Sept. 16, 1941. H. PÖSENTRUP ET AL 2,256,325

RAIL BRAKE

Filed May 10, 1939

Fig. 1

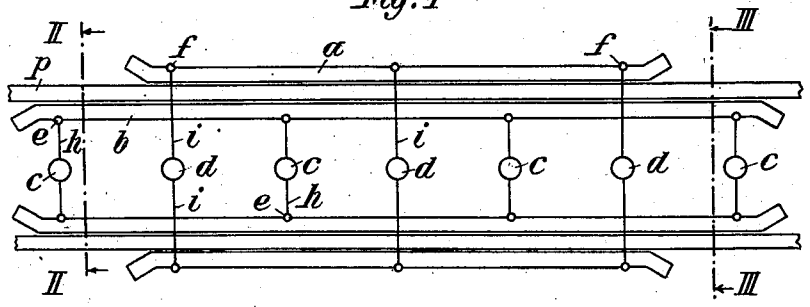


Fig. 2

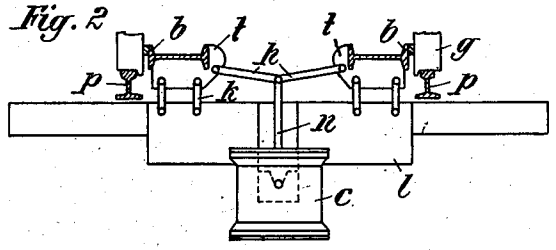


Fig. 3

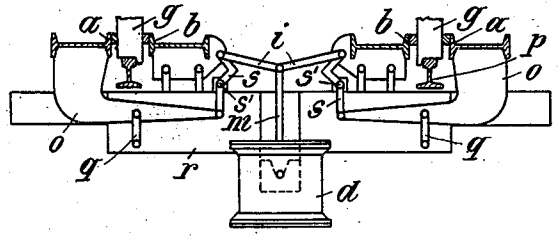
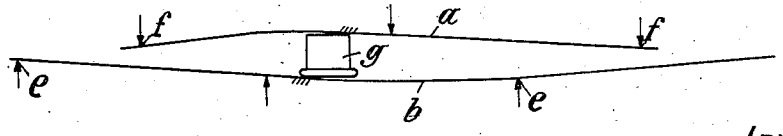


Fig. 4



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2,256,325

RAIL BRAKE

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5 Claims. (Cl. 188—62)

This invention relates to a rail brake and has particular reference to rail brakes of the type in which braking rails or bars are positioned on both sides of the track rails and forced against the wheel by feeding members in the form of thrust rods or the like.

In known rail brakes of the type referred to, the thrust rods are arranged to act upon the outer and inner braking bars on adjacent points over the length of the rails and each braking rail is adjusted in such a manner that it is somewhat pressed aside by each wheel as it enters the brake.

In such rail brakes the wheels frequently show a tendency of "climbing up," whereby derailing may be caused. We have found that this "climbing up" effect is due to the fact that the braking rail is somewhat outwardly bent and the pressure acts mainly or exclusively on the front side of the wheels.

Basing on this observation, it is an object of the present invention to reduce the said "climbing up" tendency of the wheels and to improve the reliability of operation of the brake.

With this and further objects in view, as may become apparent from the within disclosures, the invention consists not only in the structures herein pointed out and illustrated by the drawing, but includes further structures coming within the scope of what hereinafter may be claimed.

The character of the invention, however, may be best understood by reference to certain of its structural forms, as illustrated by the accompanying drawing in which—

Fig. 1 is a diagrammatic bottom view showing a rail brake including braking rails and associated feeding means and having the invention applied thereto.

Figs. 2 and 3 are cross sectional views on line II—II and III—III, respectively, of Fig. 1, viewed in the direction of the arrows.

Fig. 4 is a schematic plan view of a wheel operatively engaged in a rail brake of the type shown in Figs. 1–3.

Similar reference numerals denote similar parts in the different views.

Referring now to the drawing in greater detail, it will be seen that a pair of inner brake rails or bars *b* which in this case take the form of double-T irons, are supported on cross bars *l*, by means of pivoted supports *k* and holders *t*. Thrust rods *h* are also linked to the holders *t* at *e* (Fig. 1), and acted upon knee-lever fashion by the piston rod *n* of a cylinder and piston system *c* which can be operated by compressed air. In this manner, it is possible to feed the braking bars *b* towards the rail *p* of the rail track, in order to operate the brake, and to retract them therefrom in order to put the brake out of action. Outer braking bars *a* are mounted at *f* on knee- or L-shaped holders *o* extending under the rails *p* of the track and supported on cross bars *r*, by means of pivoted supports *q*. Levers *s* are pivoted at *s'* and connected at their lower ends to the holder *o* and, at their upper ends, to rods *i* which are operated knee-lever fashion by the piston rod *m* of a cylinder and piston system *d*, by means of compressed air.

As shown in Fig. 1, the ends of the outer braking bars *a* and the operating members *d, i, s, o*, therefor are staggered with respect to the ends of the inner braking bars and the operating members *c, n, h, t* thereof. As a result, each wheel *g* entering the brake is at first engaged and braked at its inner side only, by the inner braking bar *b*, while the braking action by the outer braking rail *a* becomes effective at a later moment.

This braking action is illustrated in Fig. 4 in which a wheel *g* is shown between the two braking bars *a* and *b*. The wheel is drawn at a larger scale in an axial direction than in a radial direction, so as to show more clearly the points of engagement of the wheel with the braking rails. It will be seen that due to the relatively staggered arrangement of the points of attack *e* and *f* of the feeding members, the wheel is diagonally engaged by the two braking bars, so that the maximum pressure from the outer side acts on the front side of the wheel while the maximum pressure from the inner side acts on the rear side of the wheel, or vice versa, depending on the travelling direction and the position of the wheel in the brake. It will be understood that the tendency of the wheels of "climbing up" in the brake is thus considerably reduced.

In addition, we prefer to arrange the operating devices *c* at the ends of the brake in a manner to exert a lower pressure than that caused by the operating devices *c* in the middle of the brake, whereby the tendency of the wheels of "climbing up" in the brake can be further reduced.

We are aware that many further changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and we, therefore, do not purpose limiting the patent granted hereon otherwise than is necessitated by the prior art.

We claim:

1. A rail brake comprising a pair of braking bars on the outer and inner sides of a rail track,

and a plurality of members acting upon each braking bar at spaced points along the track rail for feeding said braking bars towards the associated track rail, the points of action of the feeding members for the outer braking bars being staggered with respect to the points of action of the feeding members for the inner braking bars, and the feeding members at the ends of the rail brake being adjusted to produce less braking action than the remaining feeding members.

2. A brake construction for rail tracks comprising a pair of rails, two pairs of brake bars, inner and outer, respectively, a brake bar being positioned at each side of each of said rails, and a plurality of independent devices for reciprocable movement of said bars toward and from said rails, one of said devices being adapted to move said inner bars, another of said devices being adapted to move said outer bars, each device for moving said outer bars being positioned between adjacent devices for moving said inner bars whereby diagonal engagement of a wheel with an inner and an adjacent outer brake bar is caused when said wheel is moving along a track rail and said devices move said outer and inner bars thereagainst.

3. A brake construction for rail tracks comprising a pair of rails, two pairs of brake bars, inner and outer, respectively, a brake bar being positioned at each side of each of said rails, and a plurality of independent devices for reciprocable movement of said bars toward and from said rails, one of said devices being adapted to move said inner bars, another of said devices being adapted to move said outer bars, said one of said devices alternating with said another of said devices whereby diagonal engagement of a wheel with an inner and an adjacent outer brake bar is caused when said wheel is moving along a track rail and between said brake bars moved thereagainst.

4. A brake structure for rail tracks comprising a pair of rails, a pair of inner brake bars, a pair of outer brake bars, said inner brake bars extending adjacent said rail track beyond said outer brake bars, and a plurality of independently actuating devices, one of said devices being disposed adjacent each end of said pair of said inner brake bars, another of said devices being positioned between both of said one actuating devices, each of said one devices being adapted to reciprocably shift said pair of inner brake bars relatively to said rails, said another of said devices being adapted to reciprocably shift said pair of outer brake bars relatively to said rails and being actuatable with retardation with respect to the action of said one devices, whereby diagonal engagement of a wheel with an inner and an adjacent outer brake bar may be caused when said wheel is moving along said rail.

5. A brake structure for rail tracks comprising a pair of rails, a pair of inner brake bars positioned between said pair of rails and extending lengthwise thereto, a pair of outer brake bars, and series of independently actuating devices for movement of said brake bars toward and from said rails, one of said series being disposed adjacent each end of said pair of said inner brake bars, another of said series being disposed adjacent each end of said pair of said outer brake bars and between both ends of said pair of said inner brake bars, said one series alternating with said another series and being actuable prior to said latter series whereby diagonal engagement of wheels with inner and adjacent outer brake bars may be caused when said wheels run along said rail track.

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