

(No Model.)

J. A. MERRILL.
RAILWAY TRACK.

No. 283,632.

Patented Aug. 21, 1883.

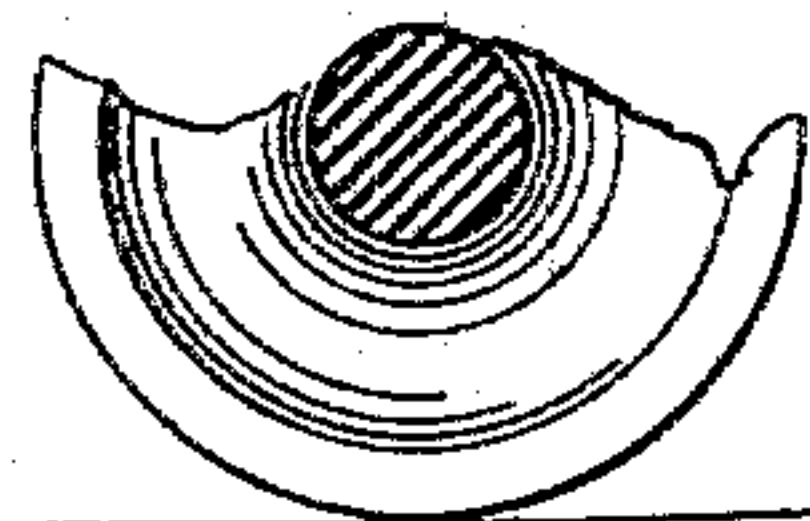


Fig. 1.

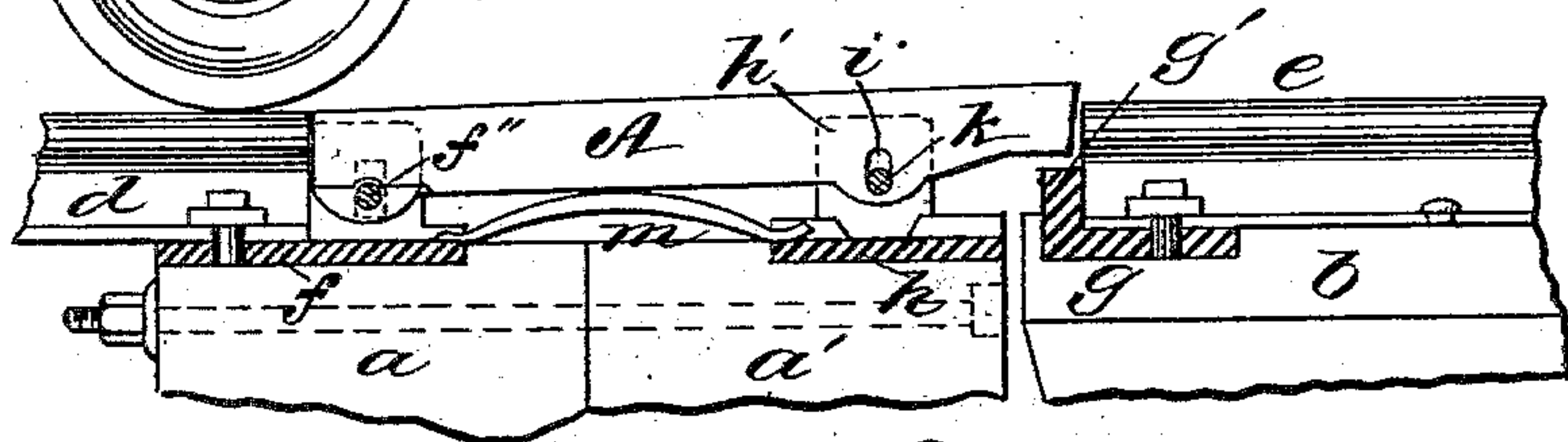


Fig. 2.

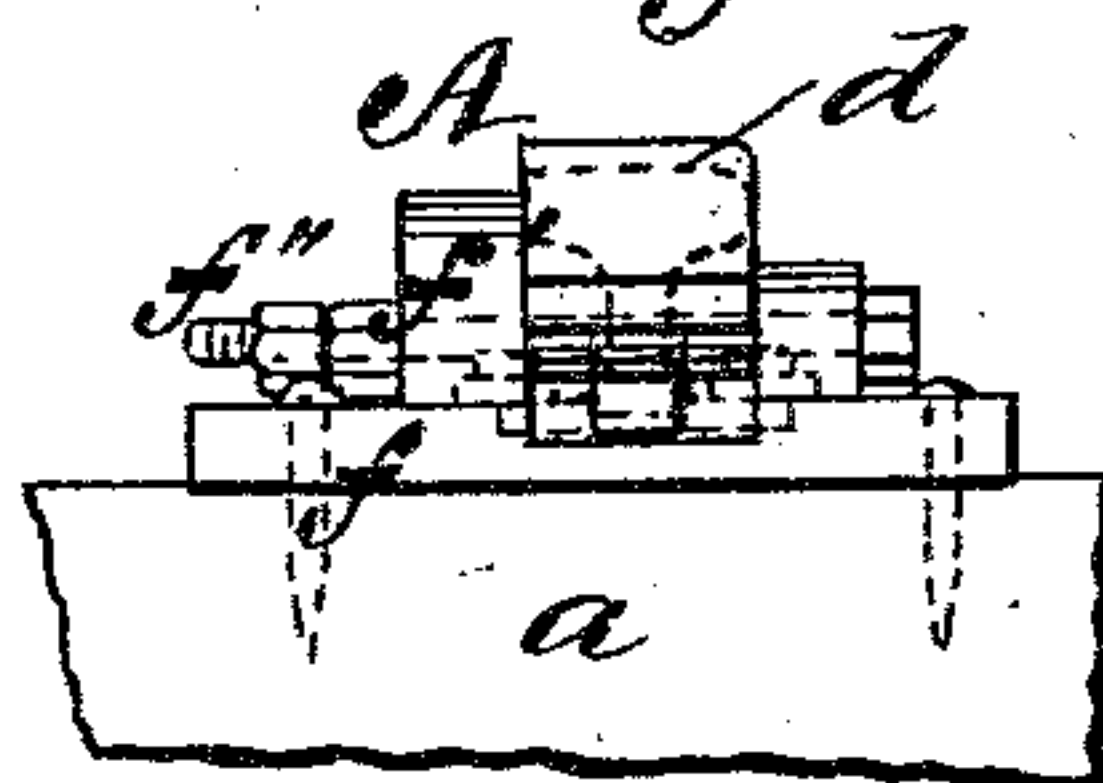


Fig. 3.

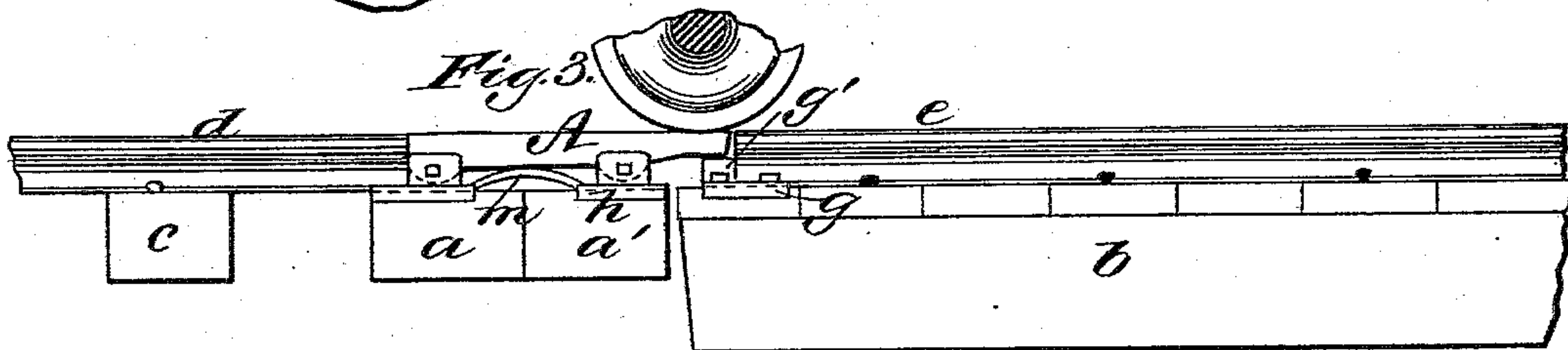
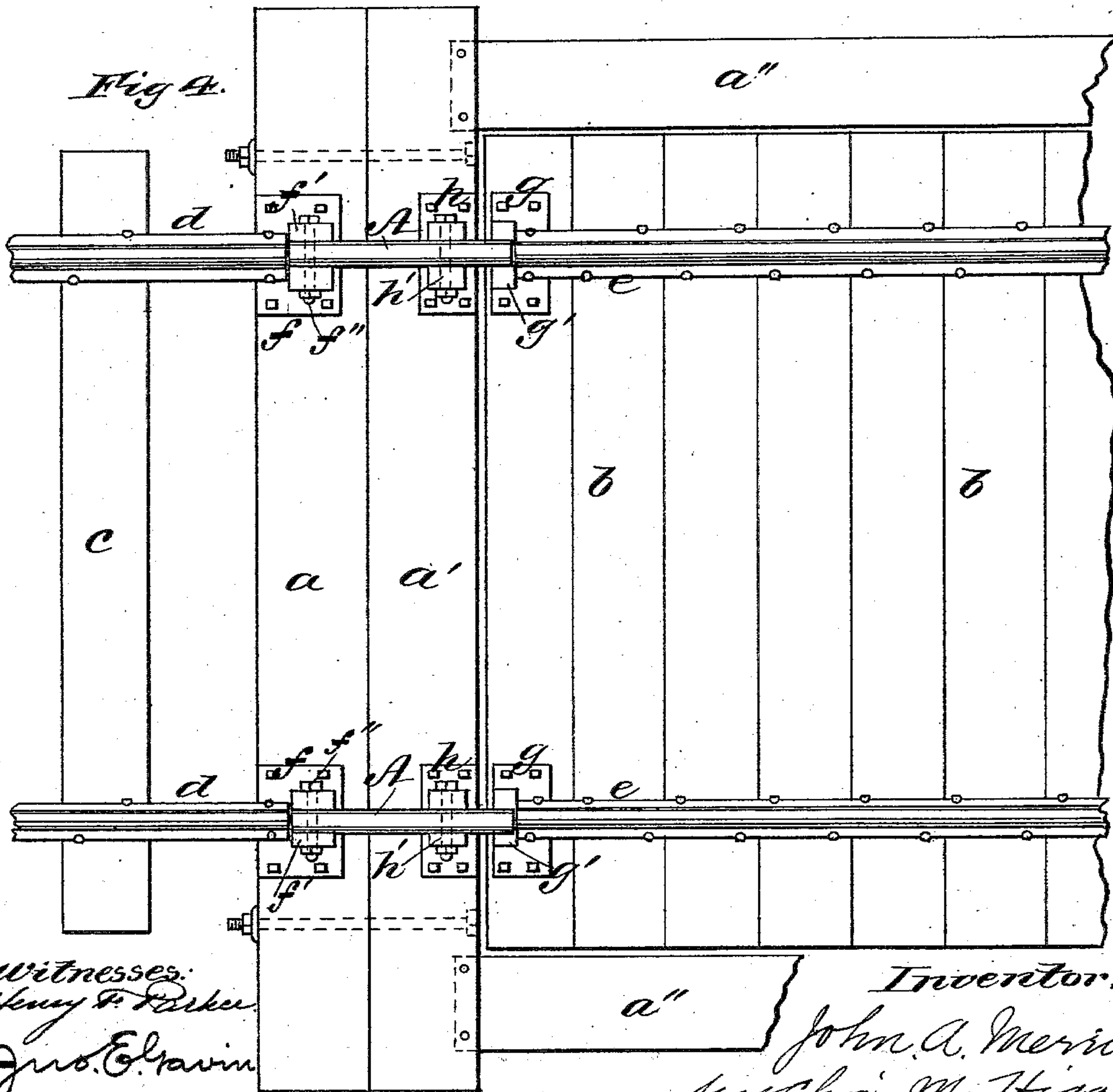


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN A. MERRILL, OF POTTSTOWN, PENNSYLVANIA, ASSIGNOR TO E. & T. FAIRBANKS & CO., OF ST. JOHNSBURY, VERMONT.

RAILWAY-TRACK.

SPECIFICATION forming part of Letters Patent No. 283,632, dated August 21, 1883.

Application filed April 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. MERRILL, of Pottstown, in the county of Montgomery and State of Pennsylvania, have invented certain
5 new and useful Improvements in Railway-Tracks, of which the following is a specification.

My invention relates to the rails of the railway on which the wheels roll, and is applied
10 at the meeting ends of rails at such situations as draw-bridges, turn-tables, railway-scales, &c., where the fixed rails of the permanent road-bed meet with the continuing rails on the
15 movable or yielding platform of the scales or other movable structure. In such situations it will be understood that there always exists some slight difference of level between the ends of the meeting rails, the rails on the platform being
20 usually one-half or three-fourths of an inch lower than the rails on the road-bed. Consequently when the wheels of the locomotive and cars roll from the end of one rail onto the end of the other they fall abruptly a slight
25 distance and roll onto the platform with a heavy jolt or shock, and in going off the platform the reverse action will be produced, each wheel striking the end of the higher or projecting rail a forcible blow, and thence jumping
30 up upon the same and rolling onward thereon. This action is of course very objectionable, as it strains the rolling-stock, batters and rapidly wears the ends of the rails, and imparts heavy intermittent shocks upon the platform, which tends to strain and injure
35 the same, particularly in the case of a platform-scale, in which the pivots which directly underlie the corners of the platform below the ends of the rails are frequently worn or damaged, and the action of the scales seriously
40 deranged in this way.

Now, according to my invention, I introduce between the ends of the rails on the road-bed and the ends of the rails on the platform
45 a short movable or yielding section of rail, which I term "buffer-rails." One end of these buffer-rails is fixed or hinged close up to the end of the road-rails and level therewith, while the other end is free and projects over a seat or anvil-block on the platform, adjoining the
50 end of the platform-rails. The free end of

each buffer-rail is normally raised by a spring or its equivalent, so as to assume a slight upward inclination, with the hinged end flush with the road-rails, while the free end is raised
off the seat-block and above the ends of the
55 platform-rails. The construction is therefore such that when the wheels of the locomotives and cars advance along the road-rails they will roll smoothly onto the buffer-rails, which
60 will thereby become gradually depressed, so as to bring their free ends down gently upon the seat-block of the platform and flush with the platform-rails, so that not only is the tread of the rails on the roadway thus brought
65 coincident with the tread of the rails on the platform, and all inequality of level thus overcome, but the weight of the wheels is at the same time gradually applied on the platform, so that the wheels are thus enabled to roll on
70 or off the yielding platform in a smooth and easy manner, which completely obviates the objections noted.

My invention therefore consists, broadly, in the yielding or buffer rails, as above outlined, and also in certain details of construction, as hereinafter fully set forth. 75

In the drawings annexed I have shown my invention applied to the rails at a railroad platform-scales, and the other applications will be obvious as being substantially the same, 80 and hence need no particular illustration.

Figure 1 presents a fragmentary side elevation, partly in section, illustrating my buffer-rail applied between the end of the road-rails and the platform-rails, with a car-wheel shown
85 in the act of rolling from the road-rails onto the buffer-rails. Fig. 2 is an end elevation of the buffer-rail and its hinging chair or base. Fig. 3 is a side elevation similar to Fig. 1, but on a smaller scale, and showing the car-wheel
90 on the buffer-rail, having pressed the same down flush with the platform-rail, and on the point of rolling thereon. Fig. 4 is a plan view of a portion of the track and of the scale-platform with the rails arranged according to my
95 invention.

In the drawings, *a a'* indicate the heavy timbers framing the platform-pit.

b indicates the platform of the scale, and *c* indicates the ties of the road-track. 100

d indicates the road-rails; e , the rails of the platform, and A the novel buffer-rails introduced between the meeting ends thereof.

Now, the ends of the road-rails d rest upon
5 and are bolted to a strong metal chair, f , which is spiked or bolted to the timber a , as illustrated, and in a similar manner the ends of the platform-rails rest upon and are bolted to a chair, g , which is bolted on the end of the plat-
10 form. The chairs f of the road-rails are formed with a pair of strong ears, f' , between which the end of the buffer-rails A is introduced, and there strongly hinged or pivoted on a strong bolt, f'' , which passes through the same, as
15 illustrated, the tread of the buffer-rail at this end being flush with the tread of the road-rail, as shown best in Figs. 1 and 3. The chairs g of the platform-rails are placed close to the edge of the platform, and are each formed with
20 an upwardly-projecting seat or anvil-block, g' , against which the rail end abuts, and which rises up before the end of the rail to about the top of the web thereof, as shown in Figs. 1 and 3.

25 Now, h indicate a third pair of chairs, which are bolted to the timber a' , close to the edge of the platform-pit, and are formed with ears h' , similar to the chairs f , between which the free end of the buffer-rails A loosely fits,
30 and thence projects over the edge of the platform-pit and overlies the seat-block g' of the platform-chair, and closely approaches the end of the platform-rails, as shown in Figs. 1, 3, and 4. The portion of the buffer-rails em-
35 braced between the ears of the chair g is provided with a short vertical slot, i , in which a fixed bolt, k , which passes through the ears, is engaged.

Each buffer-rail consists of a strong bar of
40 steel or iron, of preferably the shape and dimension shown in the drawings, and by the arrangement described it is thus firmly hinged at one end on the chairs f , flush with the road-rails d , and is guided near the other end be-
45 tween the ears of the chair h , so that the rail is capable of a slight vertical play at its free end, which is limited by the slot and bolt i k , and is at the same time prevented from any lateral play or displacement by the ears of the
50 chair h , as will be understood.

A strong half-elliptic spring, m , underlies each buffer-rail A , both the ends of the spring resting on the chairs f h , while the arched center thereof bears upon the under side of the
55 buffer-rails at or near the middle thereof, as best seen in Fig. 1, thus tending to constantly raise the buffer-rails into a slightly-inclined position, with their free ends raised off the seat-blocks g' and above the tread of the plat-
60 form-rails e , as fully shown in Fig. 1.

It may now be here noted that the thickness or depth of the free end or tip of the buffer-rails is just equal to the distance between the top of the seat-blocks g' and the tread of the
65 platform-rails, so that when the buffer-rails are depressed into contact with the seat-blocks

the tread of the buffer-rails will be flush or coincident with the tread of the platform-rails, as will be understood from the drawings.

The general construction and arrangement being now specified, it will therefore be readily understood by referring to Fig. 1 that when the wheels advance along the road-rails d toward the end thereof they will roll
75 smoothly from thence onto the slightly-inclined buffer-rails A , and the weight of the wheels traveling gradually out on the buffer-rails will thus gradually depress the same against the stress of the springs m , and bring
80 the free end thereof down upon the seat-block g' and flush with the platform-rails. While the wheels are thus rolling out on the buffer-rails the weight thereof is thus being applied or exerted in a gradually-increasing manner
85 upon the platform until the wheels arrive at the ends of the buffer-rails, as seen in Fig. 3, when the full pressure of the wheel will now bear on the platform, and the wheel will thence roll smoothly from the end of the buffer-rail
90 onto the end of the platform-rail, which are at this point brought into coincidence, as shown; hence by this means it is evident that all sudden applications of weight on the platform and all differences of level between
95 the meeting ends of the rails are prevented, and instead of this the weight of the cars is exerted in a gentle gradual manner upon the platform, and all jolting or jumping at the meeting ends of the rail is obviated, thus pro-
100 ducing a smooth and easy travel of the wheels over the joints, which overcomes all the objections before noted, and constitutes an important improvement in the railway-tracks at situations of the kind mentioned, which not
105 only reduces wear of the rails, prevents injury to the structure or mechanism of the platform, but saves the rolling-stock from severe strains and wrenches.

It will be understood that when the wheels
110 roll from the buffer-rails onto the platform-rails the platform may yield or descend a slight distance under the weight of the cars; yet as the buffer-rail will also yield or descend correspondingly with it, the tread of the
115 meeting rails will always be kept in coincidence.

It may also be understood, referring again to Fig. 1, that when the wheels roll off the platform-rails at the opposite end they will
120 come in contact with the projecting end of the buffer-rails, which will be raised above the end of the platform-rails; but as the buffer-rails are quite yielding and supported on the spring m at some distance from the free end, the pro-
125 jecting end of the rail will hence offer very little resistance to the wheel, owing to its great leverage upon the spring, and will therefore make a very gentle contact with the wheel, and be immediately depressed thereby, so that
130 the wheels will hence roll smoothly over the joints in going off the platform, without shock

or jolt, in the same manner as already described when going on the platform.

It is obvious that the special form and manner of hinging or mounting the yielding buffer-rails between the ends of the main rails might be varied in several ways without departing from the principle of the invention; and I do not, of course, confine myself to any of the special details of construction herein described.

Any other kind of spring might be substituted for the spring *m*; or a weight might be so arranged as to serve as its equivalent.

In some cases, instead of using two distinct hinged rails *A*, a broad hinged platform or bridge spanning the track might be used instead, with grooves for the flanges of the wheels to travel in, the construction being otherwise substantially the same as described. This modification would also be well adapted for the large hay-scales on common wagon-roads.

The bolts which hold the ends of the rails *d* and *e* onto their respective chairs engage with nicks in the base of the rails, so as to hold those ends of the rails in a fixed manner close to the ends of the buffer-rails, and thus prevent expansion or contraction from displacing the same at this point.

What I claim is—

1. The combination, with the platform of a scales and with a railway or roadway leading thereon, of the yielding bridging and buffer rails or guides *A*, supported or hinged on the roadway and projecting over the edge of the platform, and adapted to guide the wheels of vehicles over the gap between the roadway and platform and gradually apply the weight of

the vehicle upon the platform, substantially as herein set forth.

2. The combination, with the rails of a railway in situations such as described, of a yielding section or buffer-rail, *A*, introduced between the approaching ends of the main rails, and arranged and operating substantially as and for the purpose herein set forth.

3. The combination, with the main rails *d* and *e* in situations such as described, of the yielding buffer-rail *A*, introduced between them, flush at one end with the rail *d*, and having the opposite end adapted, when depressed, to bear upon a seat at the end of the rail *e*, and thus become flush with said rail, substantially as and for the purpose set forth.

4. The combination, with the appropriate parts of a railway or roadway in situations such as described, and with the scale-platform or equivalent yielding structure *b*, of the seat-block *g'* on said structure, the buffer-rail or guide *A*, hinged at one end on the roadway and projecting at the opposite end over said seat-block, with the spring *m*, or its equivalent, tending constantly to raise the same, substantially as and for the purpose set forth.

5. The combination, with the buffer-rail *A* and the appropriate parts co-operating therewith, of the supporting-chair *f* and guiding-chair *h*, with the spring or its equivalent, substantially as and for the purpose set forth.

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Witnesses:

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