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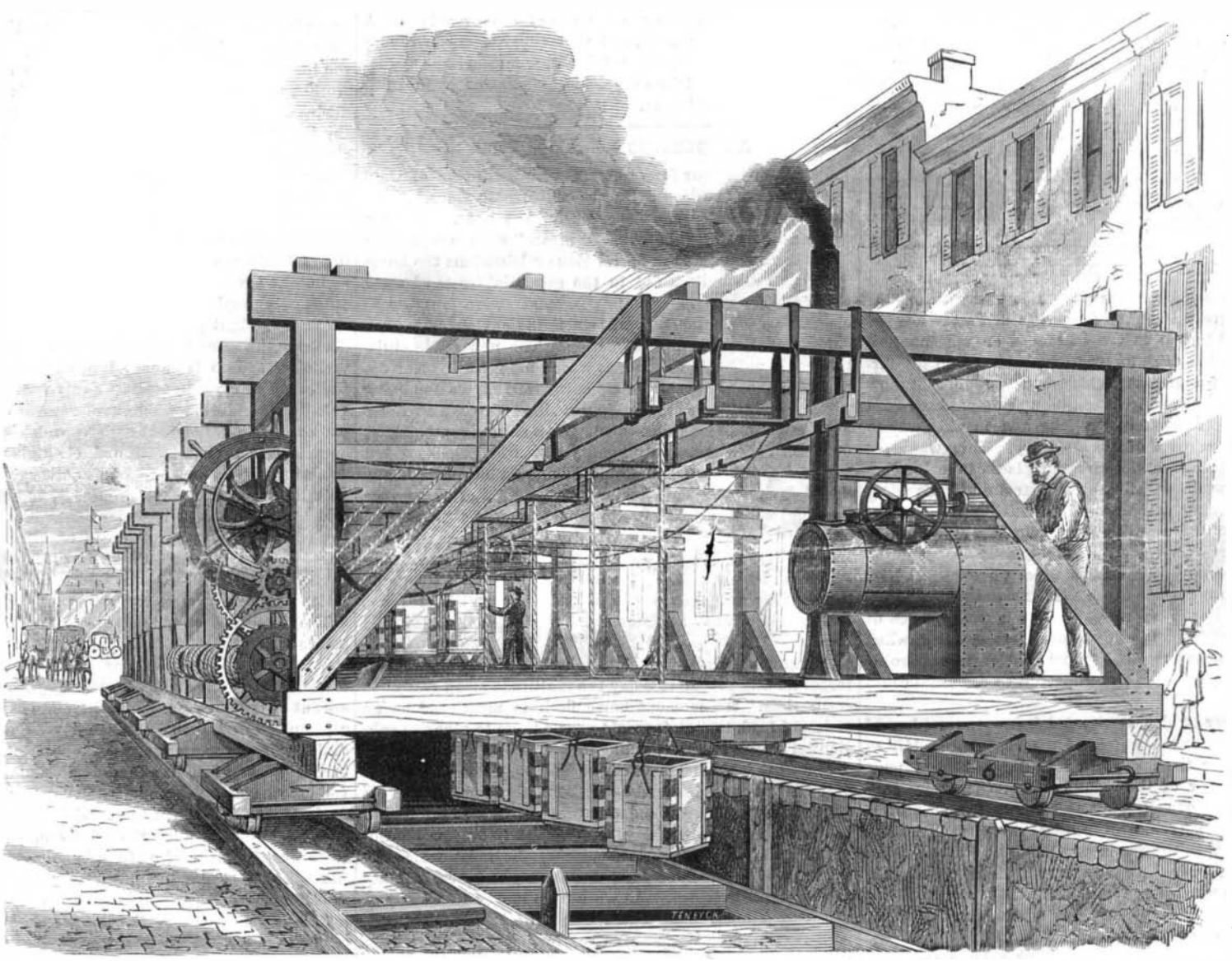
IMPROVED PORTABLE ELEVATOR AND CONVEYER.

The excavation of a sewer in a city street is generally the means of blocking up all, or nearly all, the roadway with the earth thrown up on each side of the trench. That this is productive of no small amount of inconvenience, as an impediment to travel and business, often for a considerable time, it is hardly necessary to point out; and hence the invention which we herewith illustrate, having among its principal advantages that of avoiding the above nuisance, will at once commend itself to the careful attention of contractors, engineers, and the public.

In the large engraving is represented the apparatus as it appears in operation, and in Fig. 2 is shown a side view of the essential working portions. A is a frame made of wood or other suitable material, and supported at the sides on trucks, so as to straddle the ground to be excavated. From the top of the frame are suspended by rods two parallel tracks, B, which are placed sufficiently far apart to allow the buckets, when hanging from both tracks, to pass each other. On these rails travel small trucks, C, of which there are any desired number on each bucket (each bucket excavating 8 feet in length), all of which are connected together by ropes or chains. The latter pass from the trucks on one track, around a friction roller, D, at the end of the frame, and are then attached to the trucks on the other track, so that, when one set of trucks are moved, the others will travel in a contrary direction.

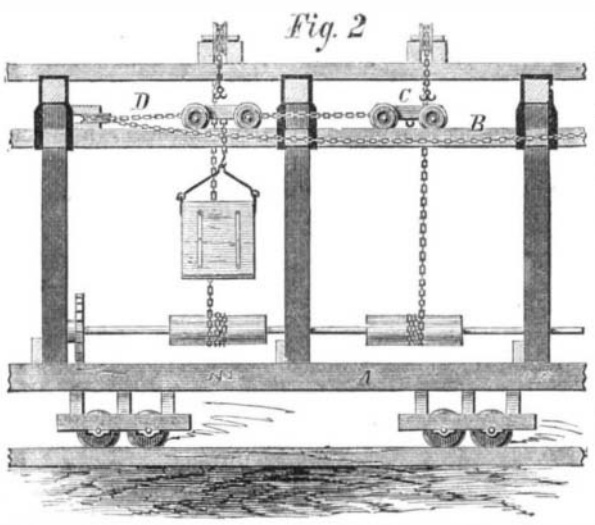


SHANKS' PORTABLE ELEVATOR AND CONVEYER.

Several friction rollers are disposed along the top of the frame, A, over which pass the bucket ropes, which are brought to a windlass, as represented in the large illustration. After the buckets are filled with earth, they are hoisted by this means until their bails are sufficiently high to allow of being engaged by the hooks hanging below the trucks, C, on one track. When each truck has received its bucket, the whole line of vehicles is moved to the rear of the excavation, thereby, at the same time, running forward the other set of trucks. The buckets are then emptied, while other buckets are being filled and attached to the trucks over the point of work, when the operation as above described is repeated. The same ropes which hoist the buckets are attached to the empty ones on their arrival, lifting the same sufficiently to allow of the hooks on the trucks being removed from the bails, when they are easily lowered into the trench, where the hoisting hooks are transferred to full buckets, leaving the empty ones to be filled.

It will be noted that the necessity of throwing earth upon the sides of the excavation is here avoided, and that the ground adjacent to the latter is left clean and open to travel. The soil removed is only shoveled once, and that into the buckets, which remove it to the rear and empty it upon the completed masonry. The construction of the framework is such as to afford an excellent scaffold for lowering material to the masons, and also for starting and driving street piling wherever required. We are informed that the apparatus can be moved in from twenty to thirty minutes, and, when transported, leaves the ground behind it smooth and clear. The inventor adds that, in practice, the framework should be made three times the length to be excavated, and eight feet longer. For instance, if four elevating ropes are to be operated, excavating 32 feet, there will be, besides this distance, 32 feet in which the brick masons are at work, 32 feet for back filling, and 8 feet for natural slope of the back fall. There are three sets of buckets required, one set at each end of the tracks, and one in the bottom of the cut, being filled; so that when the empty set is lowered, all that is necessary is to transfer the hooks from them to the full buckets, leaving the empty ones, which are re-filled by the time the next set are brought from the rear and lowered. By means of a friction cone and brake, when the buckets are raised to the desired hight, they are stopped and held until the truck hooks are attached to extra bails, when they are lowered by the brake swinging naturally under the trucks.

Fig. 2



The apparatus, it is stated, will excavate 32 or 40 feet of earth quicker with 28 men than 50 men can perform the same work, throwing the soil up at the sides while it makes the fill in addition. It does not interfere with bracing, can be put together with bolts, and, when taken apart, can be applied to any sized cut, varying in width from 3 to 25 feet.

Patented through the Scientific American Patent Agency July 16, 1872. For further particulars address the inventor, Mr. William F. Shanks, sewer contractor, 174 Gray street, Louisville, Ky.

Amateur Railroading.

The Fredericksburg and Gordonsville Railroad Company has some seventeen miles of road completed from Fredericksburg, Va., to Parker's Store, which is not now operated. Some of the means devised by the people on the line to make use of the track, are thus described by the Fredericksburg *Ledger*. "A gentleman who is residing here, who is the owner of a small stationary engine, has attached to it a flat car on the Fredericksburg and Gordonsville Railroad, and with a molasses hogshead for his water tank, runs up and down the road between this city and Parker's Store for freight and passengers. One of those indefatigable geniuses peculiar to the Wilderness of Spotsylvania, becoming disgusted with the tardy movements of the railroad company, and fearful that his hoop poles, if kept much longer on hand, would not be merchantable, conceived the novel idea of hauling his poles to town on a flat car drawn by a young bull. The car was loaded with 100 bundles of poles. There was some difficulty in teaching the bull exactly what was expected of him. The *modus operandi* was as follows: The bull drew the car up the grades, and was then unhitched and mounted on a platform at the rear of the car, which then ran down grade without help. As soon as his bullship got the hang of the thing, he took it very kindly, dragging the car up the grades with great alacrity, and evincing the same pleasure in riding down that is shown by boys who drag their sleighs up hill for the pleasure of riding down again.

Chicory in Ground Coffee.

A preliminary examination of coffee for admixture is best made by gently strewing the powder upon the surface of cold water. The oil contained in coffee prevents the particles from being readily wetted by the water, thus causing them to float. Chicory, burnt sugar, etc., contain no oil, and their caramel is very quickly extracted by the water, with production of a brown color, while the particles themselves rapidly sink to the bottom of the water. On stirring the liquid, coffee becomes tolerably uniformly diffused without sensibly coloring the water, while chicory and other sweet roots quickly give a dark brown turbid infusion. Roasted cereals do not give so distinct a color.

A RUSSIAN CHINESE RAILROAD.—A special commission of the Cöoperative Society of Russian Manufacture and Trade has reported in favor of the construction of a railroad line between Russia and China, through Siberia. The road, with its connections, would traverse for the most part a thickly populated country, and open up immense cattle and wool growing districts which are now isolated from the business world. It would have to be built in sections, commencing with a fortified town in Western Russia and ultimately reaching Pekin.