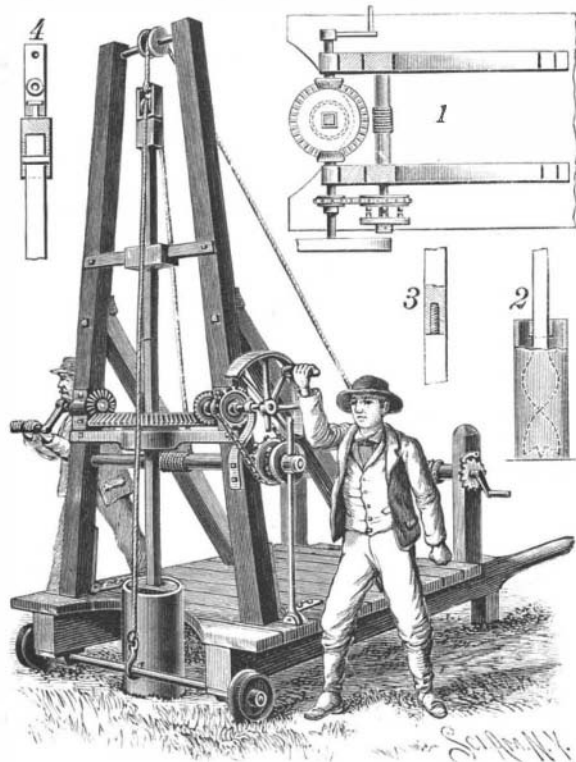


#### A POST OR POLE HOLE BORING MACHINE.

This machine is mounted on a hand truck, which may be readily shifted about on the ground for conveniently and rapidly boring holes for setting up posts or poles. It is a recently patented invention of Mr. John P. Morris, Charlotte, N. C. Fig. 1 is a sectional plan view illustrating the means of operating the auger shaft, Fig. 2 showing the auger and its inclosing cylinder, Fig. 3 a connection between the auger shaft sections, and Fig. 4 the upper end of the auger shaft. The auger shaft is preferably made in sections screwed together, according to the depth of the hole to be made. The shaft is square and passes through a collar in an upper cross bar of the main standards, while on its lower end a cylinder is mounted to turn and slide, this



MORRIS' POST OR POLE HOLE MACHINE.

cylinder supporting the ground loosened by the auger and also forming a temporary wall for the lining of the hole. On the upper end of the auger shaft is a cap in which turns a block carrying a pulley, over which passes a rope with a hook at one end engaging the truck axle or other fixed support, while the other end of the rope winds on a windlass, whose shaft is journaled in the main standards. A clutch on the latter shaft is adapted to be engaged by a clutch sprocket wheel connected by a sprocket chain with a sprocket wheel on the driving shaft, the bringing of the clutch into engagement with the sprocket wheel rotating the shaft of the windlass and drawing upon the rope to force the auger into the ground. The driving shaft has on its outer end a hand crank, and on its inner end is a beveled gear in mesh with a gear wheel having a square central aperture, through which passes the auger shaft, as shown in Fig. 1, there being also a similar oppositely arranged bevel gear wheel and shaft with crank handle to be turned by a second operator. In this manner, by the turning of the crank handles, a

rotary motion is given to the auger and it is at the same time forced downward into the ground. The pulley block on the upper end of the auger shaft is connected with a rope passing over a pulley at the top of the standards and extending to a windlass on the rear of the truck, by operating which the auger shaft and its cylinder, with the loosened earth the latter contains, may at any time be lifted out of the hole and the cylinder emptied. The standards are connected with the truck platform by hinges, and may be folded back upon the truck when the machine is moved from place to place.

#### The New York Elevated Street Railways.

The elevated railroads of New York City carried 221,000,000 passengers during 1893. Twenty new engines were ordered during the year. The number of passenger coaches employed in the service is 1,116, and 75 new ones were added during the last four months. Improvements in the structure continue to be made, and the light 50 and 60 pound rails are being replaced by 90 pound rails. The locomotives consume over 200,000 tons of the best white ash anthracite per year. The coal makes no smoke. Over 3,000 trains per day are run, the exact number being 3,300. The employes number 5,000, and all are paid by the hour. Twelve hours is the longest time any man is required to work per day on the roads. The maximum pay is \$3.50 per day. Engineers earn \$100 per month.

#### COTTON GINNING MACHINERY AT THE FAIR.

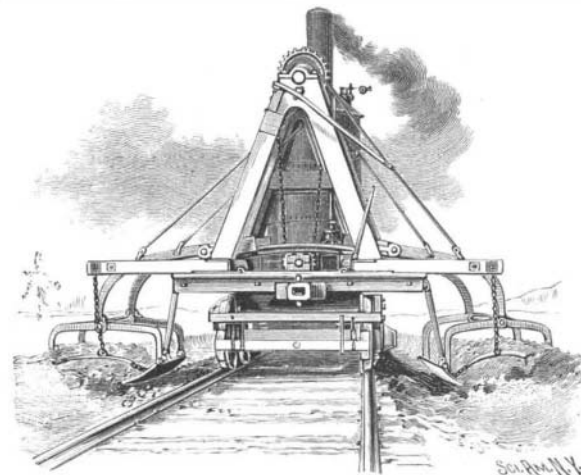
The exhibit of the Eagle Cotton Gin Company, of Bridgewater, Mass., consisted of a battery of gins, and illustrated a complete system of handling cotton from the wagon to the press, the machinery and apparatus embodying all the latest improvements in this line. The company last year celebrated its sixtieth anniversary, the business having been founded in 1833, and during this long period of sixty years its position in the front rank of manufacturers of machinery and appliances for the preparation of cotton for market has been unquestioned. It has always been among the first to introduce and thoroughly test improvements designed to reduce labor and add to the efficiency of the machines, while maintaining their simplicity and durability. Their battery gins economize space, are always under easy control and have self-oiling and self-adjusting boxes. The seed-cotton elevator draws the cotton directly from the wagon or the cotton house and deposits it in receptacle boxes of large capacity, from which it passes into a short horizontal feeder which regulates the quantity to the gins evenly and level. From the start until the close of the bale every gin is doing its full duty. The elevator has a large screen capacity and thus serves as an excellent cleaner for the cotton. The lint conveyer has an incased canvas apron running over large rolls, and is placed back of the condensers which are attached to each gin as in ordinary ginning. Canvas carrier aprons are driven by link-belt chain, and thus are positive in their movements, there being no possibility of clogging, as air pressure is not depended upon for the conveyance of the lint from the condensers to the press. The company has for the past three years manufactured a special long staple hulling and separating gin, which has proved a great success.

Six awards, with medal and diploma, were granted

the company, for—1. Apparatus for elevating seed cotton to gin; 2. Eagle Eclipse hulling gin; 3. Cotton gin feeder; 4. Lint cotton conveyer; 5. Cotton gin; 6. Complete system of handling cotton from the wagon to the press.

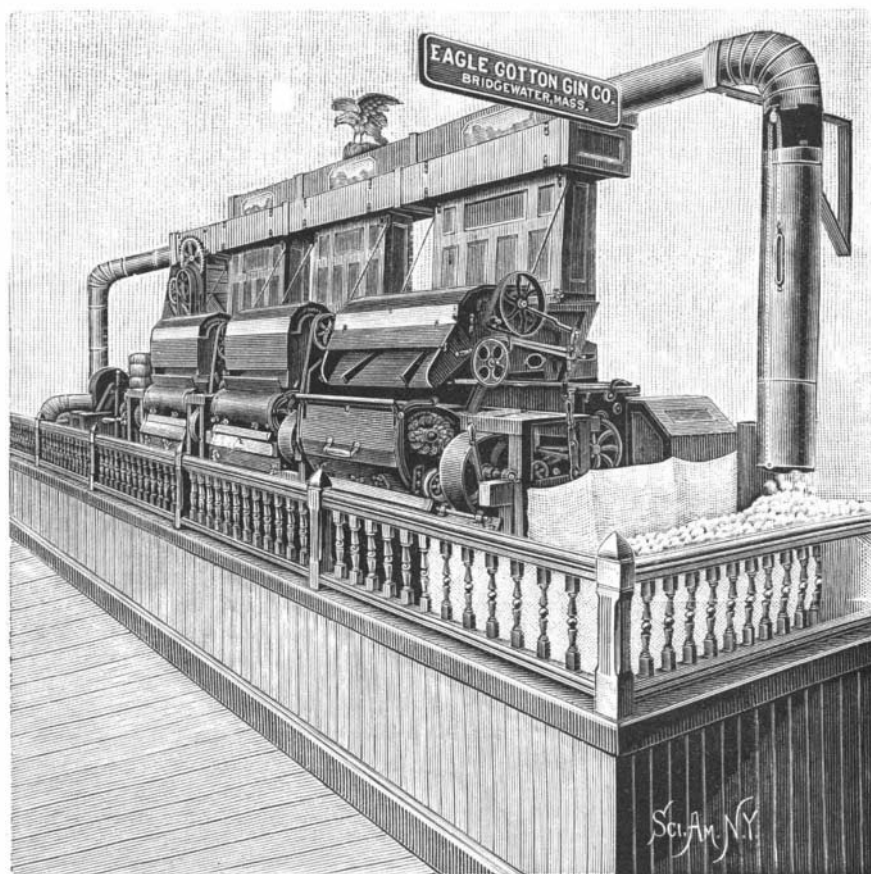
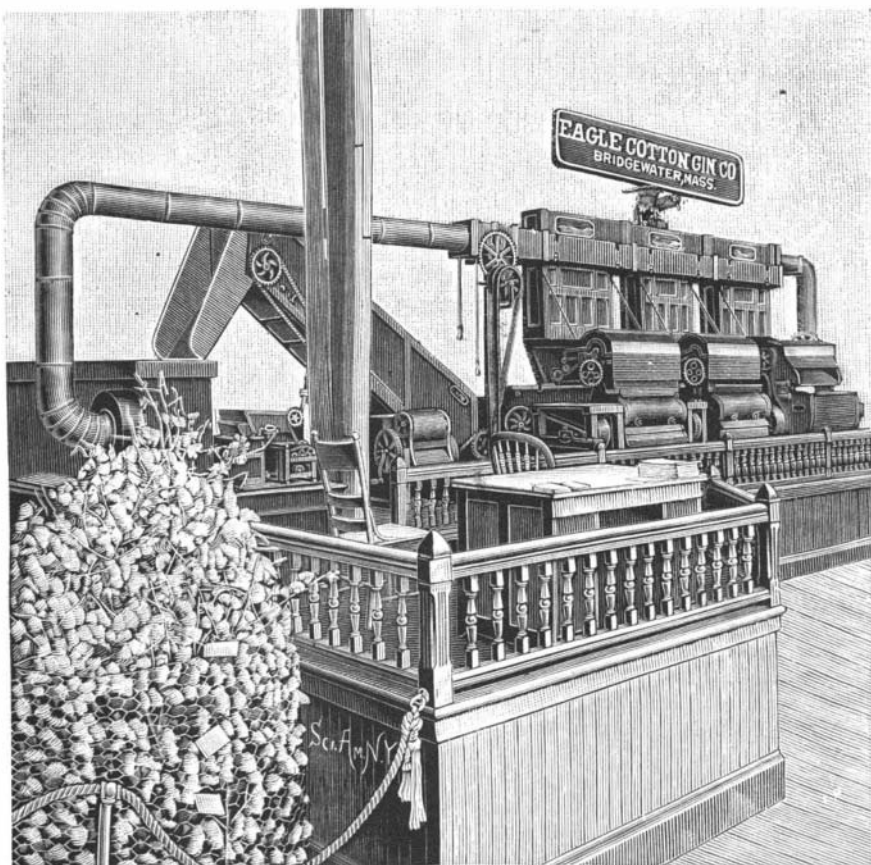
#### A DITCHING MACHINE FOR RAILWAY SERVICE.

This is a machine adapted to form a ditch on one or both sides of the roadbed of a railway, the ditching mechanism being operated by engines on the rear end of the platform car on which the apparatus is arranged. The improvement has been patented by Mr. William L. Harvey, Stanberry, Mo. The front ends of the sides of each of the scrapers are connected by chains with a draught bar connected with a draught beam



HARVEY'S DITCHING MACHINE.

pivoted on the car, and held in place by a pivoted brace, to permit of swinging the draught beam inward when not in use, the rear ends of the scrapers being also similarly connected to a draught beam. The inner side of each scraper has a pivoted wing, to prevent dirt from falling on the track, and is connected with a link regulating the depth the scraper is to work, while the outer side has a pivoted wing adapted to give the desired slope to the side of the ditch. Each of the scrapers is suspended from a shaft connected with levers pivoted on swivel blocks, sliding transversely in guide-ways on the car platform, the front and rear levers of each scraper having each a clevis from which a rope extends up to a hoisting drum on a longitudinal shaft journaled in standards. This shaft is actuated by a sprocket chain from the main driving shaft, operated by engines of any approved construction on the rear end of the car. As the car on which the apparatus is arranged is pushed forward by a locomotive, the scrapers dig into the ground until they are full, the car being intermittently moved forward only about the length of the scrapers at a time. The operator then, by means of a clutch mechanism, connects the hoisting drums with the driving shaft, whereby the scrapers are lifted, and the car is drawn by the locomotive to the place of dumping, where the dirt is automatically discharged. After the scrapers are loaded and raised, they may be moved inwardly on the top of the car, to permit of passing through tunnels, over bridges, etc. For the purpose of spreading the dirt at the place of dumping, a special form of spreader is provided for attachment to the machine in place of the scraper.



THE WORLD'S COLUMBIAN EXPOSITION—EXHIBIT OF THE EAGLE COTTON GIN CO., OF BRIDGEWATER, MASS.