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Improved Turn Table.

The accompanying engravings represent an improvement in Turn Tables for railroads, for which a patent was granted on the 15th of last month to J. C. Robie, of Binghamton, N. Y. The nature of the invention consists in balancing the platform of the turn-table upon a transverse central shaft or other suitable axis resting upon the roller carriage in a line intersecting the line of the axis upon which the turn-table rotates, in such a manner that the table, when in an horizontal position, is elevated or has its rails above those of the track, to admit of the free swing of the table over its under supports or bearings, and so that the table may be rocked with facility from its center, or tilted to bring the ends of its rails on either side of the balancing shaft into line or level with the rails of the track.

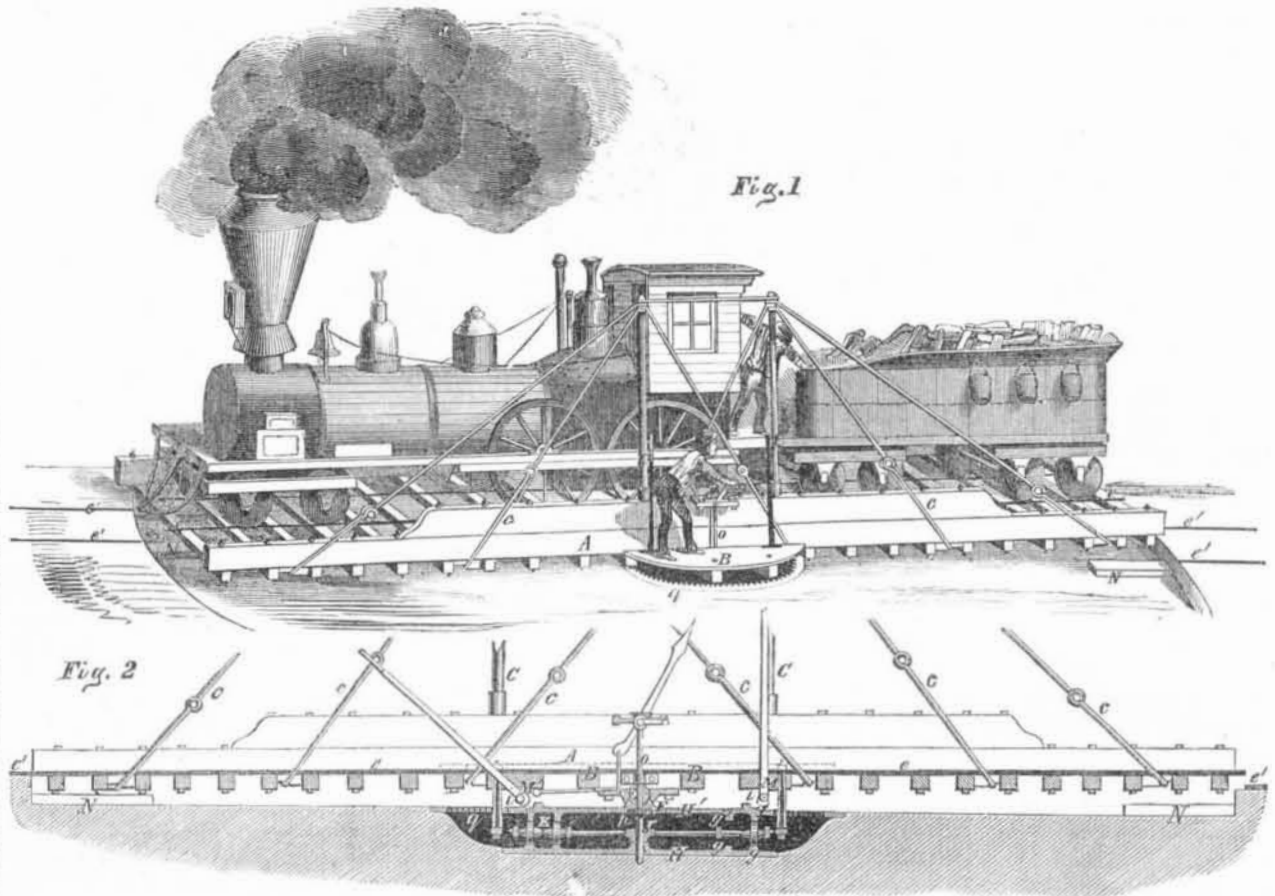
It consists also of holding the table steady at its horizontal set whilst rotating, and tilting or depressing it on either side of the balancing axle when required, by means of cams or eccentrics arranged to bear upon the roller carriage, and operating in connection with the roller carriage and table, as will be described.

In figure 1 a locomotive with its tender is shown upon the turn-table, and it is being turned round by the attendant; *e e* are the rails on the platform of the turn-table, and *e' e'* those of the track. Figure 2 is a longitudinal vertical section through the center, showing the left hand end of the platform depressed upon its bearings and ready to receive an engine or car. Figure 3 is a plan view. The same letters refer to like parts.

The platform of this turn-table is constructed in a similar manner to that of some others now in use being composed of longitudinal timbers, *A A*, and sills, *B B*, which are secured by bolts and plates. The sills form the floor on which the rails, *e e*, are laid; *C C* are posts and *c c* tension rods to support the platform and prevent deflection. There are also short timbers bolted under the center of the sills and sleepers. *E* is a horizontal shaft placed under the center of the platform with its end firmly secured in the side longitudinal timbers, *A*. The platform forms a balance, of which this shaft is the axis. *F F* is a bearing running across the roller carriage below, for properly supporting the shaft, *E*, and the sleepers for the rails, *e e*.

The carriage underneath for turning the platform consists of the bottom and top plates, *H H'*, a center pin, *J*, the two metal rings, *I I'*, and the rollers, *K K*. The bottom and top plates of a turn-table of the largest size to carry an engine and tender of from 40 to 45 feet in length, require to be only about 8 feet in diameter. The bottom plate, *H*, has two circular raised tracks, *g g*, and is bored to receive the center pin, *J*. It rests upon a foundation of masonry about three feet below the rails, *e e*. This foundation is very small in comparison with that of the common turn-table provided for rollers near the outside of the table. The rollers, *K K*, are fitted loosely upon axles, and with a col-

ROBIE'S BALANCE TURN-TABLE.



lar between each pair; their axles support the two rings, *I I'*, which keep them in position to run on the circular tracks, *g g*. The inner ring is connected with a plate or armed hub, bored through the center for the vertical pin or spindle, *J*, to pass through and keep the two rings concentric with the axis on which the table rotates. The top plate, *H'*, is of the same size as the bottom one, *H*, and the two circular tracks, *g g*, are on its under side and rest upon the rollers, *K K*. The center pin, *J*, is firmly secured to the top

plate, *H'*, and passes through the bottom plate which has a deep socket. The boxes, *F F*, of the shaft, *E*, of the platform, rest upon and are secured by bolts to the top plate, *H'*, and so placed that the axis of pin *J*, if continued upward, would cut the axis of *E*.

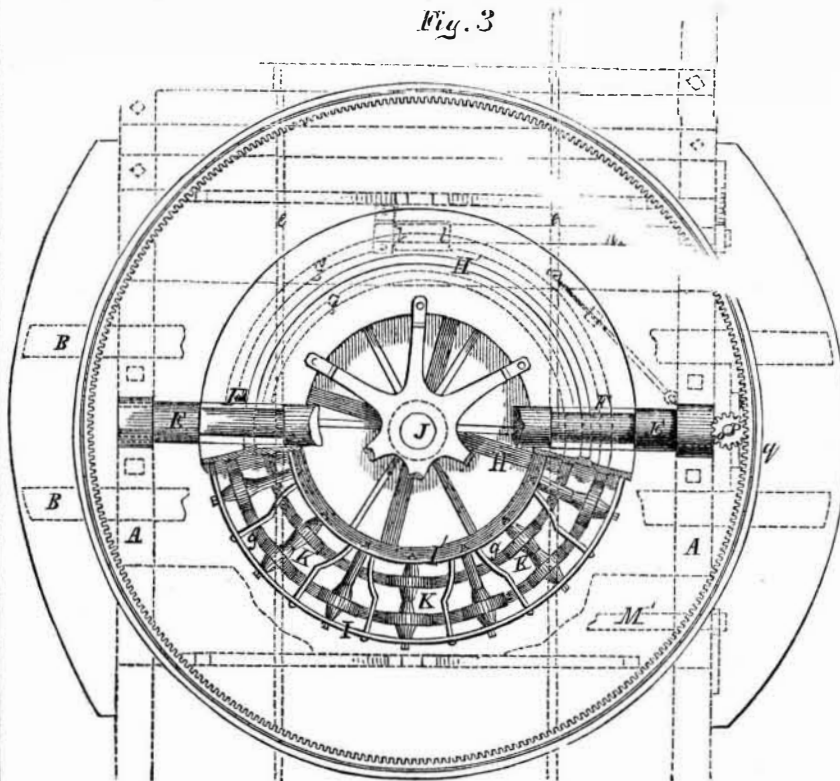
At equal distances from, and parallel with shaft, *E*, are two shafts, *M M'*, whose ends have journals fitted to work in plates attached to the sides of the platform. The portions of these shafts included between the dotted lines, *l l*, fig. 3, are larger than the rest, and

elevate the whole platform about an inch above the bearing pieces, to turn round the table and engine. The depressed end of the platform always rests on solid fixed bearing pieces, *N N*, so as to support the platform under the rails directly below the weight. The turn-table is caused to rotate in the usual way by a pinion, *P*, which is fixed on a vertical shaft *O*, attached to the platform, and it gears with a circular toothed rack, *q*, which is secured to the foundation work, as shown in fig. 1. There is an indicator on the platform, with a pointer and an index to show the engineer the position of the platform, so as to move the engine or car, and bring the platform to a state of equipoise. The eccentric shafts are employed to cant the platform up or down at either end, to keep it on a level above, or on a line with the track. The rise in the platform by the eccentrics above the bearing pieces, *N N*, requires to be very small, not above an inch in a full-sized turn-table. The rollers support the table, and the platform is so nicely balanced on its central shaft, *E*, that it requires very little power to move it. This turn-table possesses the same strength and stability as those in common use, and it may be constructed at less expense. It is now in successful operation on the Coburg and Peterboro' R.R., in Canada West, and on the Ohio and Mississippi R.R. J. Spaulding, Engineer and Superintendent of the C. and P. and Ontario Railroads, says, "it may be turned with a 30 ton engine upon it in one minute by a boy twelve years of age, and it obviates many difficulties in the common turn-table. I believe it to be preferable to any plan I have ever seen, and recommend it to the favorable notice of engineers and railway companies."

More information respecting it may be obtained by letter addressed to Mr. Robie, at Binghamton, who has also obtained for his invention, through our Agency, patents in Great Britain and France.

A French gardener has discovered that by painting his hot-houses with gas tar all the insects, so destructive to plants and fruit, die.

Fig. 3



they are made eccentric to the journals. Upon the top side of the upper roller plate, *H'*, are two raised pieces which form bearings for the eccentric parts of *M M'* to rest upon.—Each of these shafts has a lever attached at its outer end, as shown in fig. 2, which can be

turned to bring the projecting part of an eccentric into position so as to be free from the bearing part on plate *H'*, below, to depress the platform, as shown at the left hand, or vice versa, to elevate it at the back end, to let the engine on or off the track;—also, to