

(No Model.)

J. W. DOTSON.

GRIP SHOE.

No. 424,644.

Patented Apr. 1, 1890.

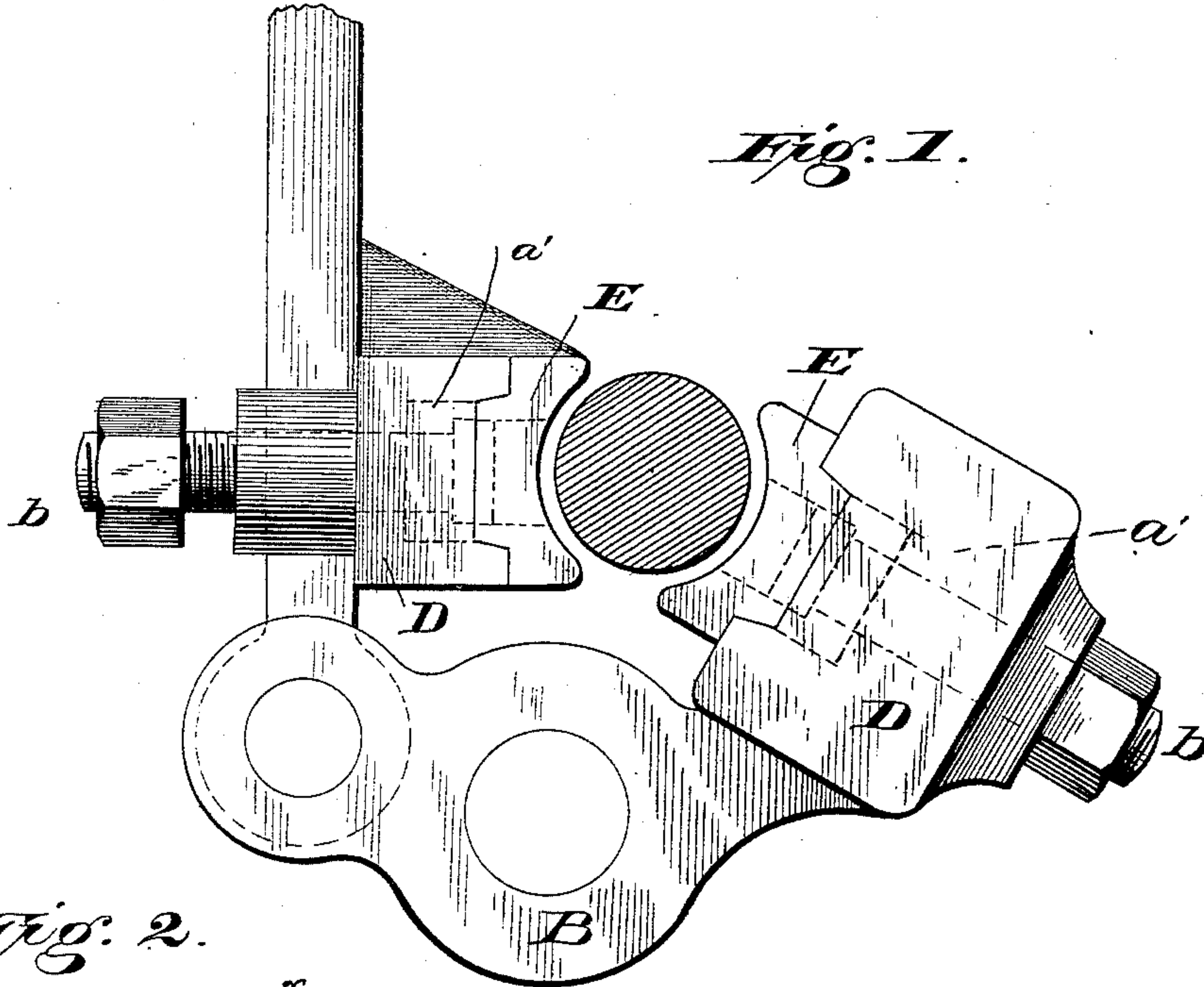


Fig. 2.

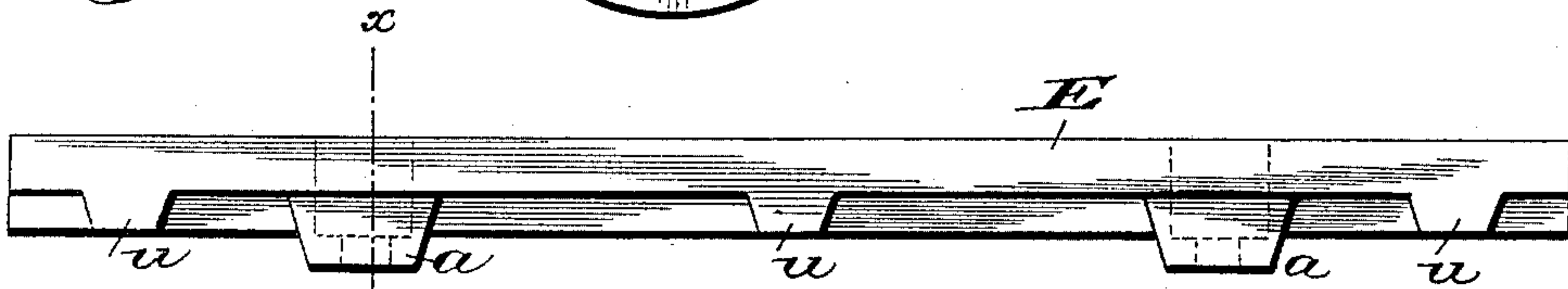


Fig. 3.

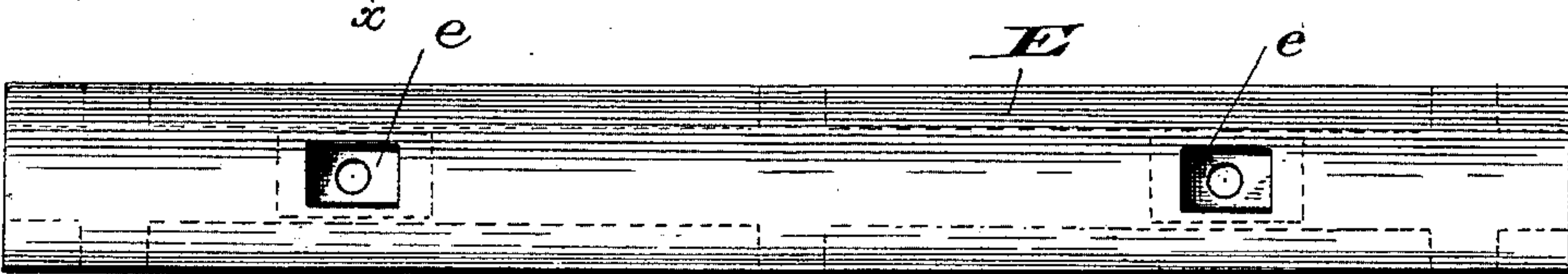
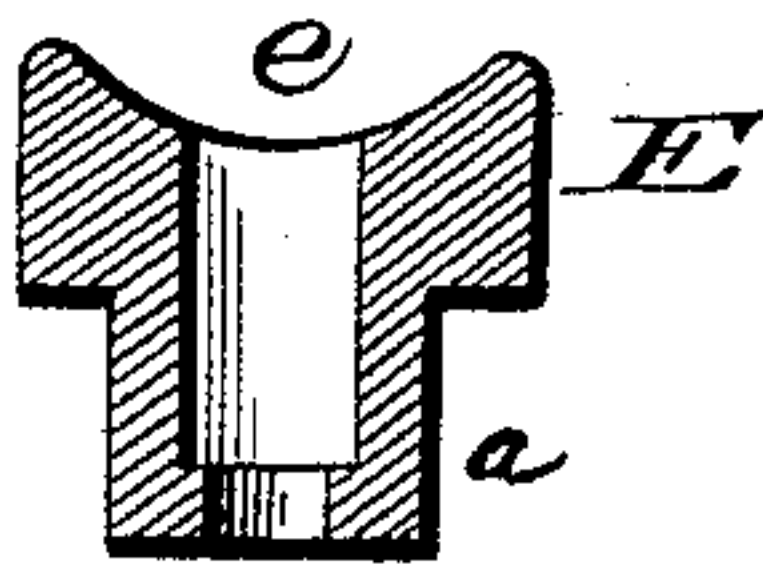


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN W. DOTSON, OF CHICAGO, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO
JOHN M. ROACH AND O. H. BURBRIDGE, BOTH OF SAME PLACE.

GRIP-SHOE.

SPECIFICATION forming part of Letters Patent No. 424,644, dated April 1, 1890.

Application filed December 10, 1889. Serial No. 333,253. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. DOTSON, 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 Grip-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 an improvement in the shoes of grips for cars which are moved by cables; and my improvement is especially designed to prevent the rapid wear of the shoes and to afford a new and improved article of manufacture which is adapted to grip the cable without causing undue abrasion, and which will quickly bite the rope with the least amount of friction. It is well known that metallic or glass-faced grip-shoes are not well adapted for the purpose, for the reason that they rapidly heat and impair the cable.

I am aware that grip-shoes have been devised composed of a "vulcanite" compound. It is obvious that any compound which is liable to heat unduly by friction should not be employed as a gripper for a cable in motion.

My object is, mainly, to employ condensed paper-pulp in the manufacture of cable-grip shoes, the pulp being condensed under hydrostatic or great pressure.

Another object of my invention is to produce a solid paper grip-shoe which is complete in itself, and which is so condensed and hardened that it approaches the density and hardness of steel, and which at the same time retains to an extent its fibrous nature, and which, when brought in contact with a rapidly-moving cable, is peculiarly adapted for the work designed.

I attain the objects above described by means illustrated in the annexed drawings, in which—

Figure 1 is a cross-section of the cable C and a vertical end view A B D of such parts of a well-known form of grip as are necessary to show one practical mode of applying my invention. Fig. 2 is a longitudinal side view of my improved paper grip-shoe E. Fig. 3 is a face or top view of the same. Fig. 4 is a cross-section taken in the plane indicated by the

dotted line *x x*, Fig. 2, detached from the jaw of the grip.

In carrying my invention into effect I employ paper-pulp, and I may mix with this pulp any of the well-known ingredients used in the manufacture of paper car-wheels, &c.—such, for instance, as a cement of glue. I do not, however, confine myself to a compound of any of the well-known cementing substances with the paper-pulp, as the use of these cementing ingredients may be optional. I take the paper-pulp suitably prepared, substantially as above described, and mold it in the proper form, preferably in the form shown in Figs. 2, 3, and 4. While in the mold I subject the pulp to great hydrostatic or other pressure, and so condense and compact it that when turned out of the mold it is finished and in the shape designed for a cable-grip shoe.

It will be observed from the foregoing description of my invention that the paper grip-shoe prepared as above described is a solid casting adapted to fit the jaw of a cable-grip.

My paper grip-shoe E is provided with projections *a*, which enter pockets *a'* in a jaw D of a grip, (shown in dotted lines, Fig. 1,) and recesses in said projections, through which the bolts *b* pass to secure the paper shoe E to the jaw of the grip D. I employ as additional security against end-thrust lugs *u* on the paper shoe, as shown in Fig. 2, and so construct the grip jaw or holder with recesses adapted to receive the lugs. It will be observed by reference to Figs. 2 and 3 that I form pockets *e*, extending into the projections *a a* of the shoe, adapted to receive the heads of the securing-bolts *b*, and that the bottoms of the pockets are perforated for the shank of the bolt.

While I have above described one practical mode of carrying my invention into effect, I do not confine myself nor specifically claim this mode, as it is obvious that my invention is susceptible of numerous applications.

It will be observed from the foregoing, first, that I do not mold or cast my improved paper-pulp cable-grip shoe into the jaw of a grip. This is impracticable, for the reason that the paper-pulp must be condensed under hydrostatic pressure in order to fit it for the object required. My shoe is therefore prepared for

use in a separate mold, and when removed from such mold it is finished. It is therefore not merely a packing or loose stuffing, but a solid substantial body adapted to be fitted into the jaw of a grip or shoe holder and to be rigidly secured therein, as I have above described. Second, my cable-grip condensed-paper shoe is constructed with side lugs for the purpose of positively keying it in its shoe, and thus aiding the bolts in holding it to the shoe-holder by resisting the longitudinal strain, especially at the moment of gripping the moving cable. Finally, it will be observed that by combining in a single condensed-paper grip-shoe of the form substantially as described the bottom lugs *a* and the side lugs *u* a most substantial and solid union between the said shoe and its holder is secured.

I am aware, broadly speaking, that paper, soft and hard metal, and other substances have

been essayed for contacting frictional grips for cable railways. Such devices or material I disclaim.

Having thus described my invention, I claim—

The within-described improved article of manufacture, consisting of a longitudinally-straight cable-grip shoe of condensed paper-pulp complete in itself, having a laterally-concave wearing-surface and one or more back lugs *a*, in combination with side lugs *u*, whose end surfaces are flush with the sides of the shoe-holder, all as specified.

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

JOHN W. DOTSON.

Witnesses:

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E. C. RANDOLPH.