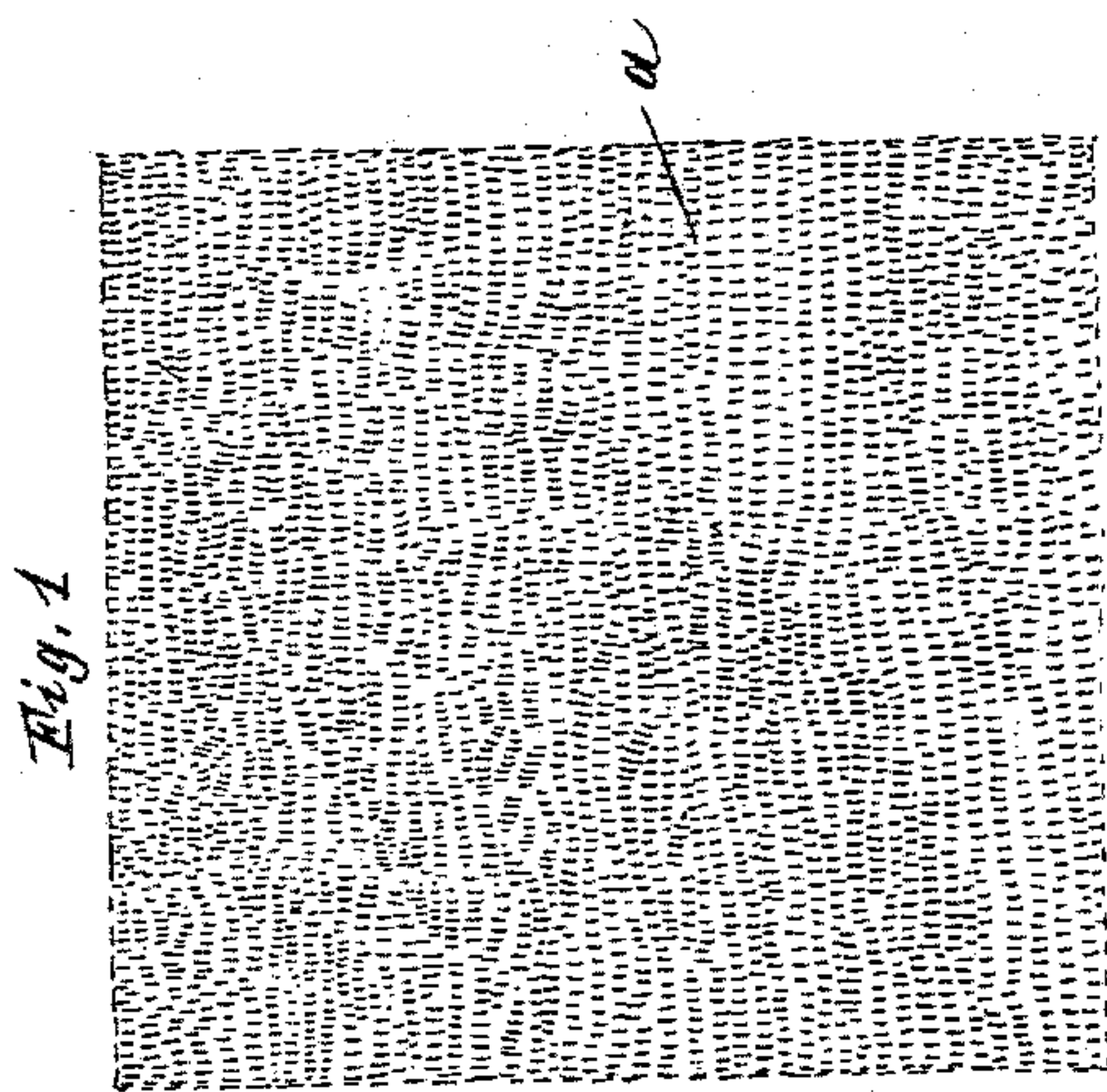
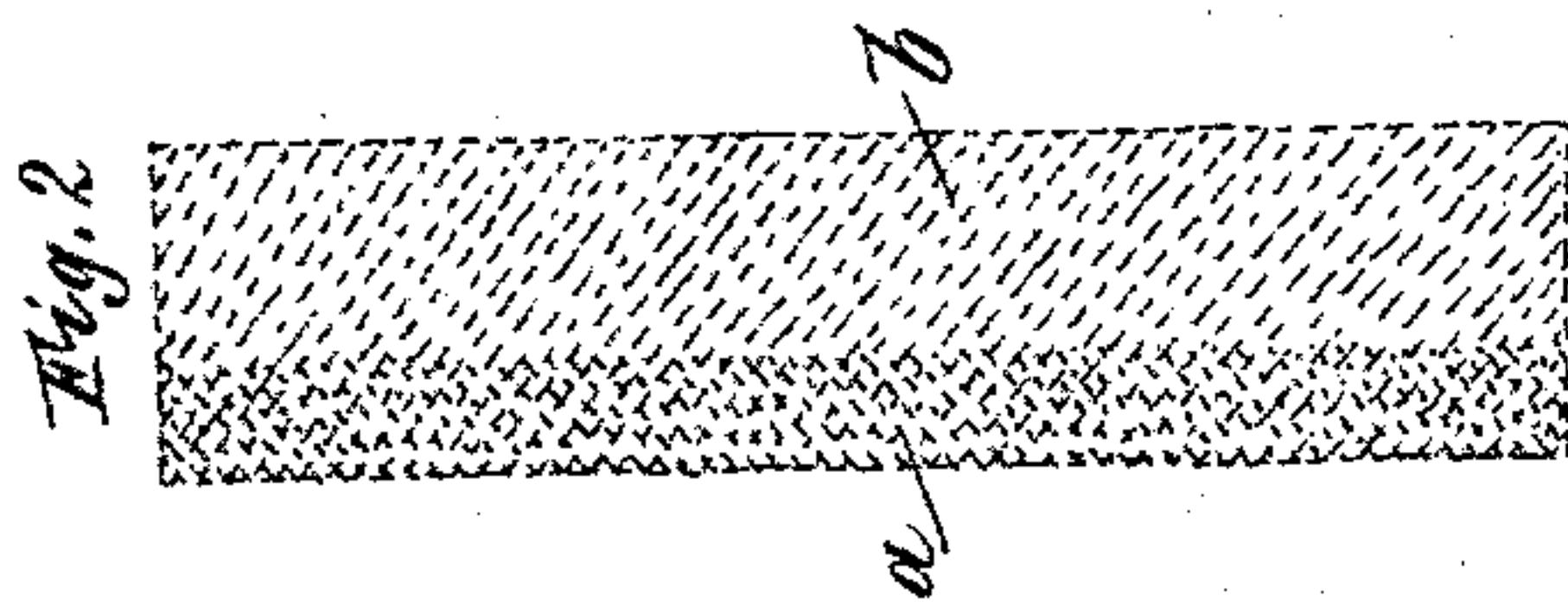
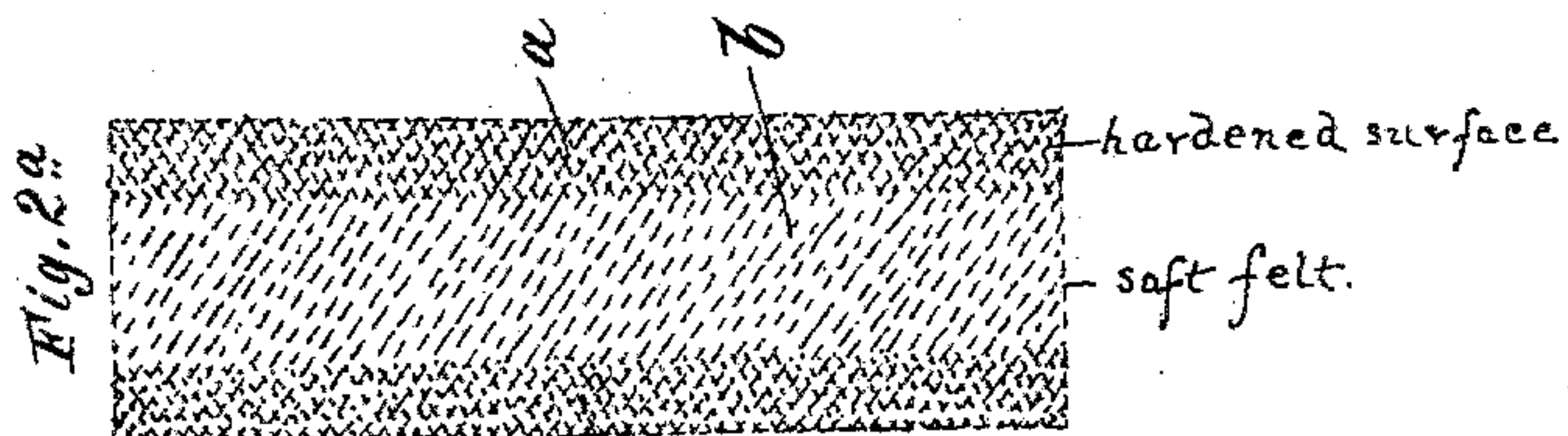


(No Model.)

P. KNOCH.
ELASTIC BED PLATE.

No. 571,618.

Patented Nov. 17, 1896.



WITNESSES.

Charles Thorpe

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INVENTOR:

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BY

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UNITED STATES PATENT OFFICE.

PAUL KNOCH, OF ADLERSHOF, GERMANY, ASSIGNOR TO HEINRICH PHILLIPP
KNOCH, OF SAME PLACE.

ELASTIC BED-PLATE.

SPECIFICATION forming part of Letters Patent No. 571,618, dated November 17, 1896.

Application filed September 6, 1895. Serial No. 562,018. (No model.)

To all whom it may concern:

Be it known that I, PAUL KNOCH, of Adlershof, near Berlin, Germany, have invented a new and Improved Elastic Bed-Plate, of which the following is a full, clear, and exact description.

My invention relates to elastic supporting-plates for railway-rails, and has for its object to increase the strength and durability of such plates.

Hitherto there have been employed felt supporting-plates, impregnated uniformly throughout, and their upper surface on which the rail rests therefore is just as yielding as the remainder of the supporting-plate. Since in order to be elastic the felt supporting-plate must be soft, the rail is not securely supported unless an additional iron plate is interposed, and very often the edges of the rail's base will cut into the felt supporting-plate, thereby rendering it useless and necessitating the substitution of a new one. My present invention obviates this defect; and it consists in a supporting-plate made of felt or similar yielding material, but prepared in a particular manner at its upper surface, so that an upper layer of suitable thickness will be hard enough to support the rail without any danger of the plate being cut by the rail's edges.

Reference is had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all of the views.

Figure 1 is a plan view of a bed-plate constructed after the manner of my invention. Fig. 2 is an edge view, and Fig. 2^a is an edge view of a modification.

The felt is provided with a hardened surface or portion *a* and with an elastic portion *b*, the hardened surface being on one side, and in practice this side is arranged upward.

Fig. 2^a shows each side of the felt provided with a hardened surface *a* and with the elastic portion *b* sandwiched between the two.

With reference to this invention it will be seen that the weight of the rail and of cars passing thereover is evenly distributed on the whole surface of the felt support, instead of

being confined to that part of it which is actually in contact with the rail. This particularity further reduces the danger of injury to the plate.

The new elastic supporting-plate may be safely used without an interposed iron plate, as such an additional hard plate is not necessary to protect the upper surface of the felt, which is sufficiently hardened by impregnating it with suitable substances or solutions.

While many compounds may be used to produce the superficial hardening above referred to, I have found that a very efficient protection is afforded to the supporting-plate by the following described process: The felt having first been treated in its entire body to increase its durability throughout, it is coated with a layer of glue, which is allowed to penetrate to a depth of about four millimeters, and this layer is then impregnated with chrome-alum, bichromate of potash, soda, formalin, or the like, and allowed to dry. Another method consists in employing a solution of india-rubber for impregnating the plate, and then vulcanizing the rubber; or the upper layer of the plate may be impregnated with a resinous solution.

It will be understood that when there is any danger of the under side of the plate being injured by great pressure the impregnation is effected on both sides, the central portion, however, remaining soft, so that the plate is still yielding enough to serve as an elastic supporting-plate. This is shown in Fig. 2^a, as before described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A supporting-plate consisting of a yielding absorbent material having a surface impregnated with a hardening substance, the hardened substance extending partly into the plate and leaving the remainder of the plate in its original yielding form, substantially as described.

2. A supporting-plate formed of yielding material having one surface impregnated with a hardened substance, the hardening sub-

stance extending partly into the plate and leaving the remainder of the plate in its original yielding form, substantially as described.

3. A method of forming supporting-plates, the method consisting in first impregnating a yielding plate with a solution of india-rubber, the solution being permitted to extend partly into the plate and second in vulcanizing the solution of india-rubber so as to form a har-

dened surface for the plate and so as to leave the remainder of the plate in its original yielding form, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

PAUL KNOCH.

Witnesses:

OTTO HABERMEHL,

WILHELM SCHWISTHAL.