NEW INVENTIONS.

Improvement in Spinning.

Edmund Victory, of Watertown, N. Y., has taken measures to secure a patent for the above. The improvement consists in the employment of a revolving tubular head, which is furnished with a pair of drawing rollers, whose axes are perpendicular to its axis, and which can be used either in a separate machine or in combination with the bobbin, and fly frame or cop spinner with live spindles. The object proposed is to be able to both draw and twist the sliver or roving, at the same time. This is effected by a combination of geared wheels, which so connect the revolving head with the drawing rollers that the sliver or roving while being drawn off the spool by another set of rollers intended for that purpose, and which revolve at a less speed than the head and drawing rollers is stretched or drawn out by these last, and at the same time twisted. The thread is then conducted by another set of rollers to the flier, by which the final twist is given and it is wound on the bobbin. Any number of heads and drawing rollers may be employed in the same frame, but when used in combination with the bobbin, and flyers or live spindles, the heads must correspond in number with them.

Self-Adjusting Hatch.

Hatches, as at present arranged, are extremely dangerous, they are almost invariably placed at the entrance of the stairways of buildings, and the upper doors are, in consequence, adjacent to the upper stairways, so that if the doors are left open, which is generally the case, through carelessness, inattention, or other causes, accidents often of a serious nature are likely to occur. Such casualties are rendered entirely impossible by an improvement, the invention of Daniel Tallcot, of New York City, who has taken measures to secure a patent. The improvement consists in attaching to the axis or pivots of each door of the hatch a half pulley, to which a lever is connected by a chain or rope, the lever being constructed in such a manner that the carriage, in its descent, will operate upon the lever and open the doors, thus allowing the carriage to pass through, the doors afterwards closing by their own weight, the effect of which is graduated by springs. In like manner the carriage is elevated by means of a pulley hung on a cross-piece at the top of the uprights between which it travels, and which are grooved for this purpose, serving as guides, and as it ascends, of course raises the doors. There are other springs secured to the inner side of one of the uprights, which are intended to throw the doors out of their vertical position when the carriage has passed through, and thus facilitate their closing.

Improved Lard Lamp.

The great objection to the employment of the above-named lamps is the difficulty that is experienced in lighting the wick from the cooling of the lard, and consequently hardening around the wick. To remedy this inconvenience, an improvement has been invented by Isaac H. Bartholomew, of Northford, Ct., who has taken measures to secure a patent. The inventor uses an additional oil lamp, and a copper or other metallic tube, which is suspended over this last-named lamp, and furnished with reflectors, by which the lard round the wick of the other lamp is melted and also the lard in the body of the lamp. Both apparatus being only used until the purpose is effected, when the oil lamp is extinguished and the heat conductor removed.

Self-Acting Switch.

The ordinary switches require an attendant to operate them, and are therefore exceptionable in many points of view, they are costly, and are liable to dreadful accidents if by any cause they are neglected to be turned in a proper direction for passing trains. To remedy these disadvantages an improved switch, which is self-acting, has been invented by Theodore Sharp, of Chatham-4-corners, N. Y., who has taken measures to secure a patent. By this contrivance the passing trains are made to operate the switches by bearing in their course upon levers which are placed vertically on pins secured on the outer side of the rails, and are forced down horizontally as the wheels pass over them, drawing the rails to the required direction for the cars. To effect this object, the pendulous levers just mentioned are connected by a cross-piece, and longitudinal bars that are part of their length made flexible to the switches, which, when in a right position for the passage of the train, are secured by a catch on one side. There is likewise a contrivance for unlocking the switches when it is required to reverse them by means of bent rods and rock shafts, and the entire apparatus is kept from injury in a case of any suitable form, as may be required.

TERRY'S CAST-IRON PAVEMENT---Fig. 1.

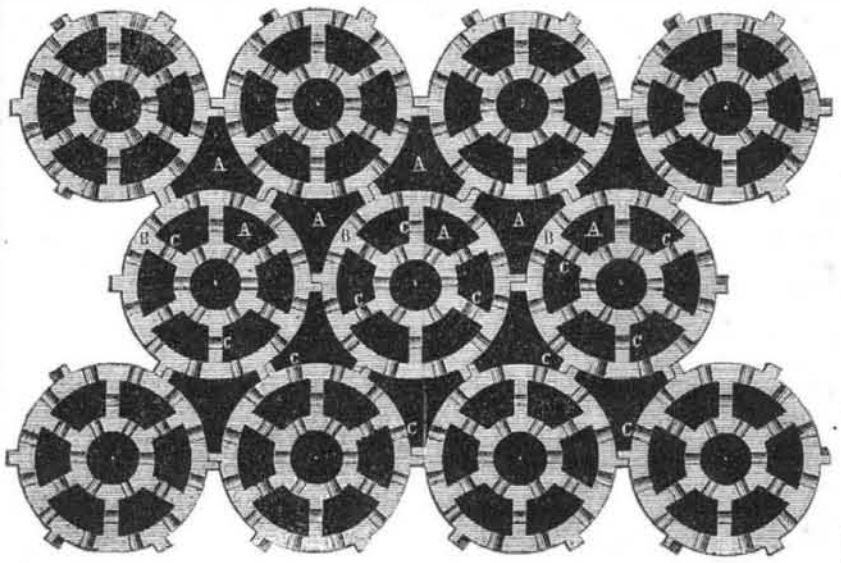
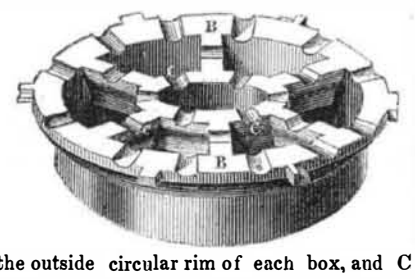


Figure 1 is a plan view of a section of Terry's cast-iron pavement, and fig. 2 a perspective view of a block of it. It is the invention of W. D. Terry, of Boston.

The nature of the invention consists in covering the surface of a street with boxes made of iron of any convenient form and size, and divided into sections, so small as not to admit the hoof of a horse, and the compartments of iron are so arranged as to strengthen one another, and the whole pavement. The boxes are grooved in such a manner as will effectually prevent the feet of horses and the wheels of carriages from slipping. The boxes keyed together, as shown in fig. 1, and the interstices are filled with any composition made of stone and shells, &c., and held together by any suitable cement. Fig. 2 shows the cast-iron box or block for a pavement, ready to be laid down upon the earth. It is of a cylindrical form.

A represents the interstices between the blocks when laid down, and also the interstices or hollow parts cast in each box. B is

FIG. 2.



the outside circular rim of each box, and C represents the grooves spoken of in the rim, radial partitions or ribs, and inside circular rim. The ribs and rims extend to the bottom of each box, and the interstices also extend down. Each box has outside flanges for the purpose of keying one into the other, as shown in fig. 1, so as to render the whole immovable and firmly keyed in position. Each block is about five inches deep, and one foot in diameter, but a larger size may be employed. Each block may be made with any number of compartments in it. The thickness of the rims and ribs in each block is about one inch at the top, and this thickness extends about one inch down, then tapers to a thin rim at the bottom.

It will be observed, in fig. 1 there are dark notches in some of the projections, these are clefts for the reception of the key of the next block. The keys or flanges, and the clefts or commissures are so arranged around the outside of each box, that each key rests in a commissure of the neighboring box, and thus, as represented, each box rests upon the ground, and is also supported by three other boxes, which it also aids in supporting. Thus the whole pavement is firmly linked together, and it is impossible for any one box to move or rise above or settle lower than those around it. This is the iron pavement which has been laid down, and has been successfully tried in Boston. It evidently appears to be an excellent invention for the purpose intended, and we hope that all doubts as to its economy and practicability have been fully dissipated.

More information may be obtained by letter addressed to J. Atkinson, Esq., No. 81 Washington st., Boston.

New Water Wheel.

A water wheel of an improved description, by which the whole effective force of the water is obtained, has been invented by Simeon W. Draper, Granville Draper, and Reuben M. Draper, of Boxborough, Mass., who have taken measures to secure a patent. The improvement refers to horizontal water wheels, and consists in having two wheels, one encompassing the other, which are so arranged that while one wheel is operated by the reaction, the other is driven by the direct action of the water, the power being communicated to a driving shaft by bevel geared wheels. In this arrangement the former, or re-action wheel, is encompassed by the other, the space between the two being filled up with the buckets of the outer one, and the shaft of the first-named wheel works inside the shaft of the other, which is made purposely hollow. There is a shoulder or projection on both of these shafts, that of the hollow shaft resting on the other, and the outer wheel likewise has a bearing on the interior one. The water is admitted into the inner wheel, through a supply-pipe, and rushes out of the arms that project from its periphery upon the buckets of the outer one, the two wheels being propelled in a contrary direction.

Time Indicator.

An improvement on the above useful appendage to a merchant's counting-house has been invented by J. N. Ayres, of Stamford, Conn., who has taken measures to secure a patent. For this purpose, instead of the ordinary method of arrangement by which separate cards are required every day and month, the inventor employs three endless bands, with the days of the week, dates of the month, and months of the year, printed on their front sides. These bands pass over rollers inside a box, and are made to appear successively as the rollers are turned through slots or apertures, by which they are brought to view, and as a protection from injury there is placed in front a piece of glass, or some other transparent substance through which they can be read off.

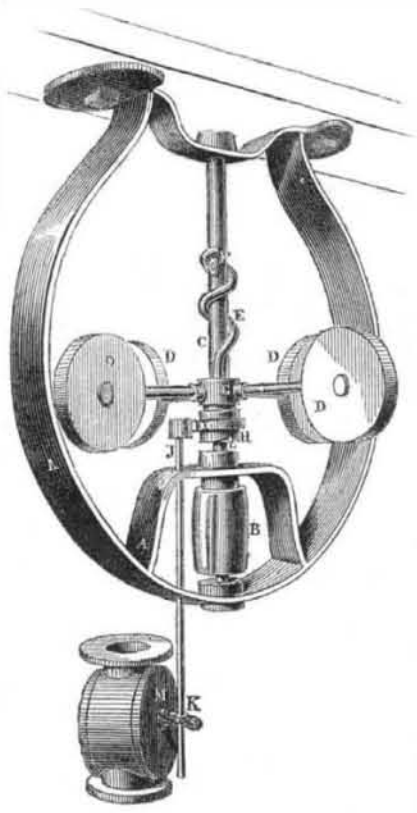
Self-Loading Cart.

Measures to secure a patent for the above have been taken by Samuel Parks and Francis C. Rue, of Warren, Ill. The novelty of this cart consists in having one or more plows underneath the axle, and in fitting around the wheels a series of buckets, by which the cart is made to both dig up the earth, and likewise load for itself. The plows are secured to an adjustable frame underneath the cart, and the depth to which they are required to enter the ground is regulated by a lever attached to a transverse bar at the back of the frame, which is operated by the attendant. The position of the lever and that of the plow-share being maintained by resting the front end of the former upon the step belonging to a bar which is suspended in front. The earth is raised up into the cart by a series of buckets formed around the wheels, and which, as they revolve, are filled and discharge their contents into the cart.

Tremper's Pneumatic Governor.

The ordinary Governor, it is well known, acts on the principle of the pendulum, a circumstance that imposes limits to its velocity, and which, in some cases, is objectionable. The governor here shown is free from this defect, and also possesses great merit on the score of simplicity and economy of construction. The theory of its action rests on the effects of momentum and the resistance of the air, which will be readily perceived by a slight inspection.

A A is an iron frame for supporting the spindle, C, which is kept in motion by a belt running on the driving pulley, B. D D D D are four heavy metallic discs, presenting considerable surface to the air, these are fixed to the ends of inflexible bars which radiate from the bush or socket, G, this latter turns loosely upon the spindle, and can also slide up and down it. Affixed to G is the curved or spiral rod, E, whose action is simple and efficient. For when the governor is put in motion the spindle will impel the roller, F, attached to it under the spiral, which is consequently forced up, drawing with it the bush, G, and its appendages, but when the discs have acquired a velocity equal to that of the spindle, the further ascent of the spiral will cease. Should the speed of the spindle diminish, the velocity of



the discs will not slacken on account of their acquired momentum, and in consequence their weight will induce the spiral to descend. The valve inside the valve box, M, is operated by means of a rod, J, which, by the intervention of I (constructed in the usual manner), partakes of the traverse of the bush, but not of its rotary motion. H is a stop to limit the descent of the discs, &c., this stop is secured to the spindle by the pin, L. The mode of attaching the rod, J, to the valve stalk, is shown at K. The valve is not shown here, but it will doubtless suffice to observe that it is perfectly balanced, so that it works as easily under any pressure of steam as when not in use, needs no packing, cannot get out of centre, and is free from every objection that the most critical might allege against its efficiency. A governor of this description for a 100 horse-power engine weighs only 15 lbs.

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