

No. 715,341.

Patented Dec. 9, 1902.

W. O. BELT.
BRAKE SHOE.

(Application filed May 26, 1902.)

(No Model.)

Fig. 1.

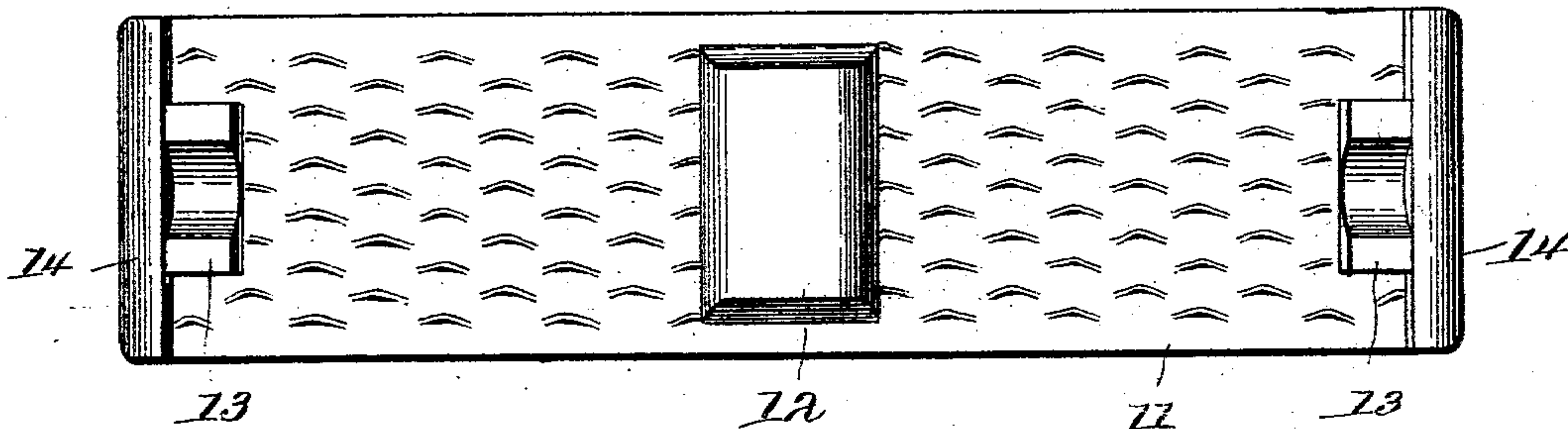


Fig. 2.

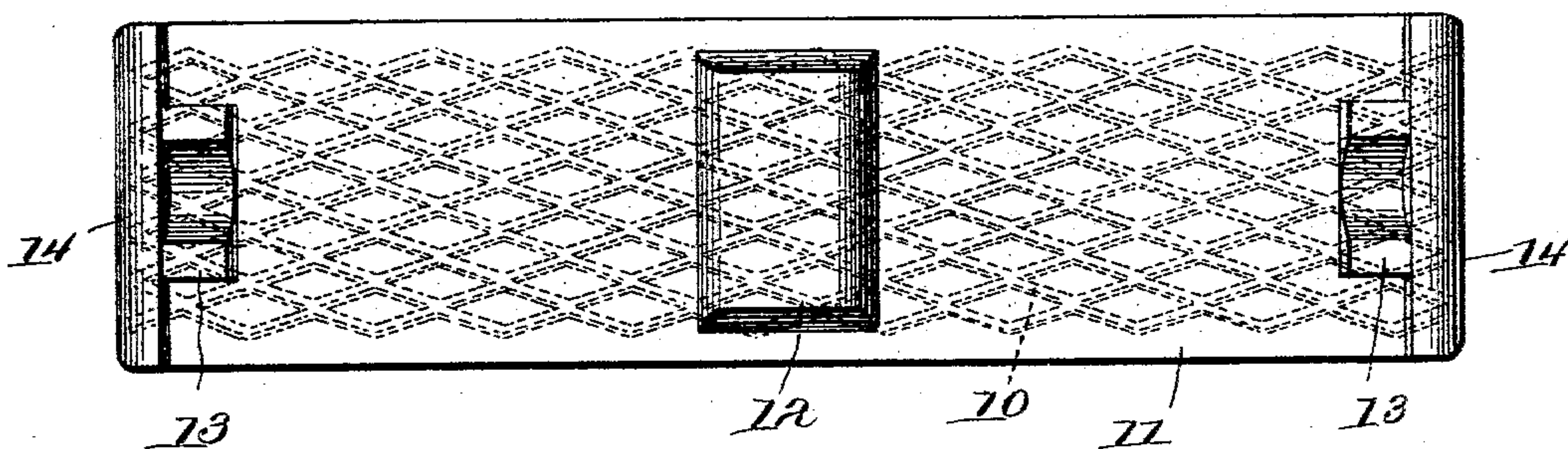


Fig. 3.

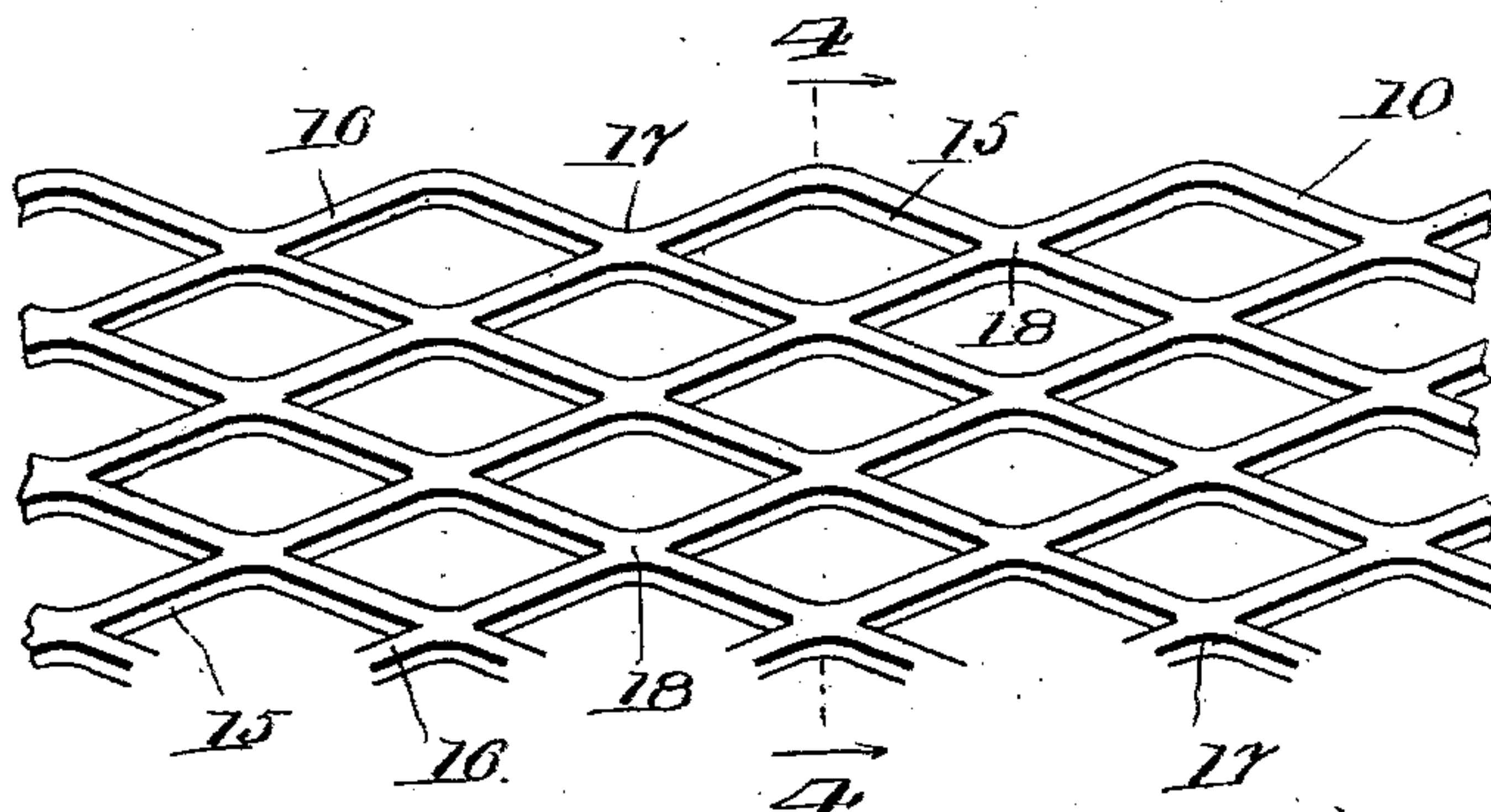
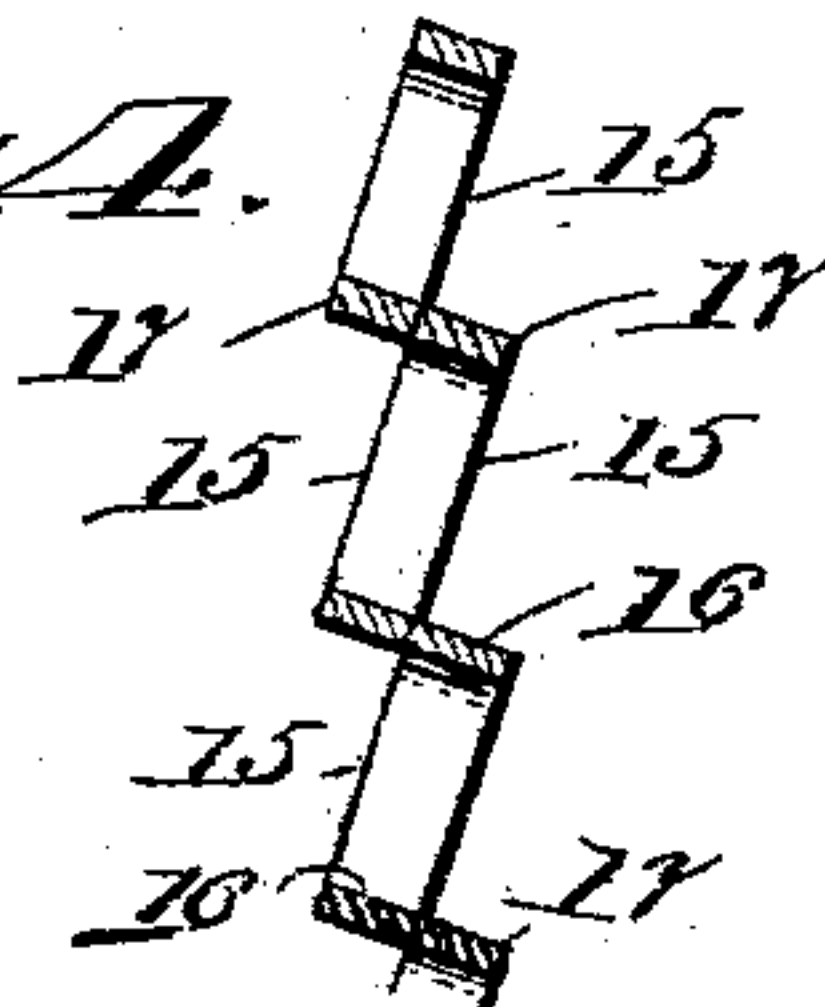


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM O. BELT, OF CHICAGO, ILLINOIS.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 715,341, dated December 9, 1902.

Application filed May 26, 1902. Serial No. 109,009. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM O. BELT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

My invention relates to improvements in brake-shoes, and it can be embodied in a great variety of shoes, including those which are intended to dress the wheel as well as those which do not.

The primary object of the invention is to strengthen the shoe to prevent it from breaking, especially when worn thin, and thereby prolong the life of the shoe and eliminate the danger which is always imminent from broken shoes.

A further object of the invention is to provide strengthening means of novel character which become united and incorporated with the body of the shoe in the course of manufacture and forms a network binding the body together into a homogeneous unit without adding materially to the cost of manufacture.

In the accompanying drawings, Figure 1 illustrates in a somewhat conventional way the back of a shoe embodying my invention. Fig. 2 is a similar view showing the entire strengthening-strip in broken lines. Fig. 3 is an enlarged view of a section of expanded metal. Fig. 4 is an enlarged sectional view on the line 4 4 of Fig. 3.

By reference to the drawings it will be readily understood that my invention contemplates the use of a strip of expanded metal 10, located at or adjacent to the back of the body 11 of the shoe and sufficiently united with the body to form a binder which will hold the body together and also strengthen the shoe. I may employ ordinary commercial expanded metal of suitable weight and mesh, and a strip of suitable size is arranged in the mold and the body metal cast thereon. The strengthening-strip is preferably arranged beneath the attaching-lug 12 and extended beneath the brake-beam guides 13 into the end lugs 14, as indicated in Figs. 1 and 2. The strengthening-strip is preferably embedded to a more or less extent in the back face of the body of the shoe; but it is only

necessary that the strip should be embedded sufficiently to thoroughly unite the strip and body together, and this is effected more completely and satisfactorily with expanded metal than any other form of strengthening-plate heretofore employed, so far as I am aware, because the peculiar shape and angular character of the expanded metal enables the body metal to become locked and united therewith in an inseparable manner throughout the extent of the shoe. In making expanded metal out of plates in the usual way the severed edges 15 are brought uppermost and the flat faces 16, which formerly constituted the two faces of the plate, are tilted in an angular position, as shown in Fig. 4, so that the thickness of the expanded metal will be determined by the planes of the corners 17 at the joints 18. The expanded metal therefore constitutes a strengthening-strip in and through which the body metal will readily run and bind itself together with the strip by flowing in and around some or all of the angular parts of the strip, so that a perfect union will be effected. In practice it has been found that the corners 17 may be exposed and lie considerably above the plane of the back of the shoe, and yet the strip will be inseparably united with the body, and it is not necessary that the strip should be wholly or principally concealed by the body metal. It will be observed also that my invention presents important advantages over those strengthening-plates of the prior art which are simply provided with perforations to permit the body metal to flow therethrough and hold the plate between the body metal on both sides thereof, for in such constructions the plate is not completely united with the body throughout its area, but only at points more or less distant from each other, and there is constant liability of the plate becoming loosened from the body between these points of attachment, and by constant vibration and working in service the tendency will be to promote fracture of the shoe rather than prevent it. This objection is entirely overcome with my invention, because the strengthening-strip is a network of reversely-bent and substantially rectangular strands tilted in an angular position and connected at their corners, which enables the

body metal to flow therein and therethrough in angular and clenching engagement therewith, and so become thoroughly united and bound together with the strip throughout its entire area. I also avoid the necessity of dividing the body into two parts by the interposition of a strengthening-plate at or adjacent to the back thereof, which is objectionable because of the liability of the thin part of the body, which lies back of the plate, becoming broken in service, whereas in my construction the body and strengthening-strip are inseparably united and there is no division of the body nor does the strengthening-strip furnish any extended flat surfaces from which the body may become loosened.

A brake-shoe embodying my invention may be worn to a degree of thinness considerably beyond the standard adopted by railroads as determining when the shoe shall be removed, and the strip so effectively strengthens the body and is so thoroughly united therewith that the shoe will not become fractured in service or if fractured in some way the parts will be held together and prevented from falling on the track.

It is apparent that I may employ different kinds of expanded metal, both as to the mesh and the weight thereof, as occasion may require, and to accommodate the invention to various circumstances, and it is also clear that the strip may be arranged at or adjacent

to the back of the shoe in other ways than that herein described without departing from the invention, and I reserve the right to make all such changes as fairly fall within the spirit and scope of the invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A brake-shoe having an expanded metal strengthening-strip at or adjacent to the back face thereof.

2. A brake-shoe having an expanded metal strengthening-strip embedded therein at or adjacent to its back face.

3. A brake-shoe having, at or adjacent to its back face, a metallic strengthening-strip consisting of strands angularly arranged and reversely bent and connected at intervals.

4. A brake-shoe having, at or adjacent to its back face, a metallic strengthening-strip consisting of substantially rectangular strands reversely bent and connected at intervals.

5. A brake-shoe having, at or adjacent to its back face, an integral metallic strengthening-strip consisting of a network of reversely-bent strands tilted in an angular position and connected at their corners.

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Witnesses:

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