

New Inventions.

New Way of Securing Pitchfork Tines.

Mr. George Ransom, of Chester, Middlesex, Co., Ct., has invented and taken measures to secure a patent for an improvement in the construction and mode of securing the tines of pitchforks. The plan is to have the metal shank of two tines made with an oblong slot in it, and to have a screw cut upon its outside fitting into a socket in the handle. A collar or ferrule, having a thread cut on its interior, fits over the metal shank, which by fitting around and working like a nut on the shank, works up close to the shoulders of the tines, making the slot spoken of small or large. To make a four tine fork, a set of double tines which are formed with a square shoulder, is inserted in the slot, with the shoulder fixed firm in the same, when the ferrule is screwed up, the slot closed, and the tines secured firmly by the said ferrule, into the socket of the handle. For a three tined fork, the centre tine projects from the middle and the metal shank with the slot in it, is just a continuation of the tine, and made like the other we have described. The metal shank with a slot in it, and a screw to be secured by the collar or ferrule, are the new features of this improvement.

New Cloth Folding Machine.

Mr. J. Birkett, of 180 Essex street, this city, has taken measures to secure a patent for an essentially new improvement in machines for folding and measuring cloth, of which we think not a little highly. It is the most simple machine of the kind, we have yet seen. It consists of a table hung upon a lever with a weight at the end of it, to press it (the table) upwards; on this the cloth is folded or laid down by two arms with a broad blade on each, which have a vibratory motion moving in an arc by a simple crank motion. These arms extend up from the side and across the top of the table, in such a manner, that at the end of their stroke, each blade takes a lap of cloth and pushes it between the table and a stationary lip which holds it down in the fold on the table. The cloth is fed in from a roller above, and the vibratory arms spoken of, lay the cloth in folds just in the way that a person would stretch out one hand to lay a fold on the table, to which the length of the arms is able to stretch, and then lap in the other close to the breast. The folding motion is a parallel one, derived from a rotary shaft and is altogether exceedingly simple.

Porter's Self-loading Gun.

Mr. Porter, residing at or near Memphis, has constructed a most novel and curious fire-arm, called the "Self-loading Gun," in which the simple operation of "cocking" to shoot by the assistance of valves, or equivalents, separates from the magazine attached to the gun the materials for each load—loads the gun. It is capable of being discharged forty times in a minute, and shoots a ball with tremendous force, and with usual exactness. The editor of the Memphis Enquirer, after careful examination and repeated experiments, is satisfied that nothing which can bear comparison with it in efficiency has been discovered, and that no "revolver" of any kind approaches it in destructiveness, or in the adaption of the means of safety against accidents in their use.

Steambeat Coal.

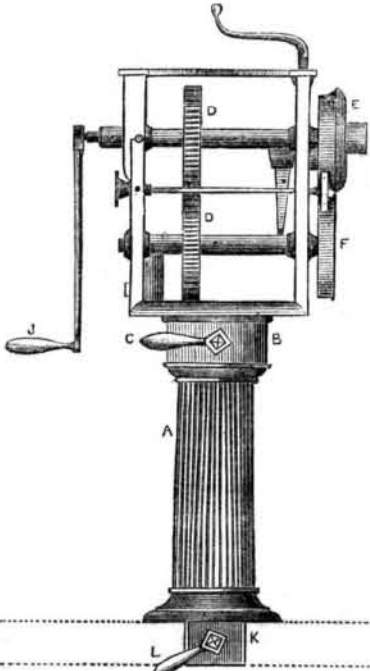
Messrs. Nathan Thompson, Jr., and James Thompson, engineers, have made careful experiments with different kinds of coal in the Collins' line of steamers, and have reported in favor of what is termed the "Dauphin Rattling Run." It has a high evaporative power, ignites quickly, burns with a clear bright flame, leaves little soot behind, and does not cake. In comparison with the Maryland Mining Co.'s Coal, it requires 75 per cent. less labor of the fireman to attend to it.

We see it stated in some papers that a young man in St. Louis, has discovered a new way to make gas from the atmosphere. This light when it comes out will astonish the donkeys.

Improvement in Tinsmiths' Wiring Machines.

This is an improvement on the posts of Wiring Machines, by Mr. A. W. Whitney, of Woodstock, Vt., which makes the machine more convenient and useful. All the parts are the same as the one illustrated in No. 35, Volume 2, Scientific American, except the post or pillar, which is made to answer a whole set of tinsmith tools. Fig. 1 is a side elevation. Fig. 2 and 3, are sections. A is the iron holder pillar, it is secured on the bench represented by dotted lines. The projection, K, on the lower end of the post is fastened in a socket in the bench by a screw,

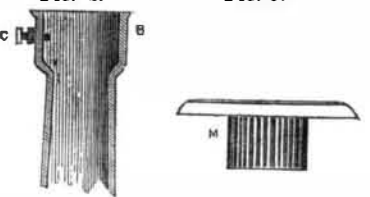
FIG. 1.



L. E F are the two steel faced rolls; D D, are the two wheels, J is the handle; B, is the shoulder collar; C is the handle to unscrew the machine and to disconnect it from its pillar, A, and fig. 3 shows the lower projection of the frame of the machine, which is a round fluted post fitting into the outside collar, B, of the pillar, A. It enters the collar, B, which is its socket, and the set screw, C, fastens the machine by entering between the flutes, and retaining it firmly in its socket. This also allows the machine to be turned round in any direction for convenience and set with the

FIG. 2.

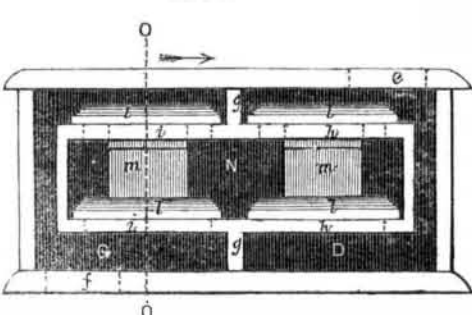
FIG. 3.



screw, C. This is the new arrangement, and it will be seen how easily one pillar answers for different machines, without disconnecting it with the bench.

More information may be obtained by letter addressed to Mr. Whitney.

FIG. 2.

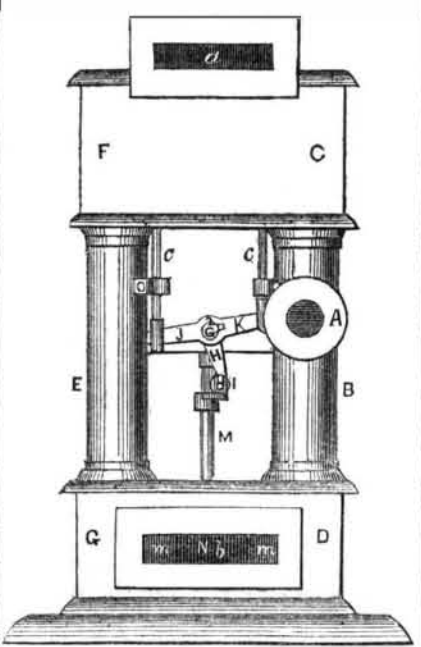


Balance Slide Valves.

This is an invention of Mr. William Lawton, No. 139 Avenue D, this city, who has taken measures to secure a patent for the same. Fig. 1 is a front elevation of the steam and exhaust chests, with pipes connecting them, and valve gear attached. Figure 2 is a detached front elevation of the lower steam and exhaust chests with the front cover removed, showing the interior chamber and the valves in their working position. Figure 3 is a transverse section taken at the line O O, fig. 2, and viewed in the direction of the arrow. The same letters refer to like parts.

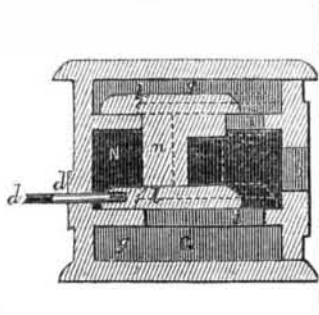
This invention consists in the employment

FIG. 1.



of a double slide valve, formed of two slides connected by an arm between them, which double valve is applicable for the purposes of inlet and exhaust. A is the branch pipe from the boiler, connecting the pipe, B, to steam chests C D. E is a pipe for the exhaust, connecting the two exhaust chests, F G. These chests are separated by partitions; a is an upper and b is a lower inlet and outlet port, which may be suitably connected to the top and bottom of the steam cylinder. The slide valves are in the chests, and may be worked either vertically or horizontally. The valves in the upper chests are moved by a vertical up and down motion, while the valves in the lower chests are moved by a horizontal motion—out and in. The valves, fig. 2 and 3, only show the out and in motion of the lower valves. The manner in which these are worked is peculiar,—H is a rocking arm, which gets its motion from a rod connected to the main shaft. This arm gives a vertical motion to the upper valve rods, C C, and gives an oscillating motion to a vertical shaft, M, which, as it were, swings in its seat; G<sup>2</sup> is a rocking shaft placed horizontally, transversely, between the pipes, E B, fig. 1, and supported in proper bearings; a rocking beam, J K, connects this shaft to work the upper valves vertically, and

FIG. 3.



a beam of the same kind is connected horizontally to the lower valves (not seen) in fig. 1; it will, therefore, be observed that two motions to work the valves are derived from the rocking shaft, G<sup>2</sup>, driven by the oscillating arm, H I. The lower chests, D G, are made as follows: the steam passing down the pipe, B, is admitted through the aperture, e, to the chest, D, which contains an internal chamber, N, of such a size as leaves a passage way around it, separated by partitions, g g; f is the exhaust passage. The interior chamber, N, is completely enclosed from the chest surrounding it,

excepting having communication by the valve openings or ports; h h are the upper and lower steam ports; i i are the exhaust ports. The area of the valve openings should be as great as is admissible, and no smaller than is necessary for the lap of the valves. Each valve may be called double, that is, it has two slides, l l, connected together by what may be termed "a block," m. One slide, l, moves on the face in the inside of the interior chamber, N, and the other on the outside in the steam chest, D. Both the exhaust and steam valves are exactly alike, therefore the description of one will

answer for the other. The rod, fig. 3, d d, is for working the valves in the chests, G D, horizontally.

Steam entering the chest, D, through the aperture, e, presses on the top of the upper slide, l, and on the lower also, thus balancing the pressure, and when the port is open, the steam presses inside of the chamber, N, reversely, but equally in the same way on the sides, consequently they experience equal steam pressure on their surfaces. When the valve in the chest, D, exposes its openings, h h, the steam enters through them.

Figure 3, by the dotted lines, shows the motion of the slides. It will be understood that the steam cylinder is in communion only with the interior chamber, N; the chests—both steam and exhaust—butt with a close joint against the inner chamber at the front plate, fig. 1; b, in this figure, shows the passage between the chests and inside chamber. The upper chambers may be arranged the same way. The steam and exhaust valves at one end, are opened and closed alternately, and at opposite times, to the valves at the other end of the cylinder.

By the above description we believe that a very correct understanding will be obtained of this invention, especially by our steamboat engineers. We must say that we think a great deal of this invention. We have never seen slide valves constructed, arranged, and operated the same way. Mr. Lawton has taken measures to secure a patent.

The Patent Office Building.

The National Intelligencer of the 14th inst., replies to the articles we have published respecting the contemplated appropriation of the Patent Office Building to the use of the "Department of the Interior." It comes forward to advocate the measure (as might be expected) recommended by Mr. Stewart. It endeavors to prove that the Patent Office Building was not originally designed for the exclusive use and accommodations of the Patent Office, (this we did not expect) and quotes the law to prove its point, which is, that "there be erected on some appropriate site under the direction of the President of the United States a fire proof building with suitable accommodations for the Patent Office." "This act," it says, "did not declare the building to be for the exclusive accommodation of the Patent Office." It calls our charges flippant; if ever there was a more flippant argument to appropriate the Patent Office Building for any other purpose than the business of the Patent Office, the quotation above is one of them. Does the law mention a second party for whom the office was built? No. But the Intelligencer sees that it may mean the Department of the Interior, and an elastic commentator may make it mean anything.

All the arguments and figures of the Intelligencer fail to convince us—as its principal object is to prove—that the Patent Office building was ever designed, by any act of Congress, to be devoted to any purpose but that of Patent Accommodation, and the attempt now made by the Secretary of the Interior and his advocates, is the first of the kind ever made. It is true the Intelligencer says, "it is not intended for permanent use," but it is very easy to make such pretensions until the said Department gets into it, and then the Intelligencer, which can find an argument for the Department of the Interior in the original law, will be able to find a far stronger one for remaining in the office, even when it is demanded by the business of the Patent Department. If the Intelligencer had read our article attentively, it would have seen that this was the drift of our arguments. We said, (page 157, 2nd column) that if the Patent Office building was absorbed now, it would be difficult to get it when required, as it would soon all be, for the wants of the Patent Office. For years the Commissioners have been complaining that they have not had room. Why? Because the building has been appropriated to other uses than those originally intended by the projectors of the Patent Office Building. We will have something more to say upon this subject next week, as we have no more room to do so at present.