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RAIL-ROAD NEWS.

Railroads of the United States.

By a circular from the Census Office at Washington, we learn that there are 10,814 miles of railroads constructed in the United States and 10,898 in the course of construction, The cost of the railroad in operation amounts to $348,000,000. The longest of these is the New York and Erie Railroad, which is 469 miles, with two branches sixty-eight miles in length. The cost was $23,580,000; $43,333 per mile. The State advanced $6,000,000 towards the work and afterwards released the company from the loan; that is, the State made a present to the stockholders of more than one-fourth of their stock.

In the year 1850 Congress passed an act, after a very protracted discussion, granting to the State of Illinois about 2,700,000 acres of public lands to aid in the construction of the Central Railroad. This magnificent donation is reckoned by the company to which Illinois has confided the building of the road, to be worth $18,000,000. This was the first instance in which the aid of the national government had been extended to a railroad project.

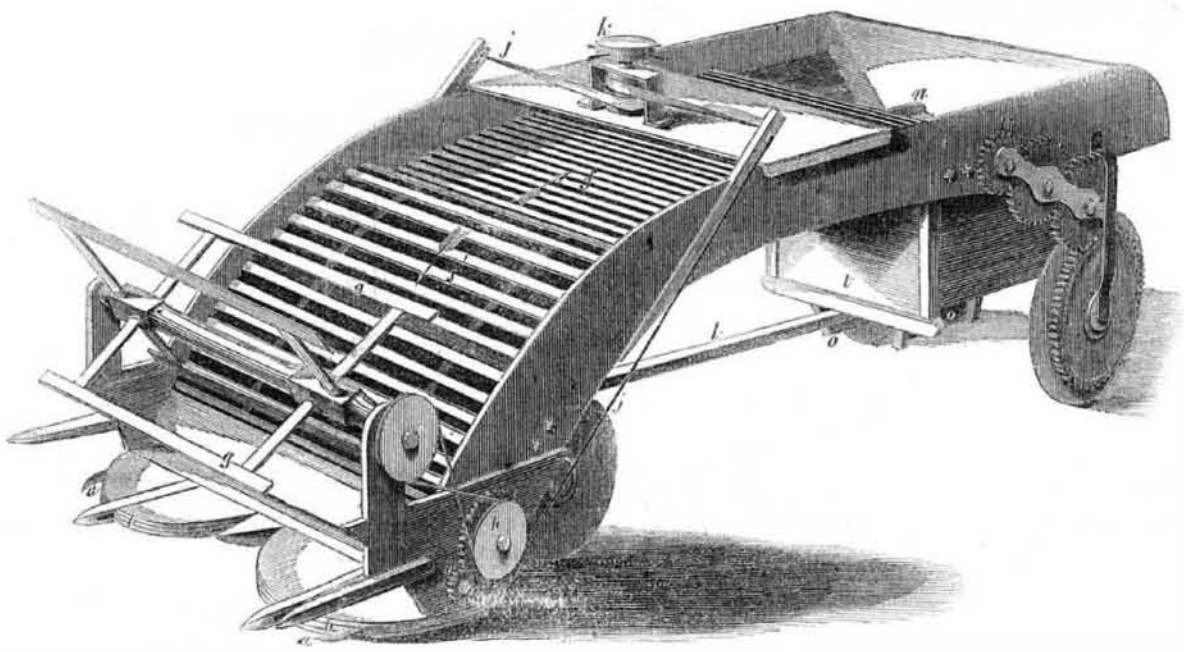
But since the above grant, innumerable applications have been made from all the new States for cessions of land for railroad purposes. Whether such further aid shall be extended is now a much agitated question in American politics. Bills are pending in Congress proposing to cede for these purposes about 20,000,000.

The rate of speed on our railroads is not so great as on those of England. The ordinary velocity of a passenger train is twenty miles an hour, but on some routes it is as high as twenty-eight and thirty miles. Express trains, on such occasions as the conveyance of the President's Message, frequently maintain for long distances as high a speed as forty-five miles an hour. And on one road, that between New York and Albany, forty miles per hour is the regular rate for all passenger trains.

The fares or rate of passage are not uniform. In New England, the average price per mile for the conveyance of passengers is under two cents; from New York to Boston it is two and four-tenths; from New York to Philadelphia, three and four-tenths; from Philadelphia to Baltimore, three and one-tenth. From New York to Cincinnati, the distance is 857 miles by the northern route, of which 143 miles are travelled by steamboat. The price of passage for the whole distance is $16 50, being slightly under two cents per mile. The lines between Baltimore and Cincinnati, soon to be opened, will be 650 miles in length, and the fare will be $13; that is, two cents per mile.

It is very difficult to form an estimate of the average expense per mile of building railroads in the United States. In fact, no average can be assumed as applicable to the whole country. The cost of the roads in New England is about $45,000 per mile; New York $40,000 and in some of the Western States, only $20,000.

JONES' PATENT HARVESTING MACHINE.---Fig. 1.

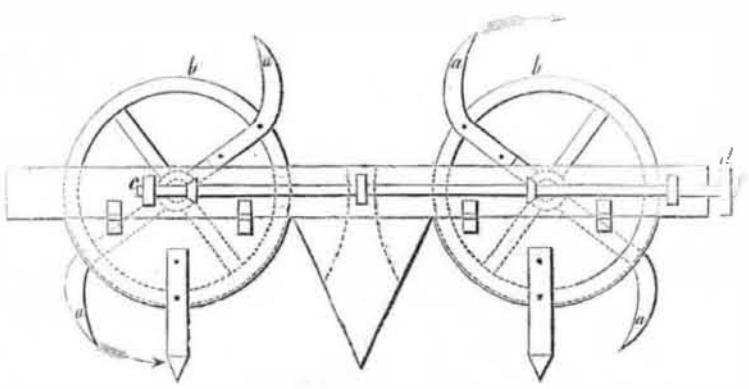


The accompanying engravings (figure 1 a perspective view, and figure 2 a plan view of the cutters) represent the Harvester of Mr. Wm. Jones, of Bradford, Orange Co., Vt., for which a patent was granted on the 8th of last July (1851.) The same letters refer to like parts.

The nature of the improvement consists, firstly, in the use of rotating cutters on vertical shafts, in connection with the reel which serves to bend over the grain previous to its being cut; also in the use of two endless aprons instead of one. Secondly, in the use of two steering wheels, instead of one, and an adjustable lever, for the purpose of raising and lowering the front part of the machine. Thirdly, in the novel manner of constructing the bundling apparatus so that the bundle shall be entirely separated from the grain running into the hopper previous to its being laid on the ground.

The cutters, *a a a a*, are attached to the fly-wheels, *b b*, and rotate in the direction shown by the arrows; these fly-wheels are secured to short vertical shafts, and receive their motion either by bands or gears from the horizontal shafts, *c c*, by the bevel gears, *d* and *h*.

Figure 2.



wards the back end of the machine. The bundling fly keeps the grain from falling into the bundling chamber, *t*, and may be operated by the hand or by the horse power.

The leaves, *o o*, of the bundling table are constructed on levers with circular ends, on which rests a treddle bar, and the table is operated by these, either with the foot or by power from the wheels.

OPERATION—As the machine advances, the motion is transmitted to the small wheel, *r*, to which is attached the shaft or drum over which the longer apron runs, the power or motion is thereby transmitted at the front part of the machine, and by the use of bands or gears, the motion may be communicated to the reel and cutters.

The reel bends down the grain and brings it under the action of the apron; the grain is then carried between the aprons nearly to the top of the curve, thence on the top of the longer apron to the place of bundling, and is deposited in the hopper, then by one revolution of the bundling fly, a sufficient quantity of grain for a bundle is dropped into the bundling chamber, and at the same time the foot of the operator being pressed down upon the treddle, the leaves, *o o*, of the bundling table are closed, and the grain is thereby secured in the bundling chamber, and when the foot is removed, the leaves open and the grain falls at once upon the ground and is ready to be bound into bundles. [The treddle levers are not shown.]

The frame work to which the cutters are appended, is to be secured to the machine under the reel, *g g*. *f f'*, on fig. 1, show the position of broad endless bands, which move in the direction as shown by the arrows; the longer one serves as a band for communicating the power or motion to the front part of the machine, for the purpose of cutting the grain. An adjustable lever (not shown) serves to elevate and depress the front part of the machine for the purpose of cutting the grain at any desirable height. The front, or steering wheels, are turned so as to vary the course of the machine by means of a lever, which is fastened to the axletree at one end and at the other end are attached the cords, *j j*, which run up on each side of the machine, and are wound in opposite directions around the roller, *k*, at the top of the machine; this roller can be extended to the hinder part of the machine and be operated by the person standing there. The bar, *l*, passes between the horses, and serves to press forward the front part of the machine, thereby lessening the strain on the sides. The bundling fly, *n*, and the hopper, S, are constructed of sufficient length to admit of the grain being laid straight, with the heads to-

Mr. Jones has taken measures to secure the improvements of the general arrangements here described, in addition to his previous patent. More information may be obtained by letter addressed to him as above directed.

Ozone---What is it?

The discoverer of ozone is Schonbein, the inventor of Gun Cotton. Ozone is produced when the electrical brush passes from a moist wooden point into the atmosphere, or when phosphorus acts at common temperatures on a moist portion of the atmosphere. To produce ozone, take a clean piece of phosphorus, about half an inch long, which has been recently scraped; put it into a clean quart bottle, at a temperature of about 60° Fahr., with as much water as will half cover the phosphorus; close the mouth slightly, so that if inflammation takes place, no harm may happen, and leave it. The formation of ozone will quickly occur, being indicated by the luminous condition of the phosphorus, and the ascent of a fountain-like column of smoke from it. In less than a minute the test will show ozone in the air of the bottle; in five or six hours it will be comparatively abundant.

Ozone is a gaseous body of a very peculiar smell; when concentrated, it has an odor like chlorine; when diluted, it possesses what is called "the electric smell." Atmospheric air charged strongly with it, renders breathing difficult, causes unpleasant sensations, and produces catarrhal effects. It is insoluble in water. It discharges vegetable colors like chlorine. It does not unite with nitrogen under ordinary circumstances, but it does when lime water is present. It acts powerfully on metallic bodies; it peroxidizes lead and silver very quickly. It is one of the most powerful oxidizers that has ever been discovered. It acts upon almost all salts, and is very nearly related in its effects to chlorine.

The Bangor Whig says that the ice in the Penobscot appears somewhat as it did six years ago, prior to the great spring freshet. The anchor ice has formed; and along the river is twenty-five feet deep, not solid, but compacted like a snow-ball. The channel of the river is not choked up as it was six years ago, but still the fact of there being so much anchor ice leads to some fears as to the effect of a spring freshet.