

## New Inventions.

## Machine for Cutting Veneers.

Mr. Joseph H. Goodell, of Yonkers, Westchester, Co., N. Y., has invented and taken measures to secure a patent for improvements in machinery for cutting veneers or other thin slats of wood. The improvement consists in giving the cutting knife a peculiar motion in connection with its feed motion, whereby it cuts much faster, cleaner, and produces veneers of an extremely thin but uniform thickness throughout.

## Machine for Gathering Clover Seed.

Mr. George A. Smith, of Winchester, Randolph Co., Indiana, has invented and taken measures to secure a patent for a machine for cutting and gathering clover seed. This machine exhibits a great deal of ingenuity, although its construction is very simple. A wooden roller is constructed with thick spiral-shaped projections, at a short distance apart, running on it lengthwise with the axis. On these spiral projections are secured knives or blades set in such a way that the cutting edge of each projects over the concavo part of the wooden spiral of the cylinder. A rake is placed on the carriage below like that of a grain

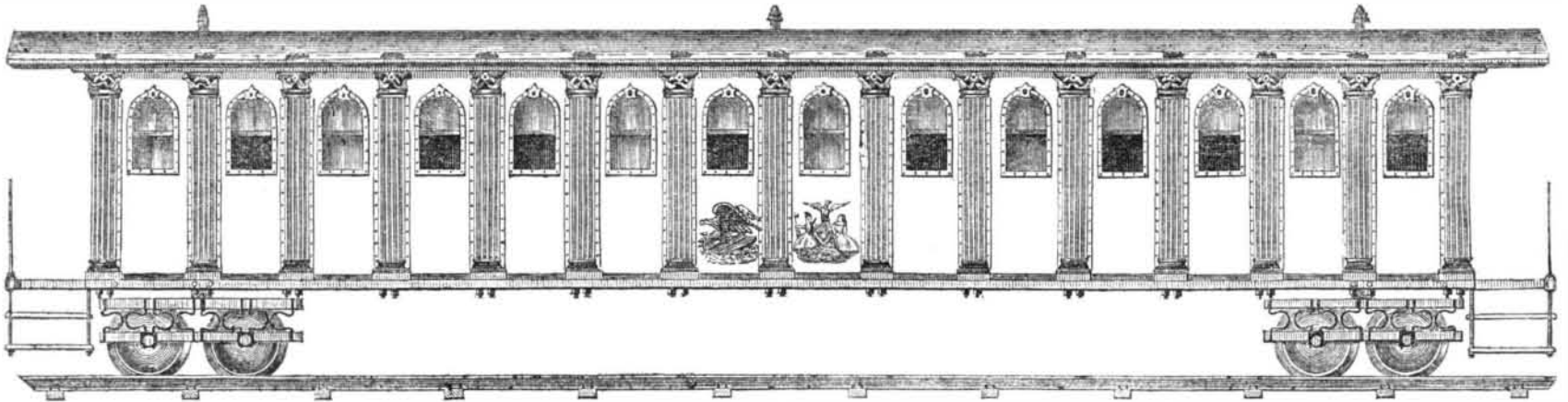
reaper, and a straight knife extends across the rake behind, to hold up the clover, so that as the spiral cylinder revolves, the knives of it cut off the heads of the clover, and the concave receptacles under the knives carry the heads of the clover round, and thus deposit the seed in a proper receptacle at the turning vertical point. There is also an arrangement for securing the wheels on the axle of the carriage, which is a very good improvement. The collars of the wheel boxes have ratchet teeth, whereby the axle is made to turn when moving forward, but not when moving back, thus throwing the wheels out of gear with the cutters, by a spring, when necessary. The rake

can also be adjusted to any required distance to or from the revolving cutters.

## Improved Door Spring.

Messrs. Herman Hartman & Gregor Frink, of Jersey City, have invented and taken measures to secure a patent for a new door spring which has some very good qualities. A steel rod is made fast to the back or hinge edge of the door, while its other end is secured to the post or framing, so that on opening the door, the steel rod, which is a spring, is twisted, and this makes it tend to recover its original posture to close the door. It is an exceedingly simple door spring and can be made very cheap, and will find a ready market.

## WARREN'S IMPROVEMENT IN RAILROAD CARS.—Figure 1.



## Improved Machine for Bending Wood and other Fibrous Materials.

Mr. Cyrus Clapp, of Montague, Franklin Co., Mass., has invented and taken measures to secure a patent for improvements in bending wood, &c., to prevent the separation of the fibres in the act of bending. There is provided a bar or strap of metal with a hook at one end, and an inclined piece at the other, on which the screw of a clamp is made to act so as to draw the hook close to one end of the material to be bent, which is placed between the two ends of the strap spoken of. The metal strap, in all cases is applied to that side of the material which is to form the outside or convex part of the bent material, that being the side on which the tensile or tearing strain comes. Any force may be applied to act on the strap to bend it along with the wood. The hook and clamp confine the fibres endwise, and the strap circumferentially, so that the outside of the bent piece of wood is kept firm and solid without rupture.

## Improved Lock.

We hear a great deal about American locks in London, they bore the bell there, and justly so, Day & Newell's being allowed on all hands to have the best ever seen in Europe; but the end of American lock improvements is not yet. Mr. F. C. Goffin, of this city, has invented and taken measures to secure a patent for a very excellent improvement in locks. It is not possible to give a correct idea of its construction without figures, we can only say that we have seen quite a number of great locks, and this one combines more good qualities, with a simpler arrangement, than any we have ever seen.

## Horse-Power Ditching Machine.

Mr. Charles Bishop, of Norwalk, Ohio, has invented and taken measures to secure a patent for a good improvement in Ditching Machines, whereby the old spade method of ditching by manual power is entirely thrown into the shade. His machine is worked by horse-power, and is provided with a revolving excavator, the shaft or axle of which lies in the direction of the length of the ditch. The excavator is of a screw form, and is operated by an endless chain. The ditch is cut of a semi-circular form, and it deposits the cut clay or other kind of excavated earth in a box, from whence it is delivered at one side on the road by scrapers attached to the endless chain, the machine being propelled forward by a friction wheel or roller moving in the ditch and operated by the excavator shaft.

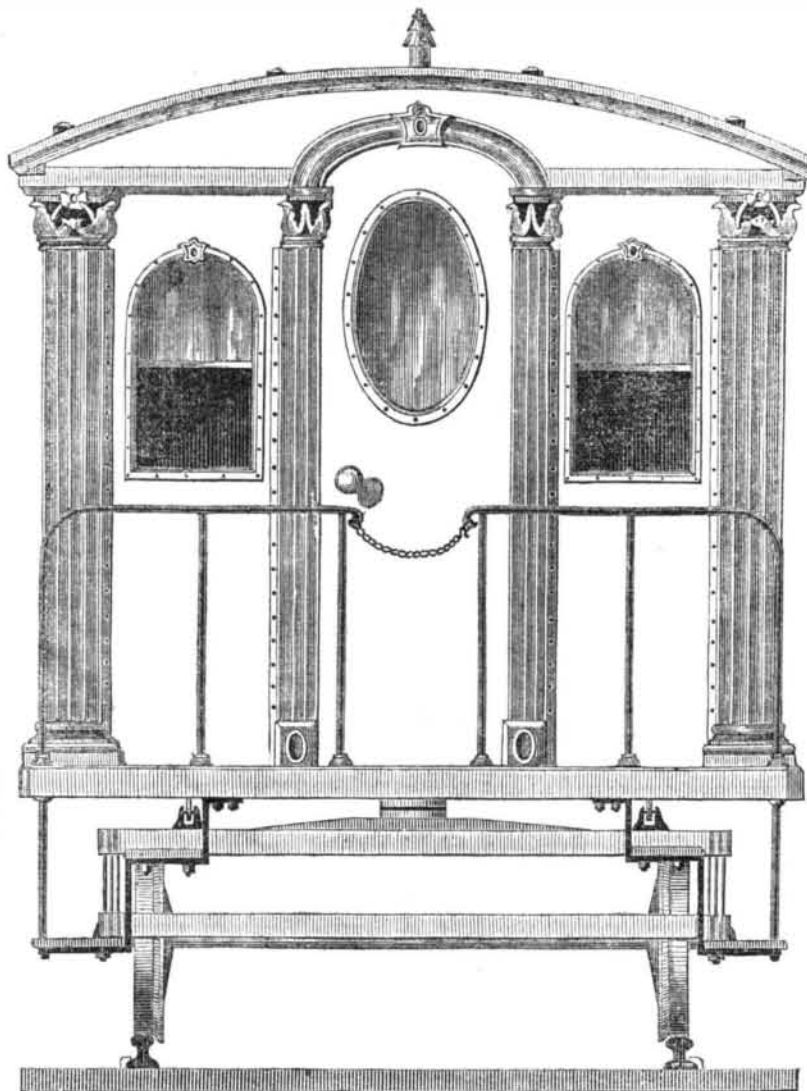
Mr. St. John, of New York, has taken out a patent in London, for a new kind of soap, in which starch forms a principle feature.

It is well known that very great improvements have been made in every branch of our railroad economy since the introduction of the system into our country. Who can forget the miserable flat rail, and the serpentine eccentricities of our first railroads? And who can forget the dumpy prison-looking cars that were originally employed? Our tracks are now firm, and laid down in a workmanlike manner, and the "low-backed car" has given way to the elegant and majestic eight-wheeled vehicle.

Our Railroad Economy, however, is not perfect by any means, and our cars—splendid though they be—are capable of further improvement; and here the accompanying engravings present such an improvement to the public.

Figure 1 is a side elevation, and figure 2 is an end elevation of a Railroad Passenger Car, constructed upon new principles by the inventor, T. E. Warren, Esq., of the city of Troy, N. Y. Mr. Warren is the inventor of

Figure 2.



the spring metal chairs, bedsteads, and the railroad car seat, represented on page 220, this volume of the Sci. Am. The posts or pillars are made of thin wrought-iron plates, and so constructed as to be tubular, thus combining great strength with extreme lightness.

The panels are made of lighter wrought-iron plate than the posts. The roof is of thin sheet iron, and is of an arched form. The car is lined with a non-conducting material so as to render it cool in summer and warm in winter. It can be ornamented in a great va-

riety of ways by beautiful cast ornaments secured to the plates. It will be observed that the car is placed on trucks, which have springs like those of the chair seat illustrated on the page referred to above.

In each panel is an arched window which is intended to be easily opened and closed. The frame and platform may be made of the same material, and corrugated plates used instead of plane surfaces. The substitution of thin wrought iron plates, for wood, in the construction of railroad cars, is, in our opinion, a happy idea. In cases of collision there will, at least, not be the same danger from splinters as in the case of wooden cars. The metal, too, can always sell for something more than fuel, however old. It is but a short time since that we published an account of an accident which very nearly proved fatal to Mr. Paxton, and some other celebrities, on an English Railway, by the car taking fire from a heated journal box. We have seen a car on fire more than once, by the sparks from the engine; by having railroad cars constructed upon Mr. Warren's plan, such dangers would be obviated entirely, at least if due attention were paid to their construction inside likewise.

## Improvement in Filters.

Mr. A. Fessenden, of Boston, has invented and taken measures to secure a patent for a very excellent improvement in Filtering Apparatus. In the filter case or shell, there is inserted a box containing a suitable filtering medium, and its top and bottom surfaces are formed of fine wire cloth; a packing of vulcanized india rubber is placed between the upper part of the box and a shoulder on the interior of the case, which prevents the water from passing down the space between the sides of the box and case, said box being firmly pressed up against the packing of the lower part of the case, which screws on to the upper part of the box. All the water, therefore, which passes into the case, is compelled to pass through the filtering medium in the box. The force of the water is broken before it comes in contact with the wire cloth on the upper part of the box, by a perforated disc, which is placed in the upper part of the case, leaving a space between it and the filtering medium. The water is thereby made to pass through the filtering medium with but a moderate velocity and in a thin stratum as it were. The filter can be easily cleansed out by just turning the bottom side up, and letting the water run for a short period through it, contrary to its common direction. Fresh filtering medium can also be easily inserted by taking off the lid of the box. This improvement is a very excellent one, and must commend itself to all.