finally to the metal above the longitudinal inserts, the resistance of these several parts combined being sufficient to prevent the withdrawal of the boss insert and the cracking or breaking of the metal adjacent the boss.

When the boss insert is a continuation of the longitudinal inserts, or a projecting loop of the same, strains imparted to the loop are transmitted directly to the longitudinal members or inserts at points, and are not dispersed over extended areas as in my construction and arrangement of parts, and consequently the cast metal cracks or breaks. Moreover, the ends of the longitudinal inserts with my construction diverge and end directly beneath the bearing surfaces of the ends of the brake block effectively stiffening the shoe from these points to the center of the shoe. The metal of the boss obviously surrounds the boss insert and fills the space 3 between the bosses 2, 2 of the brake block

and serves to confine the shoe in its proper position relative to the block.

What I claim is:

1. A brake shoe comprising a cast metal
5 body having embedded therein two longitudinal inserts located side by side and spaced apart beneath the boss, to provide a web of cast metal between them, and with their ends diverging and ending adjacent the ends
10 of the shoe, and said shoe also having a separate boss insert surrounding the opening in the boss and its lower portion outside the longitudinal inserts and below them so there will be provided a mass of cast metal be-
15 tween the said lower portion of the boss insert and the longitudinal inserts.

2. A brake shoe comprising a cast metal body portion having embedded therein a

plurality of longitudinal inserts spaced apart and extending from end to end of the shoe, and a separate boss insert with its top portion surrounding the inner surface of the opening in the boss and its lower portion embedded in the metal outside the longitudinal inserts, and out of contact with and below the same, whereby a web of cast metal is provided between the longitudinal inserts and a mass of metal between the boss insert and the longitudinal inserts.

In testimony whereof I affix my signature, in the presence of two witnesses.

CHARLES H. SMITH.

Witnesses:

B. C. GOODWIN,
L. H. BUNCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."