

New Inventions.

Improved Printing Press.

A person not familiar with the wonderful improvements in the "art preservative of all arts," which have marked the last quarter of this century, and had retained in memory the pictures of the presses used twenty five years ago, as representatives of the present state of printing, could not be otherwise than astounded by a peep into any of our more extensive printing establishments, not to name the shops of our press manufacturers. And yet, with all the acknowledged improvements effected of late, there would appear to be room, still, for all that inventive genius and artificial skill may be able to effect. Acceleration of the speed of the press is the great desideratum, it being very desirable to keep publications back till the latest possible moment compatible with a regular distribution of the printed matter. Particularly is this the case with respect to the daily press. But saving of labor is of course an important consideration in presses as in all other inventions of art.

A quite recent improvement in printing presses was patented last week by George P. Gordon, of this city. As this machine belongs to a highly important class, we propose to give a careful condensation of the inventor's own description. In the first place, Mr. Gordon proposes the employment of a fly with a reciprocating rotary motion. This is so arranged as to relieve the type of the sheets, which it piles on the board. In the second place he secures two distributions to the rollers for each impression, from a single inking cylinder. One of these is given before the passage, the other prior to the re-passage of the form. In the third place he relies on an ingenious combination of the spiral spring, the connecting rod, and the crank motion for operating the bed or carriage of the press.

Improvements in Tables.

We have before us two sets of specifications relating to these important domestic appliances. One of these has been sent in by J. W. Mahan, of Lexington, Ill., the other by T. G. Brown, of Norwich, Conn. The first-named inventor claims to have accomplished a combination of capacities in the inanimate dining table, whereby the ordinary need of human service may be entirely dispensed with during these interesting attentions to the inner man, classed as breakfasts, dinners, and suppers. In plain terms, he proposes a dining table which shall wait on itself, while keeping at bay all those annoying intermixers known as house flies.

The other specification referred to, (Mr. Brown's) presents a plan for the construction of table materials. He uses a glass plate for a slab, which he places in a frame in which there is a receiving rebate. By covering the side of his slab with a variety of transparent and reflecting substances, such as fish scales, broken glass, smalt, &c., mixed in oil, and applying coatings of copal or other transparent varnish, he simulates a variegated surface, which he describes as of rare beauty. Leaf metals may also be used where it is desirable to give tables, or other furniture manufactured in this way, a more costly ornamental finish.

Improved Tenon Machine.

The great difficulty to be overcome in tenon machines now under notice has been the expense of time and labor, occasioned by shifting the timber from its positions, and often the employment of two machines on the same piece of work. C. P. S. Wardwell, of Lake Village, N. H., has proposed to obviate this with an improvement which shall combine all requisites in a single machine. His plan consists in a peculiar arrangement of vertical saws for squaring the end of the rail, and for forming the shoulders, and horizontal saws combined for cutting the tenons themselves, whereby a reversal of the rail is rendered unnecessary. By the addition of one or more cutters between the horizontal tenon saws, working in combination with the shoulder saws, the capacities of the machine are greatly increased. A suitable number of nuts and set screws, to keep these

saws in the places to which they are shifted to secure the desired angles of cut, completes the arrangement.

Self-Acting Railroad Switch.

It is a celebrated saying that he is a real benefactor who can make two blades of grass grow where one grew before. If this be so what will be the benefaction of an invention which shall reduce the destruction of limb and life by railroads to even one half of the present amount? Truly may all such inven-

tions as that indicated by our caption be classed among the more merciful inventions of the day. Thanks, then, to William H. Whitney, of Abington, Pa., for a well-promising invention, for which he seeks for a patent, and by which he proposes to furnish the plan of a self-acting and self-adjusting railroad switch, whereby switchmen may be dispensed with altogether, and tireless and sleepless iron-nerved guardians of life and property made to take their place.

IMPROVEMENT IN SPARK ARRESTERS.

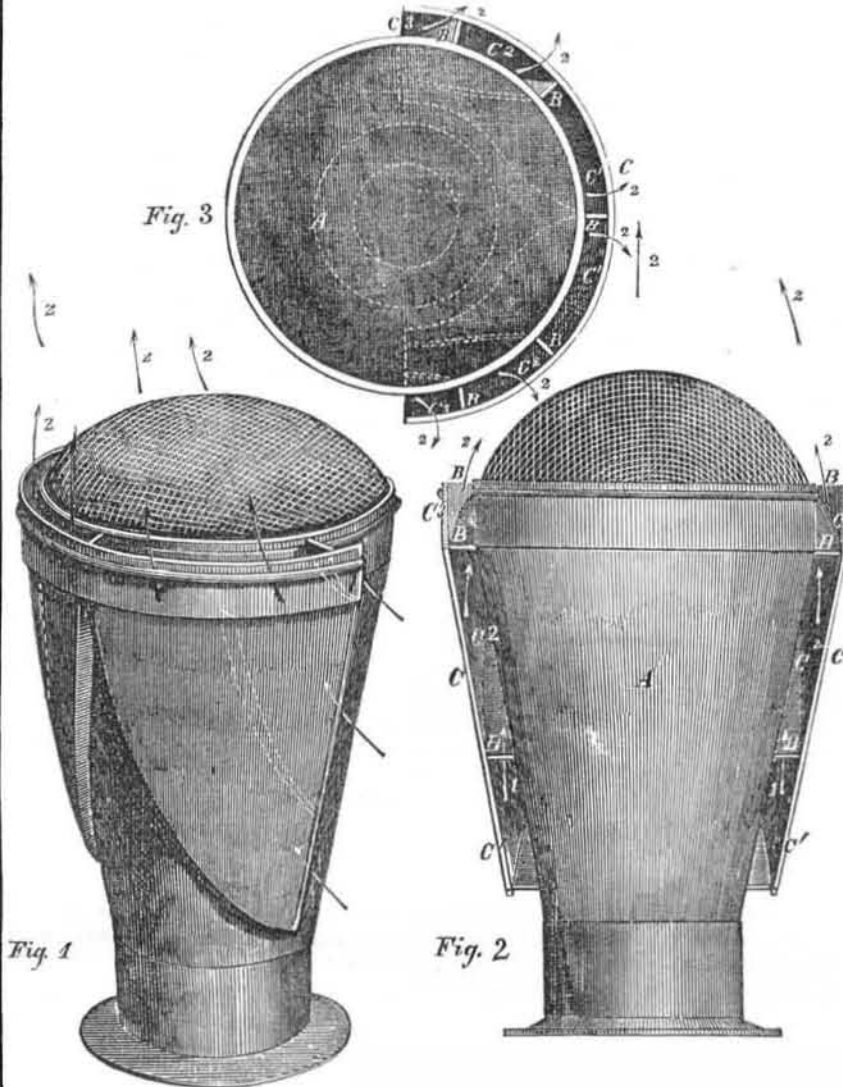


Figure 1 is a perspective view, showing the back of a new Spark Arrester; fig. 2 is a front elevation, and fig. 3 is a top view. The same letters indicate like parts.

These views illustrate an improvement in the spark arrester of locomotive engines, by T. E. Rollins, of Hornellsville, N. Y., who has taken measures to secure a patent for the same.

The object of the invention is to carry the sparks and smoke which escape from the locomotive so high above the chimney as to prevent them annoying the engineer or passing into the cars.

A represents an ordinary spark arrester; B B B, and C C, represent the new attachment applied to the same. This consists of a series of ribs, B, placed spirally round the outer periphery of the case, A, and covered by sections C C, of an outer semi-circular case or shell, as represented. By thus arranging the ribs and covering them by the sections, C C, a series of passages, C' C', C<sup>2</sup> C<sup>2</sup>, and C<sup>3</sup> C<sup>3</sup>, are formed. The passages, C' C', commencing on the sides at the bottom of the conical case, A, and winding round in a spiral direction until they meet each other at the top of the case, and the passages, C<sup>2</sup> C<sup>2</sup>, commencing a short distance above those, and winding round in an upward direction, and terminating in the passages, C' C'; and the passages, C<sup>3</sup> C<sup>3</sup>, are formed above C<sup>2</sup> C<sup>2</sup>, and wind round a short distance and terminate at the top of the case. Each of the curved ribs, by its peculiar arrangement, serves as a stop to prevent the air escaping from one passage into the other, until it arrives near the top of the case.

The front and lower ends of the passages are open, consequently a large quantity of air passes into them, as the train rushes along through the atmosphere, and by reason of the shape of

the passages and the rapid motion of the train, the air is made to flow upwards, and as it escapes, it comes in contact with the sparks, and gives them a whirling upward motion, carrying them far above the top of the stack;—this prevents them from rushing into the vacuum formed behind the train.

The arrows, 1, show the manner in which the air passes into and through the passages. The arrows, 2, show the course of the air, smoke, and sparks, after arriving at the top of the smoke stack.

More information may be obtained by letter addressed to the inventor, at Hornellsville.

New Steam Brake.

Henry Miller, of this city, has made a contribution to the already long list of railroad appliances, which claims to be an improvement in the application of steam and compressed air to brakes. The principal features of this inventor's plan consist in working the brakes of each car of the train with a separate cylinder, which is supplied with steam by a pipe running from the boiler or from some air pump. Stop-cocks connect with each brake, in order to let on the motive element when desired. The continuity of the pipe throughout the train, is accomplished by flexible connections with each car.

Improved Roving Tube.

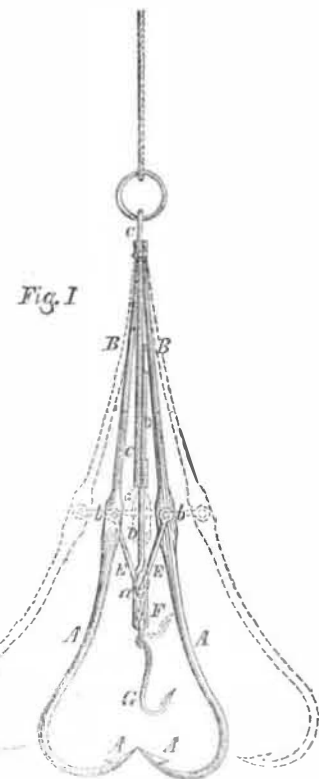
In this machine, as usually made, an eye is placed in front of the tube proper, for the purpose of twisting the sliver and forming the roving. Edmund W. Dean, of New London, Conn., has made an improvement, in which he proposes to substitute, for the usual eye, a "variable elastic mouth-piece." This is made to take a hold on the sliver sufficiently tight to insure the requisite twist. Needless friction is thus avoided, and two oth-

er advantages gained, according to Mr. Dean's specifications, viz., the exact regulation of the condensation of the roving, and greater facility in repairing, should a break occur while the tube is in motion.

Improved Fish Hook.

This engraving represents an improvement in Spring Fish-Hooks, for which a patent was granted to Henry Sigler, of Houston, Texas, on the 11th of last April. These kind of hooks for fishing are made double, the dotted lines exhibit the hooks when set, and the dark full lines, when closed. The top portion of the main hooks are made elastic, and so attached to vertical guide pieces, that they are made to serve as springs for forcing them together, with two toggle arms; they also form a toggle joint for forcing the hooks apart and retaining them set, for a given time. In combination with these devices, a common bait hook is employed, which is attached to the lower end of a regulating slide, and so situated that its end is some distance above the spring hooks, by which arrangement the fish has to thrust his head between the latter to reach the bait, in drawing upon which, the toggle arms are forced out of their horizontal position, when suddenly the two spring hooks are forced together into the body of the fish, thus securing it beyond the possibility of escape. A A are the spring hooks; B B are the upper parts made of thin spring metal. They are secured to a vertical flat guide piece, C, which has two brackets or guides for the sliding piece, D, which moves up and down as the hooks are forced apart or drawn together. This slide has two broad sides on its lower end for the toggle arms, E E, to fit upon at F, and be fastened with an axis pin. The other ends of the toggle arms are secured to the hooks, A A, by axis pins, b b. G is the bait hook, it is attached to the lower end of the slide, D, a short distance above the bars of the spring hooks.

The hooks being set in the manner shown by the dotted lines, the shoulders, d, prevent the toggle arms from rising above the horizontal line. The small hook being baited, it is evident that when a fish snaps the bait and pulls on it, that the toggle arms, E E, will be forced from their horizontal line, and will suddenly act with great power as toggle levers, forcing the two spring hooks, A A, into the body of the fish, by which means it will not only be



caught, but cut into and cut under as certain as Texas grows excellent cotton.

More information may be obtained by letter, addressed to the inventor, at Houston, Tex.

Progress of Science.

A letter from one of the officers of the Japan expedition, says:—"The Japanese have been delighted and astonished with the movements of the locomotive and rail-car, and some of them have held conversations with one another by means of the magnetic telegraph."