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Improved Turn-Table.

Our engravings illustrate an improvement in turn-tables which secures some important advantages.

The improvement is the direct combination of the ends of the centrally divided truss-beams in a turn-table, with each other as well as with the central supporting box upon which the table is balanced, in such a manner, that, when united, each beam shall be continuous, independently of the box, and be also more firmly secured thereto, and suspended thereby, than has hitherto been done.

The central box is thus relieved from the strain of the load, this strain being borne wholly by the truss-beams; accidental displacement of the connections of the beams by sudden and violent jars upon the turn-table is also obviated, while the table may as readily be taken apart and put together before and after transportation, as heretofore.

The letters, A, in Figs. 1 and 2, represent the truss sections alluded to. They are so formed that when brought together and secured, end to end, the under side of the continuous beam thus formed is an arc of a circle, of which the upper side is a chord.

Each section is a metallic plate with holes formed therein, as shown, to reduce weight, and each has a flange on each side, projecting all around its edge, except at the inner end.

The inner ends of the truss sections are faced to fit very closely, and exactly against each other, so as to form, when put together and secured, one continuous truss-beam. The two divisions are bound together at the top by broad-headed tie-straps and keys. At the lower side they are connected by a cross-tie bar, also held by keys or wedges, which not only operate to secure the cross-tie, but to draw together the faces of the joints.

Two truss-beams thus constructed are bolted centrally against or upon the ends of a hollow rectangular box, F, this box being cast in a single piece with an enlarged aperture in the bottom to fit over and receive the pintle, D, Fig. 2, upon which the table is pivoted.

The ends of this box fit snugly under the inner flanges of the edges of the beams, so that the latter overlap and embrace the ends of the box, and form a support for the beams. Projecting strips cast on the inner faces of the beams, parallel to the inner ends of each division also bear against the sides of the box.

A system of key wedges, having screw threads on their points, which project through apertures in the beam, and to which nuts are fitted, are used to tighten and clamp the beams upon the box, and also to level and nicely adjust the same with reference to the axis of the pintle, and the surface of the cap-plate, in the central box. This system of supports relieves the bolts in great measure from strains, consequent upon jars or pressure.

B, Fig. 2, is the central pier supporting the pintle, D, upon which the cap-plate, E, bears.

A friction box consisting of two circular plates (one being secured to the cap-plate, D, and the other to the upper side of a socket plate), between which are interposed conical steel rollers running in concentric grooves formed in the faces of the plates facilitate the rotation of the table. The upper end of the pintle is rounded as usual so that the table may tip or vibrate thereon as well as turn upon the rollers in the friction box.

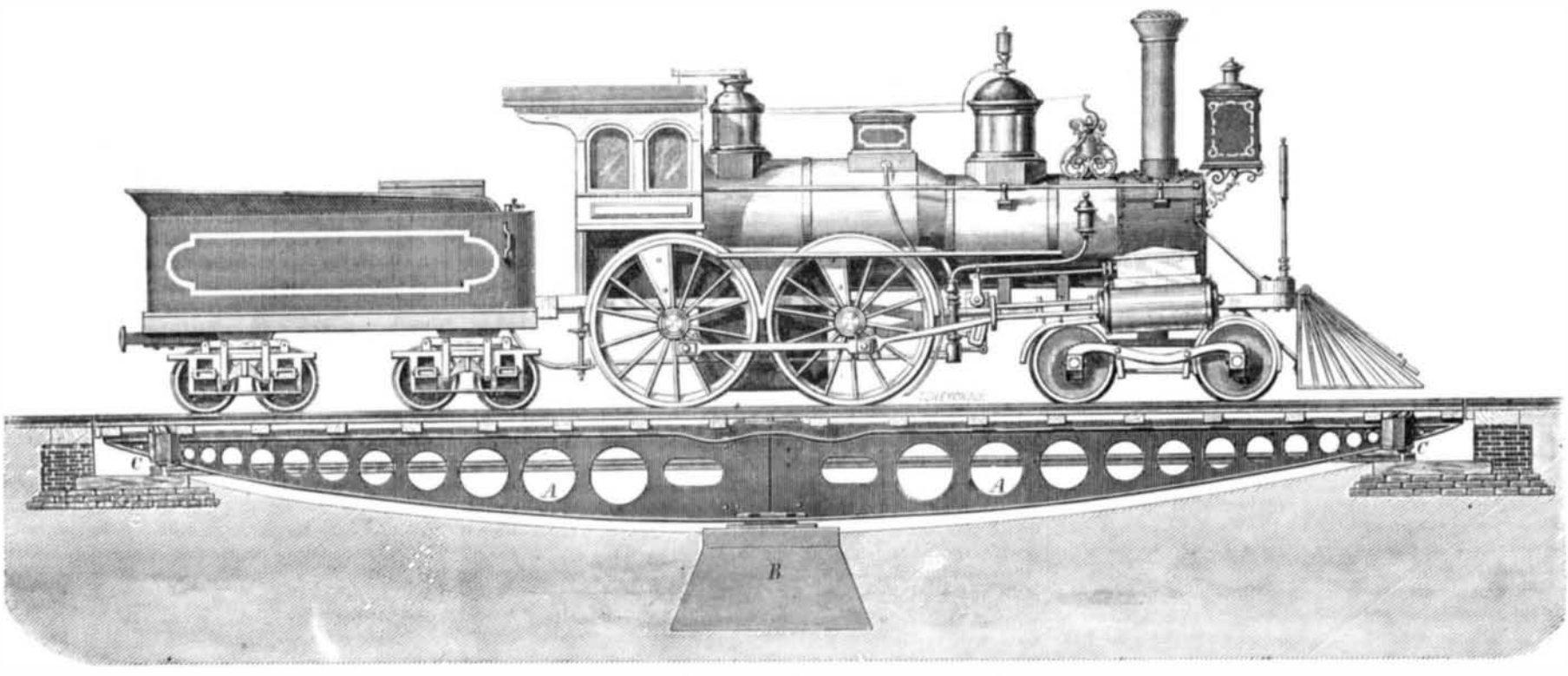
The outer ends of the beams are connected by cross-bars provided with rollers, C, which swing over a concentric track but do not touch except when the table is tipped out of its horizontal plane.

The inventor states that the friction is so reduced by this method of mounting the table that one weighing 25,000 lbs. may be turned with the point of a lead pencil without breaking the point.

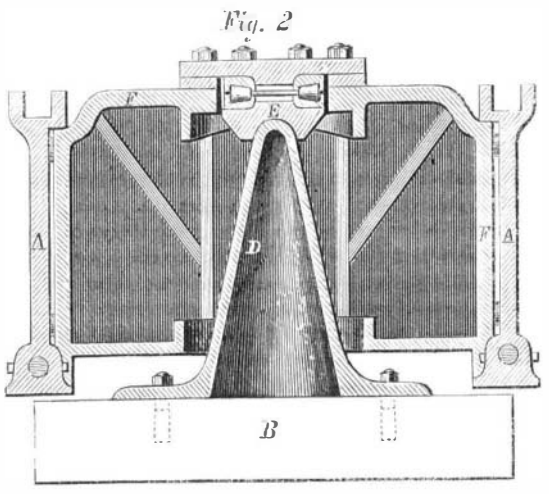
The plates and rollers are made of steel, and are very durable. They also, of course, turn with less power than the old cast-iron center. A table fifty feet in diameter, weighing 25,000 pounds, it is stated, turns with a weight of only 1½ pounds attached by a cord running over a pulley to one of the arms.

Testimonials, speaking in the highest terms of the good qualities of this table, have been shown us, from presidents and superintendents of several important Western railroads where they are in use.

Patented, February 8th, 1870, by Clements A. Greenleaf, of



GREENLEAF'S IMPROVED TURN-TABLE.



Indianapolis, Ind. These tables of various sizes, from 9 to 60 feet in diameter, are manufactured by the Greenleaf Machine Works, of the above place.

NEW BREAD.

Why is it that we must refrain from eating new bread, as if it were poison; unless, indeed, one happens to possess the stomach of an ostrich and the constitution of a rhinoceros?

Every one knows how palatable is the steaming loaf fresh from the bake-house, and we can all remember with what eager eyes we regarded as school-boys the new loaf, as it stood in its unshapely modesty, wreathed in vapor, in the cupboard. Which of us, during his melancholy days of satchel and Latin-root-hood, has not eyed the forbidden morsel with an eager craving out of all proportion to its merits—a craving which seemed to develop and increase as our loved and venerated mother assured us that new bread was decidedly unwholesome for little boys? And when a crummy slice from a two days' old loaf was placed in our unwilling hands, smeared and diagramed as it usually was with molasses or other saccharine decoy, and we were told how good it was for us—but for the molasses how odious it seemed! Probably this repugnance was strengthened when we recollected how many other unpalatable circumstances were daily happening—all for our good. We were hurried to bed at the most objectionable hours; we were reminded in the morning of the sluggard, his complaining voice, and his unhappy end we were soaped, scrubbed, bolused, and birched—all for our good; so that, schoolboy-like, we sometimes longed to make a surreptitious trial of the bad, by way of a change. Nevertheless, as a rule, our watchful parents and maiden aunts almost invariably succeeded in defeating our cunningly contrived schemes, especially those having for their object the consumption of new bread.

Now, why is new bread unwholesome, or rather, how does it happen that its alleged unwholesomeness is only experienced here and in England? In Paris or Vienna even the most dyspeptic eat, with a feeling of perfect safety, the exquisite new bread, which is usually baked three times a day and served fresh with each meal. So far from the cry being raised, "Waiter, some stale bread," the *garcon* who dared, either accidentally, through hygienic belief, or from motives of economy, to fetch yesterday's rolls, would have to run the denunciatory gauntlet of the table, and make certain of retiring copperless at the hands of the diners, even if no worse fate overtook him. Can it be that our climate is inimical to the production of bread in the highest state of perfection; that our flour is inferior to, or our bakers less skillful than theirs? Something is evidently wrong, so it may be interesting to look into the chemistry of bread-making here, previously to describing how they manage the production of the staff of life in the south of sunny Spain.

When wheat is ground and sifted, it gets divided into bran and flour. The bran is the outer coating of the grain, which resists the crushing of the millstones longer than the interior, but when reduced sufficiently to pass through the sieves, so darkens the color of the whole as to render it inferior in market value, although really superior in nutritive qualities to the white flour alone. For the former reason it is generally sifted out, and sold for fattening farm stock. The flour consists of the interior. If pure flour be mingled with a sufficiency of water to moisten it, a little yeast and salt added, and the mass kneaded thoroughly together, then placed in a warm atmosphere, it ferments and increases in bulk. Carbonic acid gas is disengaged in the substance of the dough, which speedily becomes cellular. Placed in a hot oven, the swelling increases until the mass has nearly reached 212° Fah., when fermentation is arrested, the bread retaining the shape it has then assumed. This fermentation is the result of the chemical action which yeast exercises upon moist flour, in changing a portion of the starch into sugar, and then converting the latter into alcohol and carbonic acid. The dough being glutinous and highly elastic, the gas cannot escape, so the mass swells and increases until, the heat killing the yeast plant, further evolution of gas ceases, while the alcohol evaporates and is lost in the oven.