Nov. 13, 1934. A. BOUSFIELD 1,980,609

ADJUSTABLE NOSE IRON FOR WEIGHING SCALES

Filed March 19, 1931 2 Sheets-Sheet 1

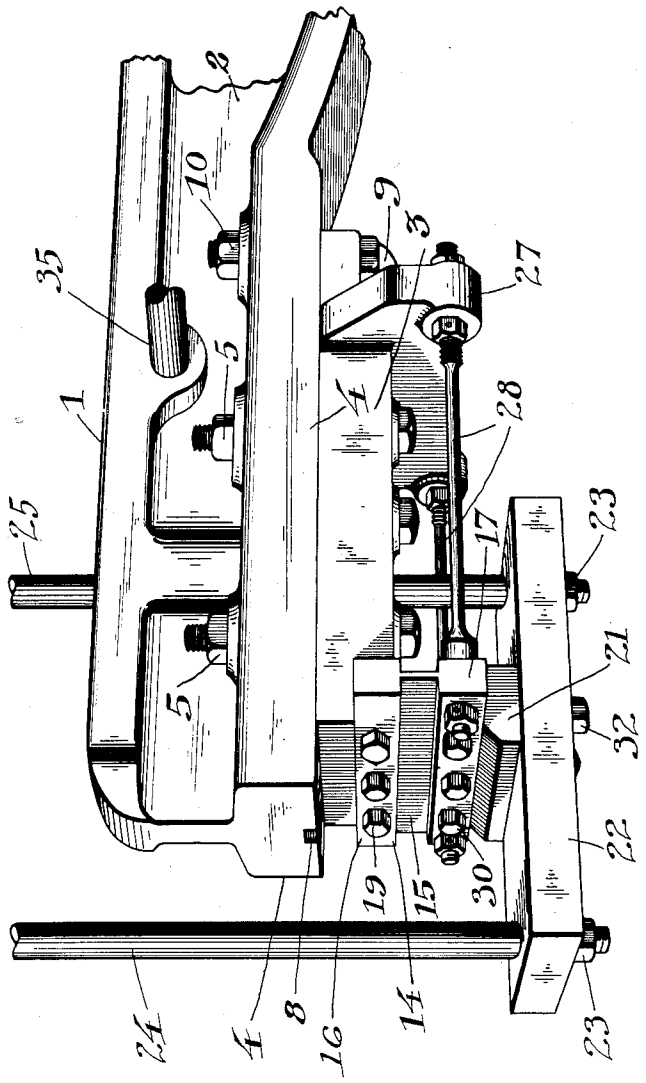


Fig. 1.

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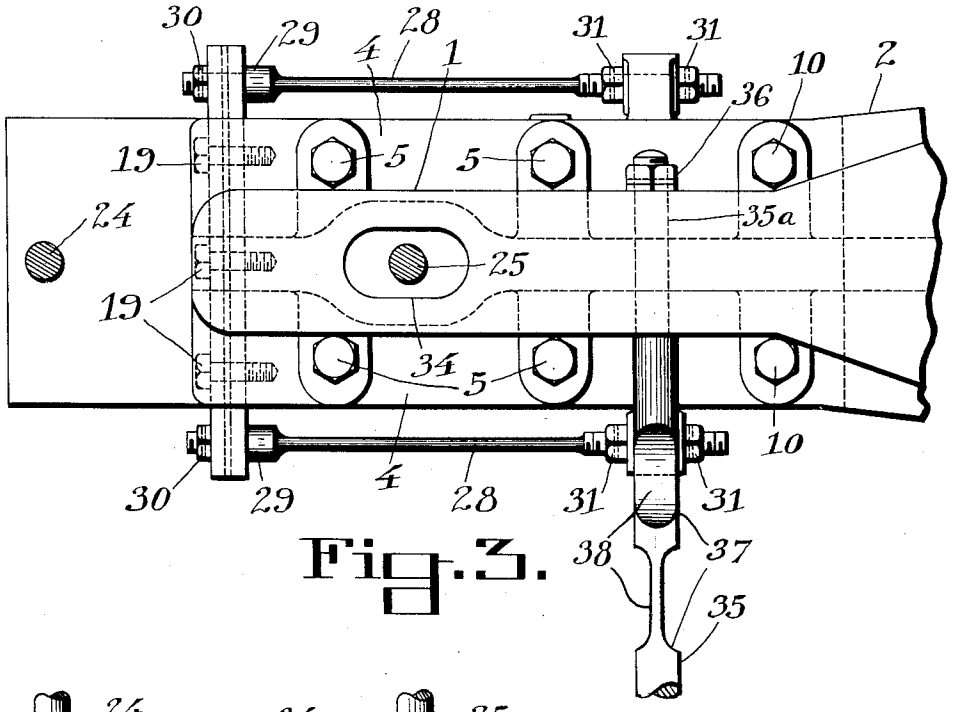


Fig. 3.

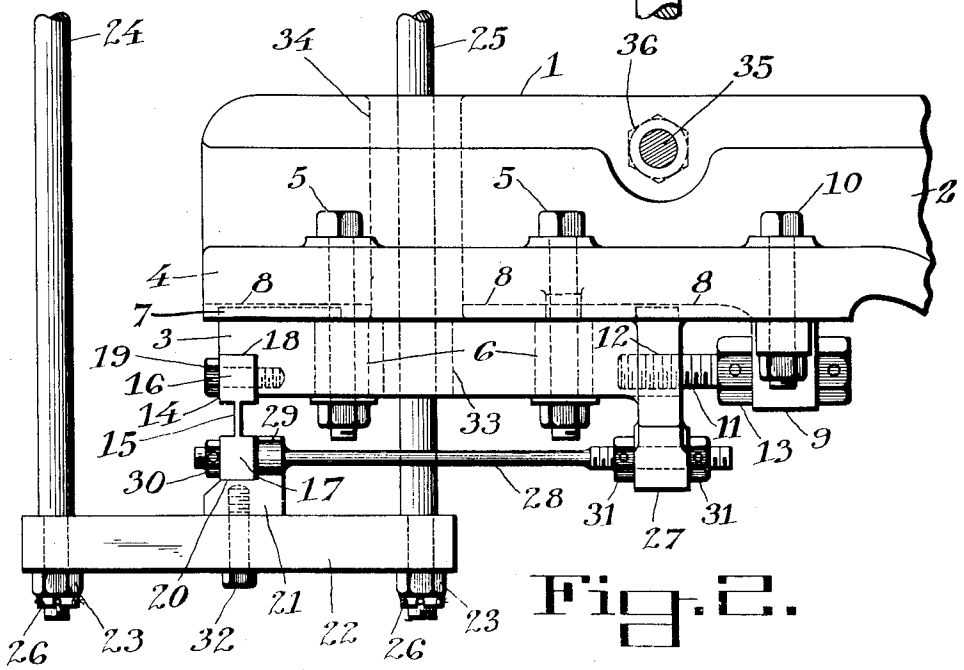


Fig. 2.

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UNITED STATES PATENT OFFICE

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ADJUSTABLE NOSE IRON FOR WEIGHING SCALES

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5 Claims. (Cl. 265—71)

This invention relates to improvements in adjustable nose irons for weighing scales, especially plate fulcrum track scales and more particularly to nose irons of the transverse lever of such scales.

The invention is broadly disclosed in my copending application Serial No. 384,057, Track scales, filed Aug. 7, 1929, which has matured into Patent No. 1,968,988, dated Aug. 7, 1934.

In plate fulcrum track scales the connection between the transverse extension lever and the beam rods is in a position to be affected by the vibrations of the scale structure as heavily loaded cars pass over the weighbridge, with the resulting danger at such times of flexing the relatively thin fulcrum plate at that point to such an extent as to bend unduly or break the fulcrum plate, unless some effective means is employed to prevent it. It is the purpose of this invention to provide simple and effective means for adjusting and holding the fulcrum plate in its proper operative position as well as to guard this plate fulcrum connection against damage or breakage. Therefore, one of the objects of the present invention is to provide means for adjusting the nose iron of the transverse or fifth lever of a track scale and the plate fulcrum connected thereto.

Another object is to provide the plate fulcrum, carried by the nose iron, with adjustable stay rods adapted to maintain the fulcrum plate in a vertical position and to prevent the undue bending or breaking of the fulcrum plate when subjected to excessive load stresses or vibrations.

In order that the nature of my invention may be fully understood, I have illustrated certain embodiments of the invention in the accompanying drawings, in which,—

Figure 1 is an isometric view of the tip end of the transverse lever, showing a preferred form of my improved adjustable nose iron mounted thereon and co-operating with the plate fulcrum attached to the beam rod connection.

Figure 2 is a side elevation of the tip end of the transverse extension lever and the nose iron shown in Figure 1.

Figure 3 is a top plan of the tip end of the transverse extension lever and co-operating parts as shown in Figure 2.

In the drawings 1 indicates the tip end of the transverse extension lever 2 of a plate fulcrum track scale. Mounted on the underside of the lever end 1 is a nose iron 3, which is secured to the flanges 4 of the lever end 1 by bolts 5 inserted in openings 6 in the nose iron 3 and the flanges 4, and is provided on its upper side with a tongue 7 adapted to slide freely in a channel 8 in the underside of the lever end 1. A bracket 9, attached to the underside of the lever end 1 by bolts 10 inserted in the flanges 4, is spaced from the inner end of the nose iron 3 and carries an adjusting screw 11 having its end in engagement with a threaded opening 12 in the inner end of the nose iron 3, by which means the nose iron may be readily adjusted to the position desired and locked by adjusting the lock nut 13 mounted on the adjusting screw 11. The openings 6 in the nose iron 3 are of sufficient diameter to permit the bolts 5 to move longitudinally therein in adjusting the nose iron 3.

In the outer end of the nose iron 3 is transversely mounted a plate fulcrum 14, comprising a relatively thin fulcrum plate 15 with enlarged upper and lower rectangular portions 16 and 17, the upper enlarged rectangular portion 16 being seated in a transverse groove 18 in the nose iron 3, to which the portion 16 is secured by the screws 19. The lower enlarged rectangular portion 17 of the plate fulcrum 14 is seated in a groove 20 in a rectangular block 21 carried by the beam connection platen 22, to which it is secured by the nuts 23, mounted on the threaded ends of the beam rods 24 and 25, which are locked in position by the lock nuts 26. At the inner end of the nose iron 3 is a transversely depending lug 27, between which and the lower portion 17 of the plate fulcrum 14 extends on each side a stay rod 28 bolted to the lower portion 17 and the lug 27. The stay rods 28 are formed with an enlarged portion 29 adjacent to the inner side of the lower portion 17 of the plate fulcrum 14 and are provided with lock nuts 30 at their outer ends and lock nuts 31 at their inner ends, the former co-operating with the enlarged portion 29 and the latter co-operating with the lug 27 in holding the stay rods 28 securely in a fixed position. By this arrangement the stay rods 28 are adapted not only to maintain the fulcrum plate 15 in a substantially vertical position but are also adapted to permit the fulcrum plate 15 to flex sufficiently to function properly, yet holding the fulcrum plate 15 constantly in check and thus preventing it from flexing too far or breaking under heavy load stresses or vibrations.

The rectangular block 21 is secured by the screws 32 to the center of the beam connection platen 22, on which the block 21 is transversely mounted. At the ends of the platen 22 are fastened the vertical beam rods 24 and 25 extending upwardly to the beam of the scale, not shown, and to which they are connected, the inner beam rod 25 extending through enlarged openings 33 and

34 in the nose iron 3 and lever end 1 respectively, which are sufficiently large to allow ample play for the inner beam rod 25 in its operation and during adjustment of the nose iron 3.

Extending laterally from the lever end 1 is a check rod 35, which is secured to the lever end 1 by a nut 36 on its threaded inner end 35*a* and having its outer end suitably attached to the side wall of the scale pit (not shown), being thus adapted to hold the transverse lever 1 in position and prevent undue lateral play of the lever. The check rod 35 is provided with spaced longitudinal notches 37 forming webs 38 at right angles to each other, by which arrangement the nose iron 3 and lever end 1 are resiliently held and while thus they are permitted to move slightly vertically and laterally by the flexing of the webs 38, when subjected to vibrations from the weigh-bridge, yet they are held in check and they thus relieve the beam rods and the scale beam from excessive vibration.

While I have shown and described the preferred embodiment of my invention it is to be understood that I do not desire to limit myself to the exact form of construction shown and described, as various modifications may be made that will come within the scope of the invention.

I claim:—

1. A nose iron for weighing scales comprising means for securing the nose iron to the tip end of the transverse extension lever of a scale, a fulcrum plate having an upper portion fixedly secured in the outer end of the said nose iron and a lower portion adjustably mounted on a beam connection platen carrying beam rods, a depending lug at the inner end of the said nose iron, and spaced stay rods connected to the lower portion of the fulcrum plate and adjustably mounted in the said lug.

2. A nose iron for weighing scales comprising means for securing the nose iron to the tip end of the transverse extension lever of a scale including a beam connection platen mounted below the nose iron, carrying beam rods and adapted for suspension from a scale beam, a depending bracket attached to the under side of the said lever end and spaced from the inner end of the nose iron, adjusting means mounted in and connecting the inner end of the nose iron and the bracket, whereby the nose iron may be adjusted to the proper position, means for locking the said adjusting means, and a fulcrum plate having an upper portion fixedly secured in the outer end of the said nose iron and a lower portion adjustably mounted on the said beam connection platen.

3. A nose iron for weighing scales comprising means for securing the nose iron to the tip end of the transverse extension lever of a scale, a fulcrum plate having an upper portion fixedly secured in the outer end of the said nose iron and a lower portion adjustably mounted on a beam connection platen carrying beam rods, a depending lug at the inner end of the said nose iron, and spaced stay rods provided with enlarged portions adjacent to the inner side of the said lower portion of the fulcrum plate, connected to the lower portion of the fulcrum plate and adjustably mounted in the said lug.

4. A nose iron for weighing scales adjustably mounted on the tip end of the transverse extension lever of a scale, and resilient means connected to the lever end and wall of the scale pit adapted to hold the lever in position and prevent excessive lateral play of the lever and nose iron.

5. A nose iron for weighing scales adjustably mounted on the tip end of the transverse extension lever of a scale, and resilient means connected to the lever end and wall of the scale pit adapted to hold the lever in position and prevent excessive lateral play of the lever and nose iron, comprising a laterally extending check rod provided with spaced, longitudinal notches forming webs disposed at right angles to each other, whereby the said nose iron and lever are resiliently held and permitted to move slightly both vertically and laterally by the flexing of the said webs, when subjected to vibration.

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