(No Model.)

W. C. PEIRCE.

RAILWAY DRAWING HEAD.

No. 447,200. Patented Feb. 24, 1891.

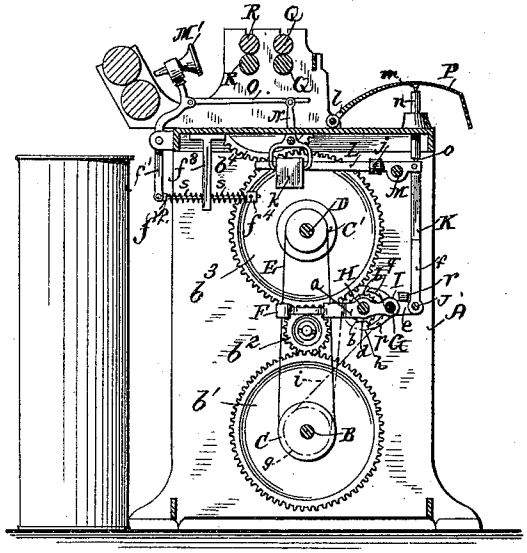


Fig. 1.

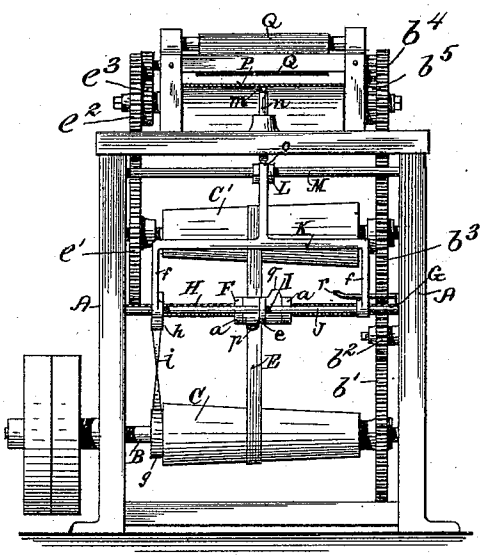


Fig. 2.

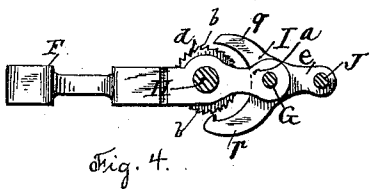


Fig. 4.

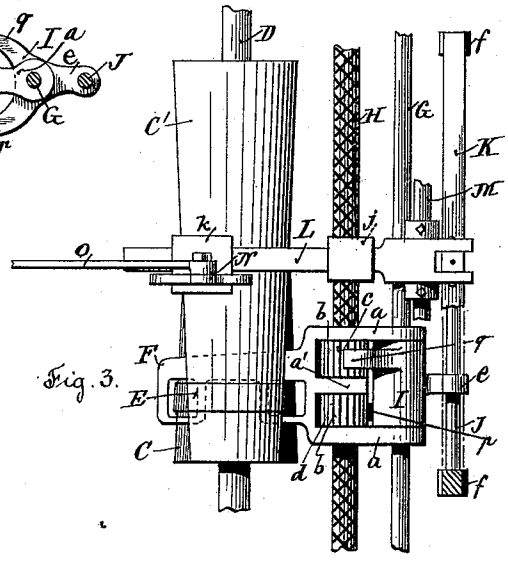


Fig. 3.

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RAILWAY DRAWING-HEAD.

SPECIFICATION forming part of Letters Patent No. 447,200, dated February 24, 1891.

Application filed June 12, 1890. Serial No. 355,219. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. PEIRCE, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Railway Drawing-Heads, of which the following is a specification.

My invention consists in the employment of a movable creel for operating the regulating mechanism, in the combination of a movable creel with the trumpet-guide, and in the improved construction of the regulating mechanism, as hereinafter set forth.

Figure 1 represents a vertical section of a railway-head provided with my improvement. Fig. 2 represents a front elevation of the same, the movable creel for the roving being shown in section. Fig. 3 represents a detail top view of the belt-shifting mechanism. Fig. 4 represents a detail view of a portion of the same.

In the accompanying drawings, A represents the frame of the machine; B, the driving-shaft, upon which is placed the cone-pulley C, and upon the shaft D is placed the opposite cone-pulley C′, the belt E which connects the said cone-pulleys being controlled in its regulating movement by means of the sliding belt-shipper F, which is supported upon the fixed rod G and the double-threaded screw H. The belt-shipper F is provided with the arms *a a* and the intermediate projection *a′*, and between the arms *a a* upon the rod G is loosely placed the catch I, which is adapted to engage with the teeth *b* upon the periphery of the nut *c*, having a right-hand thread, and the nut *d*, having a left-hand thread, which nuts are held upon the screw at opposite sides of the projection *a′* of the shipper. The catch I is provided with the perforated arm *e*, which loosely fits the rod J, connecting the arms *f f* of the suspended yoke K, and the screw H is driven continuously from the pulley *g* upon the shaft B by means of the pulley *h* upon the screw and the crossed belt *i*. The yoke K is jointed to the lever L, which is pivoted to the fixed rod M, and upon the long arm of the lever L is placed an adjustable weight *j* and a sliding weight *k*, the said sliding weight *k* being operatively connected with the pivoted trumpet-guide M′ by means of the forked lever N and the connecting-rod O. To the lower end of the trumpet-lever *f′* is jointed the rod f^2, passing loosely through a perforation in the bracket-arm f^3, and upon the said rod at both sides of the bracket-arm are placed the separate spiral springs *s s*, the said springs being adapted for adjustment by means of the movable collar f^4, so that the required tension of the sliver to cause the movement of the trumpet can be regulated as desired. The movable creel P is pivoted to the frame A at the side *l*, and is provided with a conical point *m*, resting upon the center of the loosely-held pin *n*, which is provided with a conical lower end *o*, which rests upon the upper side of the lever L.

The cone-pulley C is connected by means of the train of gears *b′*, b^2, b^3, b^4, and b^5 with the feeding-rolls Q, and the cone-pulley C′ is connected with the drawing-rolls R by means of gears *e′*, e^2, and e^3, as usual in railway-heads.

In operating the machine the roving is first received upon the movable creel P and carried between the rolls Q and R and through the trumpet-guide M′, and by means of the adjustable weight *j* the connected moving parts are to be balanced, so that when the roving is of the proper size and weight the catch I will be out of engagement with both of the nuts *c* and *d*, which nuts, except when in engagement with the said catch, tend to revolve with the screw; but in case the roving tends to run heavier than the proper standard weight, then the creel P will be pressed downward, so as to overbalance the lever L, causing the lower arm *p* of the catch I to engage with the teeth *b* of the nut *d* to stop the revolution of the same, thus causing the lateral movement of the belt-shipper F, whereby the belt E will be carried toward the larger end of the cone-pulley C and the smaller end of the cone-pulley C′. The drawing-rolls R will thus be caused to revolve with a greater speed than before, whereby the roving will be drawn to lighter weight in its passage from the rolls Q to the rolls R, and in case the roving tends to run lighter than the standard weight, then the lever L will be overbalanced by the weights *j* and *k*, so that the upper arm *q* of the catch I will be thrown into engagement with the teeth

b of the nut *c* to stop the revolution of the same with the screw, thus causing the opposite lateral movement of the belt-shipper F and the movement of the belt E toward the smaller end of the cone-pulley C and the larger end of cone-pulley C′, thus causing a slower movement of the drawing-rolls R to even up the roving. The trumpet-guide M′ also acts conjointly with the movable creel P to cause the proper movement of the catch I and the required movement of the belt E upon the cone-pulleys.

If the machine is allowed to run without being threaded with roving, there will be danger of damage to the machine by the continued engagement of the arm *q* of the catch I with the nut *c*, which will cause the lateral movement of the belt E until the arm *e* strikes against the arm *f* of the yoke K, and in order to guard against such a result a guide-arm *r* is arranged to project inwardly from the frame A and serves to raise the catch-arm *q* out of engagement with the nut *c* before the arm *e* comes into engagement.

I do not limit my claim to a movable creel pivoted at one side, as shown in the drawings, as it is evident that the creel can be directly supported by the sliding pin.

I claim as my invention—

1. The combination, with the feed-rolls, the drawing-rolls, the cone-pulleys, the driving-belt, and the gearing which connects the cone-pulleys with the feed and drawing rolls, of the belt-shifting mechanism and the movable creel connected with the belt-shifting mechanism, substantially as described.

2. The combination, with the feed-rolls, the drawing-rolls, the cone-pulleys, the driving-belt, and the gearing which connects the cone-pulleys with the feed and drawing rolls, of the belt-shifting mechanism, the trumpet-guide, the movable creel, and the connections between the belt-shifting mechanism, the trumpet-guide, and creel, substantially as described.

3. The combination, with the movable creel and the weighted lever connected therewith, of the belt-shipper, the reversely-threaded revolving screw, the nuts adapted to revolve with the screw, and the catch operatively connected with the weighted lever and adapted to engage with the nuts to stop their revolution with the screw, and thereby cause the required lateral movement of the belt-shipper, substantially as described.

4. The combination, with the cone pulleys, the driving-belt, and the belt-shipper, of the reversely-threaded revolving screw, the nuts adapted to revolve with the screw, and the catch adapted to stop the revolution of either one of the nuts, and thus cause the required lateral movement of the belt-shipper, substantially as described.

5. The combination, with the movable creel, the weighted lever, the adjusting-weight, the sliding weight, the lever for operating the sliding weight, the trumpet-guide, its operating-springs, and a connection between the trumpet-guide and the weight-operating lever, of the feed-rolls, the drawing-rolls, the cone-pulleys, the driving-belt, the belt-shifting mechanism, and the gearing which connects the cone-pulleys with the feed and driving rolls, substantially as described.

6. The combination, with the cone-pulleys, the driving-belt, and the belt-shipper, of the revolving screw, a nut adapted to revolve with the screw, the catch adapted to stop the revolution of the nut to cause the lateral movement of the belt-shipper, and the guide for raising the catch out of engagement with the nut to prevent a dangerous excess of movement, substantially as described.

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Witnesses:
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