

**Rotary Steam Engines.**

I was recently in Cincinnati for the purpose of getting a pair of my rotary engines manufactured for my own use, at Mitchellsville, to be applied to a merchant flouring mill, and also one for a gentleman of Grason County, Texas, for a saw-mill. But failing to make any satisfactory arrangements to get them made, I procured reciprocating engines for the purposes specified. Embarking in the flouring mill business (I think permanently) I shall probably abandon all further attempts to introduce my plan of rotary engine. Could they be properly made, and the facilities for their manufacture be of the best order, and well systematized, their cost would be less than that of other engines of equal power, and for many purposes I would strongly recommend them. The want of capital, to thus establish their manufacture, is an effectual barrier to my further progress in the business.

Being well satisfied that my rotary is the world's last hope, and that any material deviation from my plan, as at present matured will prove abortive, I feel a strong sympathy for those, not in possession of my experience, who are attempting to invent and mature a rotary steam engine. They will have much to learn, and their knowledge will cost them too dear. An attempt to excel, materially, the reciprocating engine, in point of economy, by substituting a rotary, is chimerical. I claim for my engine cheapness, compactness, and uniformity of action, and economy in the use of steam, equal to the reciprocating engine. Its objectionable features, in its present state of maturity, are not of any prominent character; the most obvious of which is its liability to derangement by expansion and contraction of metal, and the yielding or displacement of adjusting screws employed in maintaining the steam wheels in their proper position. To a person experienced in running one, these difficulties are of small moment.

J. A. STEWART.

Mitchellsville, Tenn., March 9, 1853.

**New Route Proposed.**

Capt. Synge, of the Royal Engineers, has laid a proposition before the Geographical Society of England for a new East India route by way of the St. Lawrence and the great lakes, with their extension chain including Rainy Creek, Lake of the Woods, and Winnipeg, with the rivers which fall into the latter lake on the eastern slope of the Rocky Mountains; thence the route continues westwardly to Vancouver's Sound. There are now on this route fifteen hundred miles of inland navigation, soon to be extended four hundred miles by the construction of the Saut St. Mary Canal; and the same may be extended by occasional artificial connections almost to the base of the Rocky Mountains, which are represented to be at that point but fourteen hundred and fifty eight feet above the level of the sea. The advantages claimed are, that it is three thousand miles nearer than any other mail route to Australia; the inland portion lies entirely within British territory, and instead of requiring sixty or eighty days for transit, would only require forty to fifty.

**Missouri Railway Law.**

The law authorizes any number of persons, not less than six, to construct a railroad in that State.

It fixes the gauge, or width between the rails, of all the railroads, at 5 feet 6 inches.

It exempts all existing railways from the jurisdiction of Justices of the Peace, from and after the 24th of February.

It authorizes any County Court or City Council in the State, to subscribe to any railway, and to pay their installments by an issue of bonds, or by special taxation. And they may put in their swamp and overflowed lands, internal improvements and other funds.

Any county or city levying a railway tax, are to issue receipts to the tax payers, which are assignable, and convertible into stock of the company to which subscription is made.

The law contains many other provisions important to Missouri railway enterprises.

**Agricultural Machinery.**

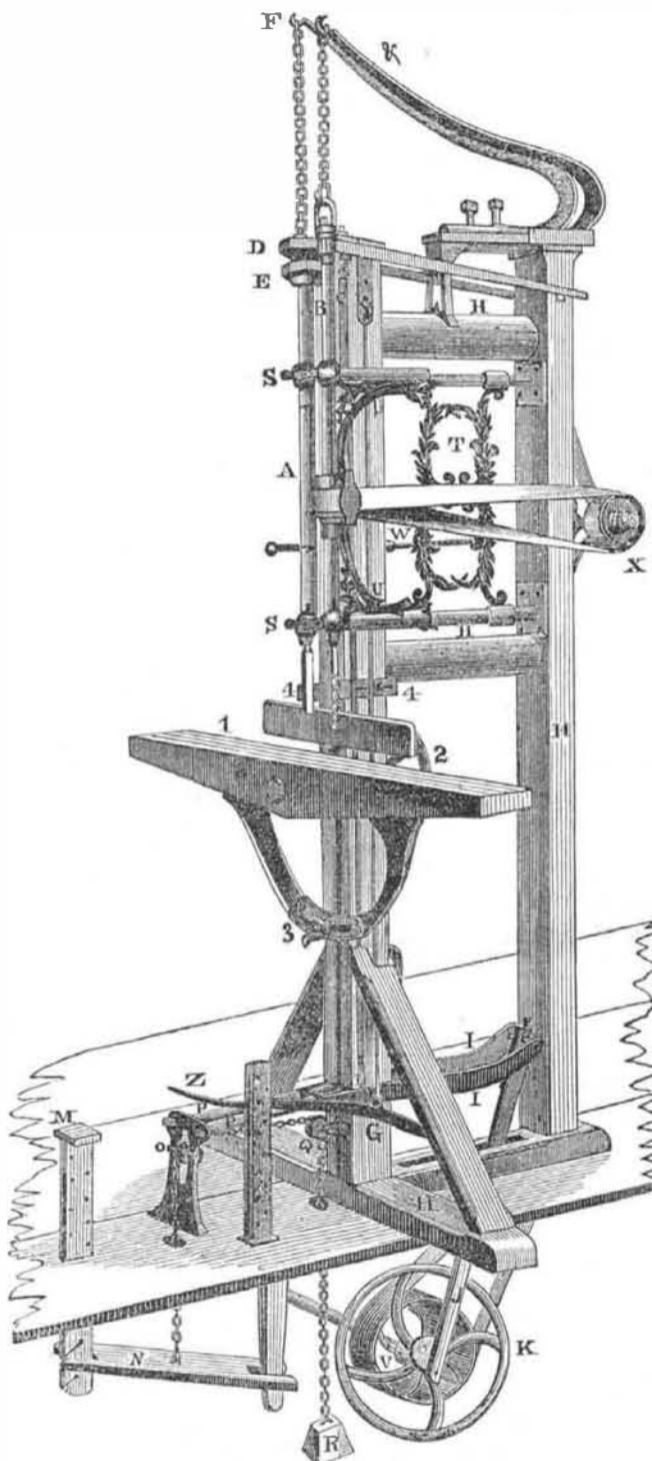
As an instance of the improvement in agriculture now in progress, it may be mentioned that the makers of steam engines for agricultural purposes in England, have in some cases

increased eight-fold within the last three years. One house made in 1848 only 15 engines, but in 1851 finished no less than 294. The same results hold good with respect to other improved agricultural implements.—One maker turns out 5 threshing machines a week; another who made only 56 machines in 1849 and 1850, turned out 192 in the last 21 months.

A meeting of the St. Andrews and Quebec Railway Co. was held at London on the 24th ult. The Directors' Report was regarded as satisfactory and adopted.

A joint stock company has been formed to work the Middletown, Conn., silver mines. Its capital is \$60,000. The mines are said to be very rich.

**OTIS' MORTISING, BORING, AND HUB-MORTISING MACHINE.**



The above is a perspective view of Otis' Mortising and Boring Machine in combination. A represents the mortising or chisel shaft, B, the boring or auger shaft.

The mortising is connected with the power, and operated by it in the following manner:

The side rods, C, one of which is seen in the engraving is connected with the long yoke, D, at the top of the chisel rod, by an adjustable joint, with jam nuts to hold all fast together and keep the side rods of equal length. The two yokes, D and E, are connected together by short eye bolts, which give the yokes full play, yet causing the chisel rod, yokes, &c., to move together in forcing the chisel down into the wood, and to retract the same by the help of the steel spring, F, there is a provision likewise for diminishing the friction between them.

The rods, C, are connected at the lower end to a short slide, G, which plays in a groove in the bottom of the frame work, H H H H, by a screw. The slide, G, has a steel pin in it which plays in a groove in the movable levers, I I, that are connected by the pitman, J, to the balance wheel, K, the balance wheel causing the levers to make a full stroke at every revolution, but not operating

on the chisel rod because the centre of the pin in the sliding fulcrum, L, is cut away, thus causing the centres of motion to be directly over each other, and of course giving no motion to the chisel rod. To bring the chisel rod into play the foot is pressed down on the treadle, M, which carries down the lever, N, and the chain that is connected to it that passes over the little chain pulley, O, to the sliding fulcrum, L, thus causing the sliding fulcrum with the movable lever, I I, to slide forward on the rods, P P, over the steel pin in the slide, G, and of course carrying down pin and slide rods and chisel rod with it, and allowing the chisel to return again to the same level at every stroke; mortising, of course, deeper and deeper as the levers slide or the resistance is moved further from the fulcrum and nearer the power. The sliding fulcrum is brought back to its former position by the chain passing from the sliding fulcrum over the chain pulley, Q, to the dead weight R, when the pressure of the foot is removed, thus bringing it into full stroke, or five inches, or stopping the chisel at the option of the operator. The chisel rod passes through the guide bolts, S S, the balls of which are lined with babbitt metal. Said guide bolts are

connected together by the ornamental brace, T, to which the boring brace, U, is attached, thus causing all the upper work to move in or out together, for any thickness of stuff, and also keeping the back and front boring shafts the same relative distance from each other.

By this arrangement the chisel and auger are always in range, so that the chisel follows the auger, which in mortising hard wood is very desirable. They are held in any desired position by thumb screws not seen in the engraving.

The boring shaft is operated by a belt coming up from a pulley, T, through friction pulleys, to the short shaft at the back of the machine, on the end of which is a pulley not seen in the engraving. This short shaft hangs in a brace attached to the ends of the guide bolts, and moving in and out with them.—This pulley is made a tight or a loose pulley by a clutch, the shifter of which is seen, at W, thus causing the pulley at X, with its belt running to the boring shaft to revolve at pleasure. The boring shaft is brought down by the rod, Y, and the treadle, Z, and retracted by the spring, &, and operates with a speed and precision unknown in any other kind of boring machines. The bed, 1, in which the stuff is bored or mortised, is adjustable, being raised or lowered at pleasure for any width of stuff, by the hand wheel and bolt at 2, or made to work on any level required by the bevel sweep and nut at 3. The stuff is held back against a guard, and held down by regulating screws at 4 4.

A graduated scale of prices is charged according to what sort of machine is required, for the boring and mortising apparatus can be had separately, as well as with or without the hub rigging, and also adapted for hand work or horse power.

Full particulars of which can be had on application to Otis & Cottle, Syracuse, N. Y.

**Treatment of Scarlet Fever.**

Dr. Hereford, of Washington, in a communication which appears in the "Alexandria Gazette," thinks that too much physic has been an error in the management of scarlatina. He says, during thirty years' practice, he has found that the less active medicine he used, the greater was his success in the treatment of this disease. He disclaims any motives of vanity or self-interest in his statement. His treatment is described as follows:

"In conclusion I will say, my treatment of scarlet fever is very simple. Open the bowels regularly every day with some mild aperient medicine, such as castor oil, senna, &c., and keep the patient at rest and comfortably warm; sponge the surface with tepid water two or three times a day; while it is hotter than natural admit fresh air; live on a bland diet, such as a cupfull of arrowroot, several times a day; toast water for common drink. Gargles made of strong sage tea, honey, and alum, or borax, may be used from the commencement, if the throat is affected."

**Cure for the Bee Moth Ravages.**

The "Mobile Tribune" says:—"Such of our readers as are engaged in the bee culture will be glad to learn that a remedy has been discovered which effectually prevents the ravages of the bee moth. The frequent and serious injury caused by this pestiferous insect, has deterred many persons from entering into the business of raising bees, more especially as in some localities the ravages have been so great as nearly to destroy both bees and honey. The plan is this:—split joints of cane through the centre and arrange them on the four sides of the hive, with the split side resting on the platform. The moth, instead of depositing its eggs under the edge of the hive, will lay them under the split cane. From these depositories they may be removed and destroyed as often as necessary with little trouble. A friend informs us that he knows the plan has been tried and found entirely successful."

Georgia is a model State. She has 860 miles of railroad in operation. Her credit is of the highest order, her six per cent. bonds selling at the highest premium, and she now gives notice of her readiness to pay the interest on her bonds for the next six months in advance.