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## Rail-Road News.

### Profits of Railroads.

From a list in the Boston Advertiser of thirteen Railroads and their branches, in Massachusetts, with 238 miles of double track, 375½ of single, costing in the whole $38,812,689, it appears that more than half the companies paid dividends in 1850, from the net profits of the year, 8 per cent.; and the whole exceed 7 per cent.; each having retained a greater or less reserve; while, in England, the past year, no company paid more than 5 per cent, with the exception of four, which paid respectively £7, 14s per cent, 6 per cent, 5½ per cent. and 5¼ per cent. Six other companies paid 3 per cent.; several from 1 to 3; and a number nothing. The Great Western with a capital of nearly £14,000,000, 264 miles long, paid 4 per cent.; the London and South-Western, capital £8,390,000, 4 per cent.; the South-Eastern and Greenwich, capital £9,460,000, 3½ per cent.; the Midland and Bristol, 496 miles, capital £15,450,000, 2½ per cent.; the Lancashire and Yorkshire, 260 miles, capital £11,488,000, 2 per cent.

### Tunnel through the Green Mountains.

The friends of the Troy and Greenfield Railroad appear not to be discouraged by the failure of their attempt to get the State credit for tunnelling Hoosac Mountain, but are proceeding as rapidly as their means will permit with the execution of the work. They intend to commence the work of tunnelling on the east end of the mountain, so as to demonstrate to the next Legislature if possible, the feasibility of the project. A writer in the North Adams Transcript, speaking of the road, says:—

"The work is rapidly progressing from Troy to Hoosac; and the heaviest of the grading is nearly finished from Adams to Pownal. If all the stockholders meet their assessments promptly, so that there be no delay on that account, the cars will run from Adams to Troy by the 1st of January, 1852."

### Coal Fields of Pennsylvania.

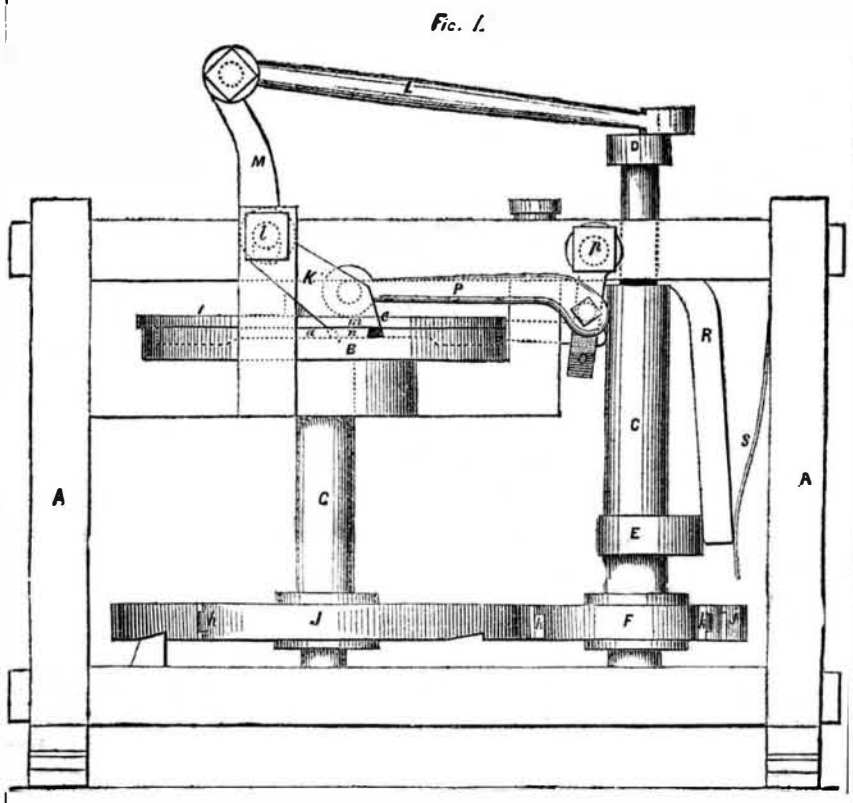
Mr. McGinnes, an able mining engineer, of Pottsville, Pa., has asserted and advanced the theory long ago, that under the red ash coal seams, the large white ash coal seams would be found at workable depths. This theory has been demonstrated lately by boring. The Schuylkill coal basin is now held to be three times more valuable than it was a short time ago.

### A False Island.

An island has been placed on the charts in lat. 33° 19′ N., lon. 42° 39′ W., which, Capt. W. G. Currier says, is not to be found. He has sailed over the island on the nautical charts twice. No island was ever seen there.

## ISON'S IMPROVEMENTS IN MACHINERY FOR MAKING SPIKES AND NAILS.

*Fig. 1.*

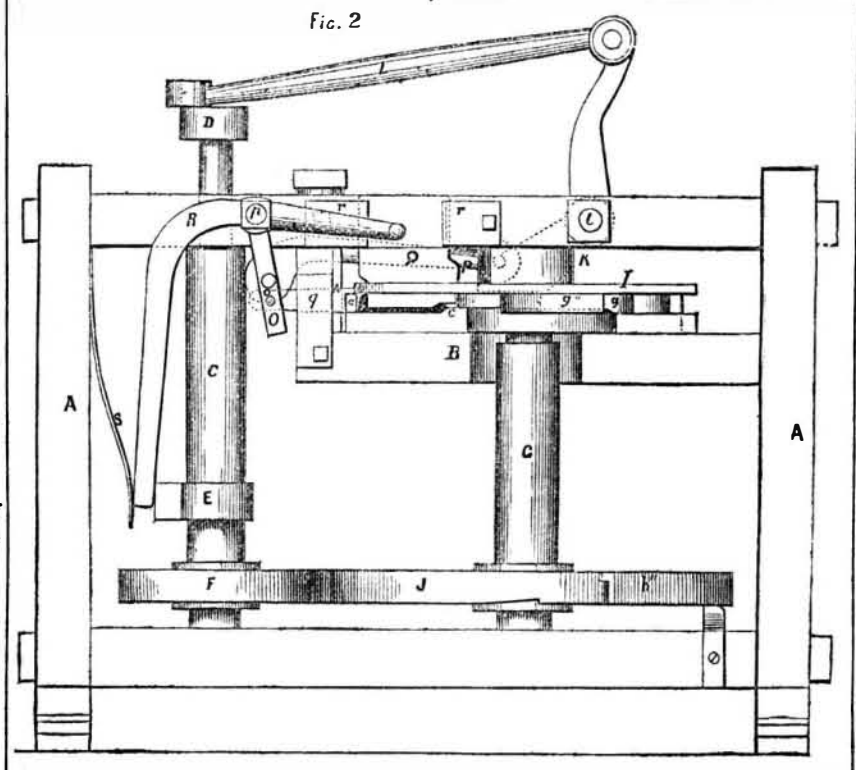



The improvements in machinery which the accompanying engravings illustrate, is the invention of Mr. Mark M. Ison, of Etowah, Cass Co., Ga., who has taken measures to secure a patent for the same. Owing to the number of cuts required to illustrate this machine, two of the figures, with the description, are contained on the Fourth Page.

Fig. 1 is an elevation of that side of the machine where the iron is cut off and pointed. Fig. 2 is an elevation of the opposite side when the heading is performed and the spike or nail delivered from the machine. Fig. 3 is a plan view, and fig. 4 is a plan of the table and carrier. The same letters refer to like parts.

The invention consists in a curved horizontal table having a hollow space within it, in which works a revolving cam or carrier, hung on a shaft concentric to the table. The iron plate from which the spikes or nails are to be made is fed along the upper surface of the table, is cut off in strips of suitable size across the edge of an opening in the top of the table, by a vibratory shear arm working above, and the pointing is performed between the said shear arm and the table. The cam mentioned, which revolves and becomes stationary at regular intervals, is then made to carry the spike round within the hollow space in the table, and allow it to stop under a holding die, which moves up and down in a line at right

*Fig. 2*




angles to the face of the table and the motion of the carrier. By a suitable movement, this die is then brought down upon it to hold it while a heading tool moving nearly in a line with the spike is made to act upon and form the head of the spike or nail. A A is the framing; B is the stationary table consisting of a plate of metal of the form of a segment of a circle, a little larger than a semi-circle; it has a projecting rim standing up from its face nearly all along the circular part of its face, and upon this rim a plate, I, is secured, leaving a space between it, and the lower part of the table. At a distance from the inside of the rim, equal to the intended length of the spike before heading; there is a slightly raised boss, *c*, presenting the form of a segment of the frustum of a cone, the inclination of its periphery being the reverse of the inclination or bevel required for the point of the spike, is intended to form one side of the said point. Through the plate, I, there are two openings, one, *b*, of considerable size, shown in fig. 3, and another, *d*, which is merely a slot through which the holding die passes. The edge, *e*, of the opening, *b*, must be steeled, as it is intended to form one cutting edge of the shears which cut off the spike. C is the main shaft which is hung in suitable bearings in a vertical position; it carries at its upper end a crank, D, whose wrist, *f*, has a very short throw, for operating the vibrating shear arm; it also carries a cam, E, for operating the holding down die, and a friction wheel, F. G is a shaft hung in bearings parallel to C, it passes through the centre of the table, B, carrying the three armed cam or carrier, H, the three arms, *g g′ g″*, of which fit in the space between the bottom of the table, B, and the upper plate, I; the front faces of the arms are nearly radial. The shaft, G, also carries a friction wheel, J, whose periphery is provided at three equi-distant points with small projections or teeth, *h h′ h″*, at the back of each of which the periphery is slightly recessed. One part of the periphery of he wheel, F, corresponding in length with each space on the wheel, J, between two of its teeth, is more prominent than the other part which is recessed from *i* to *j*, in fig. 3, but has a small tooth, *k*, projecting near to *j*; the prominent part of the periphery of the wheel, F, when in contact with the periphery of the wheel, J, will, by the revolution of the main shaft, C, cause it (the wheel) to move on its axis, by reason of the friction of contact, but the less prominent or recessed part passes without moving it; the starting of the wheel, J, being accomplished by the tooth, *k*, coming in contact with *h h′* or *h″*. K is the vibrating shear arm attached to a deep socket working on a centre pin, *l*, secured in the frame; its edge, *m*, or the whole arm is steel, forming, with the edge, *e*, a pair of shears; the under face of the arm is provided with a bevelled projection, *n*, at one end, which comes immediately over the periphery of the conical surface, *c*, and when the shear arm is brought down, presses or forms the point of the spike after cutting it off. The shear arm receives the necessary motion by means of a pitman, L, connected to the wrist, *f*, of the crank, D, and to an arm or lever, M, on its own socket. N is the header, which is attached by a pin, *o*, to a lever frame, O, hung on a stationary pin or centre, *p*, secured in the frame; it works through a guide, *q*, in the frame, and receives the necessary motion at the proper time through a rod, P, connecting the lever frame, O, with the vibrating shear arm, K. Q is the holding down die, which is of suitable form on its under side to hold the spike secure upon the table while the header is made to act upon it; it slides in guides, *r*, and is brought down upon the spike at a suitable time, and held down by means of a bent lever, R, having its fulcrum on the pin, *p*; one end of this lever is inserted in a suitable recess in the die, and the other end bears upon the cam, E, being held against it by a spring, S.

The operation of the machine is as follows:—Rotary motion is given to the shaft, C, by any convenient means, in the direction of the

[Continued on the Fourth Page.]