

## NEW INVENTIONS.

## Railroad Car Coupling.

James Turner, of East Nassau, Columbia Co., N. Y., has taken measures to secure a patent for improvements in railroad car couplings. The improvements are chiefly intended to cause the locomotive or any car of a train that may, by accidental means, get off the track, to detach itself immediately from the train, by which means it will often be preserved from material injury itself, and other cars will not be drawn off the track along with it. The improvement also allows a closer connection to be made between the cars, and dispenses with the buffers. The improvement consists, simply, in connecting the inner end of the traction bars, to which the buffers are attached to the car, in such a manner as to allow the buffer to move sideways, and in attaching to the ends of the car a transverse bar, whose upper side inclines upwards from the middle towards the sides of the car. Upon this bar the head of the coupling pin rests, the form of coupling employed being the common link and pin. When the engine or a car gets off the track, it drags the buffers of the next car sideways, and the coupling pins, being also moved sideways, are raised by their heads passing up the inclines on the transverse bar, until they are drawn from the links, and the detached engine or car is thus uncoupled.

## Improvement in Sounding Boards.

Alfred Speers and Ernest Marx, of Aquackanock, N. J., have taken measures to secure a patent for an improvement in sounding-boards for pianofortes. The sounding-board is made in the form of a hollow cylinder, or prism, or part of either, the said board having its ends secured between two discs. The strings, cap, tuning block, and all parts of the instrument are suitably arranged around it to produce the sound. The principal object of making the board of this form is to improve the sound. The form also facilitates the making of a double instrument—one with two sets of strings in one case.

## Incombustible Floors.

John B. Cornell, of this city, has taken measures to secure a patent for a useful improvement in iron floors, which is also suitable for roofs of buildings. The floor is constructed of two plates, or a series of plates of corrugated sheet-iron placed at a short distance apart, with the pieces of their corrugations opposite each other; in other words, ridge above ridge and furrow above furrow—the space between the said plates being filled with an incombustible cement or a concrete.

## Submarine Exploring.

Willard Day, of the city of Brooklyn, N. Y., has taken measures to secure a patent for a useful improvement in sub-marine exploring vessels. The nature of the improvement consists in constructing a vessel having a chamber surrounding it into which both air and water are admitted, as required, in order to allow the vessel to float or sink. The sides of the vessel are pierced and contain lenses and lookouts; the lenses concentrate the light (which is artificial), within the vessel, and illumine the water and bed of the river, harbor, or sea, in which the vessel is working. The workmen look out from the vessel, and are enabled to examine objects outside of the vessel. Grapples, &c., are employed for warping and turning the vessel, and changing its location. The vessel is provided with tight hollow masts, through which a current of air is made to pass to the interior of the vessel, and to allow foul air to pass out. Steam is employed to propel the vessel by paddle-wheels, which have air chambers on their upper parts to prevent re-action when the vessel is sunk.

## Diurnal Reflectors.

An optician of Paris, M. Troupeau, has recently introduced what he terms a "diurnal reflector," for the purpose of superseding artificial lights in the day time, by reflecting in any direction the natural ray of the sun from any skylight or window, however obscurely placed for any immediately useful purpose from bad construction of the building or otherwise, and pressing them into the service of

any dingy corner which may require such assistance. They are made of sheet-copper, silver-plated and polished, and slightly corrugated in wavy ridges, radiating from the centre to the ends and sides, or to the circumference, if circular. This departure from a plane assists in the diffusion of light by multiple reflection, and without seeing one in action, it would hardly be conceived to what a desirable ex-

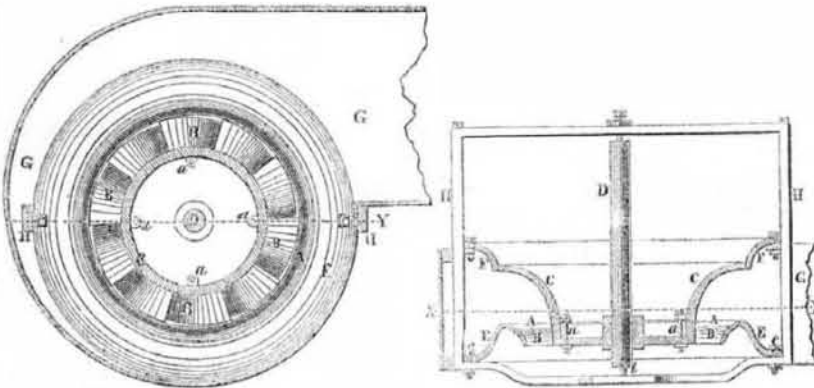
tent they may be made to illuminate a dark apartment, particularly rooms in basement-stories, vaults, warehouses, &c.

## Improvement in Trip Hammers.

Peter Stibbins and John Holmes, of Schenectady, N. Y., have taken measures to secure a patent for an improvement in trip hammers, so as to give the hammer a true vertical blow, also for regulating its force and velocity.

## DODGE'S IMPROVEMENT IN RE-ACTION WATER

Figure 1. WHEELS. Figure 2.



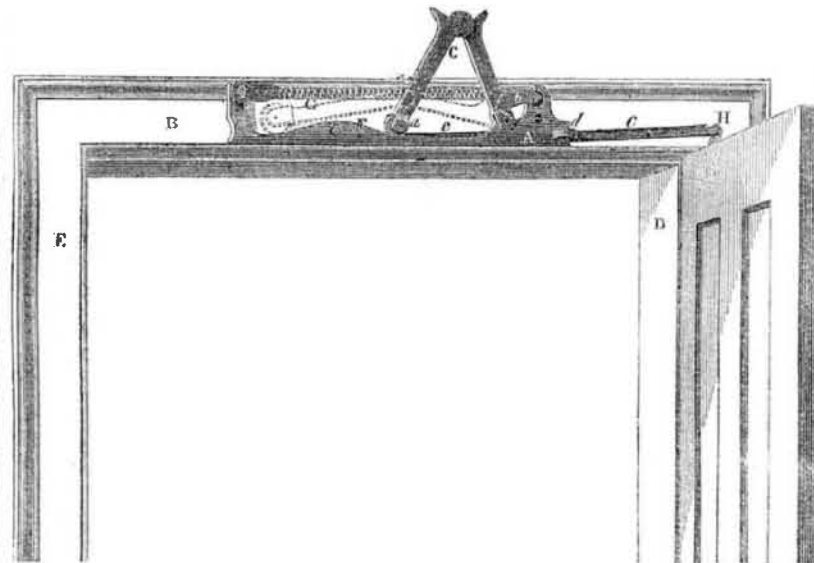
The accompanying engravings represent an alleged improvement in Water Wheels, invented by Mr. Edwin Dodge, millwright, of Dryden, N. Y., who has taken measures to secure a patent for the same. Figure 1 is a horizontal section taken at the line X X, fig. 2. Fig. 2 is a vertical section taken through the centre of the wheel at Y, fig. 1. The same letters refer to the same parts on both figures.

A represents the wheel; B are the issues, rather wider at the upper part than at the bottom, and are inclined, as fully shown in fig. 2. C is a bell-shaped cap or head, bolted to the wheel just within the issues, secured by the bolts, *a a*. The bell-shaped cap or head (best seen in fig. 2) gradually expands as it raises and projects at the top some distance over the issues of the wheel. D is the shaft of the wheel fitted on the point, *b*, at its lower end. E is the stationary rim which encompasses the wheel, and F is the rim which encompasses the upper part of the bell-shaped cap or head. It will be seen by referring to fig. 2 that the rims are of a curved form, and

that they curve outwards in reverse directions,—the lower rim, E, curving downwards, and the upper rim, F, curving upwards. G is the scroll within which the wheel is placed, as well as the bell-shaped cap or head and the two rims, the top of the scroll being just under the edge of the upper rim (better seen in fig. 1.) Both rims are secured to the uprights, H H, by small bolts which pass through the edges of the rims and lips in the uprights. The bell-shaped cap or head is fitted so as to work perfectly even as it revolves within the lower part of the upper rim. The peculiar object claimed by the inventor of this wheel is, that the water, as it is admitted, not only presses on the issues, causing the wheel and bell-shaped cap to revolve, but it will also press upwards against the cap or head, and thus counteract not only the pressure of the water upon the issues, but also the gravity of the wheel, thus taking the weight off the point, *b*.

Information relative to the cost of this wheel may be obtained by addressing the inventor as above.

## WESTCOTT'S SELF-REGULATING DOOR SPRING.



This is an improvement on Door Springs, by Dr. A. Westcott, of Syracuse, N. Y., and for which a patent was granted in October, 1850. The objects sought to be gained by the peculiar arrangement of this spring, are the four following, viz. :—

1st. To secure a sufficient amount of power at or near the closing point of the door, without too great a tension of the spring at that point.

2nd. To have this power gradually diminish as the door opens, till the spring finally ceases to act upon the door at any point of opening which may be selected.

3rd. To prevent the door from slamming, as is always the case by the direct action of a spring.

4th. To furnish a spring that may be placed on either side of the door, or mortised into the lintel so as to be entirely hid from view.

This door spring consists essentially of a frame or plate, to which the other parts are attached, a spiral or other spring, a jointed lever, and track upon which the movable end of this jointed lever moves, guided by a friction roller and a cord or strap connecting the spring with the door. The manner in which these several objects are respectively attained will appear from the accompanying engraving, in which A represents a frame, to which the other parts are attached; B is the lintel of the door; C is a rule-jointed lever, with one end attached to the frame by a pivot, upon which it moves; D is a door post, to which the hinges of the door are fastened; E is a lock post; F is the track; G is a spiral spring, and H is a standard on the door, to which the strap or cord is attached. *a* is a friction roller which guides and facilitates the movement of the movable end of the jointed lever; *b* is an arm from the lever, C, to which one end of the

spring, G, is attached; *c* is a strap or cord, one end of which is attached to the movable end of the jointed lever, and the other to the door; *d* is a friction roller, over which the cord or strap plays, and *e* is the highest part of the track.

Now, in order to understand how the arrangement of these several parts effect the objects above enumerated, it must be borne in mind that the spring is the motive power, and that the combination of levers and inclined planes are simply to modify its action. In a door spring of full size, the cord or strap is attached to the door at a point about five inches from its hinged edge; and when the door is shut, this lever (the distance between the edge of the door and point at which the strap is attached) is acting with its greatest force. But it will be perceived that, as the door opens, this point of attachment swings back, and behind the fulcrum or hinge; and when the door is fully open, the spring is expending its force almost directly against the hinges—its effective force being thus nearly or quite destroyed. Again, the arm or lever, *b*, attached to the jointed lever, is in a like manner losing its power by falling behind its fulcrum, and thus becomes constantly shorter. The jointed lever, when the door is closed, is also in its most powerful position, and is rapidly losing its power as the movable end is drawn back, so as to flex the lever, which is done by opening the door. The shape of the inclined plane is such as also to favor the same end. It will be readily seen that while the power of the spring is steadily increasing, the power of these three levers (as modifiers) is much more rapidly diminishing, so that the effect of the spring upon the door is becoming less. This effect has only further to be modified by the shape of the inclined plane to neutralize the effective force of the spring at any point which may be desired. The door is prevented from slamming by the great pressure of the roller upon the carriage, or track, till it passes over the most prominent point of the inclined plane; nor is this pressure at any time so much relieved as to allow the door to acquire much acceleration of motion—there being little or no difference from whatever point the door may start.

The last object named, and which is a very desirable one in many cases, is accomplished by attaching the arms, &c., to a simple plate and mortising into the under side of the lintel, and letting the arms play horizontally instead of perpendicularly, as in the accompanying engraving, in which case nothing is seen but the smooth surface of the plate, and are even plane with the lintel, and this, by being painted the color of the casing, would not be detected.

Persons desiring to purchase rights will please address the inventor, at Syracuse, N. Y.

## Securing Spindles in Locks.

Nathan Mathews, of Pittsburg, Pa., has taken measures to secure a patent for an improved method of securing spindles in locks. The spindle is attached in the lock by means of a circular key which fits in a corresponding recess in the inner side of the lock which adjoins the door. The key is formed of a circular plate, said plate having a slot in it, and the slot passes over the spindle, the inner sides or edges of the slot fitting in grooves on each side of the spindle. There are a series of grooves in the spindle at equal distances apart, so that the spindle may be lengthened or shortened to suit doors of various thicknesses; thus making the spindle ar. extending one in every sense of the term.

## Great Telegraphic Invention.

Prof. J. Milton Sanders, of Cincinnati, writes to the editor of the Evansville Journal, that David Baldwin, of New York, who is at present in that city, has quite perfected a telegraph which he says will revolutionize the system entirely. By it news can be transmitted on one wire opposite ways at the same time, and as rapid as a person can talk.

## Linnet's Nest in a Curious Place.

Some workmen who were recently sawing up a log of English elm, in a block-maker's yard, at Sunderland, found a green linnet's nest embedded in the very heart of the wood. The moss, hair, and other materials of which the nest was composed, were in a good state of preservation.