

exposed to the red rays, and nine times greater than that decomposed in the blue light.

When plants are put into a dark place their colored parts become blanched, the green coloring matter is oxygenated and decomposed, the tissues become weak and distended by the quantity of matter which has been mechanically absorbed and which they are not able to give off by exhalation, and the plants actually die of starvation whilst surrounded by abundance of suitable nutriment; the stimulus of light, by which alone that nutriment could be appropriated, being wanting.

The green coloring matter of plants is called *chlorophyll*, and gardeners know that it cannot be formed without light. They take advantage of this in modifying the color of vegetables for the table by planting them in situations where the light is very limited, and the result is a change of their color and taste. By covering the lower portions of celery and some other plants, they are rendered tender and white; this is due to the exclusion of light, which is the great developing agent of the woody matter. Potatoes planted near the surface of the ground are always stringy and harsh; those who advocate very shallow planting do not know what they are talking about. The calorific rays which are absorbed by plants are retained in them, ready to be given out in the form of heat when burned as fuel.

INTERESTING PROCEEDINGS IN CONGRESS. THE NEW PATENT BILL.

We notice, by recent proceedings in the Senate, that, on motion of Senator Bigler, chairman of the Senate Committee on Patents, the patent bill published on page 146 of the present volume of the SCIENTIFIC AMERICAN was made the special order for Wednesday of this week. There is, therefore, at the time of our going to press, a prospect that this important subject will be no longer permitted to sleep in the dusty pigeon-holes of the committee room. We hope, also, that when the subject is discussed, the Senators will show a proper appreciation of the rights and interests of a useful class of our citizens, whose claims upon the consideration of Congress have been heartily ignored for nearly a quarter of a century. The bill, as re-printed by the committee, is crude and ill-shaped in some of its sections. At the time we published the bill, we endeavored to point out its defects; and we have no doubt that when it is discussed, section after section, the objectionable features will be lopped off.

LEGISLATION FOR HOGS.

A citizen of Kentucky—William Corbett—has applied to Congress for compensation for discovering a cure for hog cholera. Now, if Dr. Corbett has really made a useful discovery of this kind, Congress ought to buy the secret and give it to the world. This is one of the few cases where the patent laws cannot protect the discoverer from infringement; and unless he can get some compensation to reveal the secret, our hogs must either rely upon the personal skill of Dr. Corbett or give up the ghost. The utter impracticability of relying upon him in such an emergency is apparent; therefore, unless our legislative fathers have no fellow-feeling for swine, they will hurry up an appropriation in their behalf.

COLT'S REVOLVER.

Samuel Colt, the patentee of the famous six-shooter, has just made application (through Mr. Loomis, a representative in Congress from Connecticut) for a renewal of his patent, known as "Colt's Rotating Chamber Firearms." Colt has had pretty hard luck heretofore in attempting to get Congress to renew his patent; but he evidently thinks that, by steady perseverance, he may at some time accomplish his object. We recommend to Col. Colt the perusal of the first verse of the 11th chapter of Hebrews.

WEEKLY SUMMARY OF INVENTIONS.

The following inventions are among the most useful improvements patented this week. For the claims to these inventions the reader is referred to the official list on another page:—

FILED FABRICS.

This invention relates to the manufacture of piled fabrics suitable for carpets or for other purposes by the introduction into a previously woven foundation of canvas or other fabric, of threads which after being passed through the said foundation in the form of rows of loops at regular or suitable intervals, are secured by a continuous fill-

ing thread which passes through the several rows of loops in succession. In this way a pile may be produced on either or both sides of the foundation; the loops forming it on one side, and the portion of the thread between the loops forming it on the other side, and by cutting the thread between the loops a cut on velvet pile may be produced on one side. The invention consists in the employment in this manufacture, of a series of needles arranged side by side at suitable distances apart for passing the threads through the foundation, in the form of loops, in rows extending the whole width of the fabric, and a long needle operating transversely to the first mentioned or loop needles, for carrying the filling thread through the loops. The invention also consists in a certain contrivance for holding the filling thread during the retreat of the needle which passes it through the loops, for the purpose of preventing the said thread being withdrawn wholly or partly from the loops by the retreat of its needle; also in a certain contrivance for feeding the foundation to the needles for the reception of the pile thread, and certain means for operating a set of rods or wires employed for the purpose of forming the pile. This machine somewhat resembles a sewing machine with a large number of needles ranged side by side and operating together. The credit of this contrivance is due to Charles Miller, an ingenious mechanic of this city. The patent is assigned to George Ricardo, 499 Third-avenue.

MANUFACTURE OF RESIN.

H. Napier, of Brooklyn, N. Y., is the inventor of a process of obtaining oil of turpentine and fine white resin by a continuous operation. The crude turpentine is put into a still and heated to a temperature of about 245° Fah., and steam at the same temperature, that is to say, at a pressure of about 10 pounds, admitted among it in such manner as to penetrate the whole of the mass. The steam carries over the oil of turpentine into the condensing worm and separation is effected by condensing in the usual way. When the oil of turpentine has all come over, the temperature of the still is raised to from 250° to 600° Fah., the steam being kept blowing through the mass at the same pressure above stated, the residual portion of the crude turpentine then rises in vapor, and passes over with the steam to a receiver which is kept as cool as possible by water, and in which the vapor is condensed and found to consist of resin of the purest quality obtainable, but slightly opaque from the presence of a little moisture which may be easily removed by remelting the mass and exposing it to a temperature of 213° Fah.

CAR SEAT.

This invention relates to an improvement in that class of car seats in which adjustable backs are employed for converting, when necessary, the seats into lounges or couches. The invention consists in having two backs to each seat and connected by gearing, and having the upholstery connected with certain automatic mechanism, all being so arranged that the backs may be more or less inclined and consequently increased in height as desired, one being used as a support to the lower extremities of the occupants, and either used as a back as occasion may require; the upholstery in consequence of its connection with the mechanism above referred to, being allowed to conform automatically to the adjustment of the backs. This device has been patented to Samuel McGregor, of Logansport, Ind.

STEAM TRAP.

This invention relates to that kind of steam trap in which the operation of the water escape valve is controlled by a flexible diaphragm which is acted upon by the expansion and contraction of the liquid in a vessel heated by the water or steam in the escape pipe. The improvement consists in a novel arrangement of the valve the diaphragm and the chamber, relatively to each other and to the escape pipe, whereby the valve is rendered more sensitive, and a freer escape for the water and sediment is provided than in other steam traps operating on the same principle. The inventor of this improvement is Levi Ferguson, of Lowell, Mass.

REVOLVER.

In this revolver the caps or primers are placed in the hollow stem in which the many-chambered cylinder revolves. The cocking of the pistol causes one cap to discharge from the stem, and a slide to take the same and place it in line with a capnipple. The pulling of the trigger or falling of the hammer or cock causes the bulk of primers to pass into the stem beyond the influence of the explosion. This is certainly one of the simplest and

most complete self-priming fire-arms ever patented. The credit of this invention is due to W. H. Bell, of Washington, D. C. The inventor has taken steps to apply for foreign patents. This patent was issued March 20, 1860.

QUARTZ-CRUSHER.

This invention consists in a concave trough suspended on an axis so as to swing back and forth. A grooved gravitating roller rests on the bottom of the concave. At each end of the concave a screw is arranged. The quartz are placed on the bottom of the trough and as the trough swings back and forth, the quartz are crushed between the grooved weighted rollers, and the toothed grooved bottom of the concave. Scoville and Fraser, of Chicago, Ill., are the patentees. This patent was issued March 20, 1860.

FOREIGN NEWS AND MARKETS.

Extraordinary Petition.—The following singular petition was lately presented to the British House of Commons:—"We the undersigned Poor Men of the parish of Winterslow, county of Wilts, do humbly solicit the attention of your honble. House to our humble petition. Being poor labouring men, mostly with families and aged, and living in a woody district of the country, where there is a great many English truffles grow, which we cannot find without dogs, we do therefore keep and use a small pudle sort of dog, wholely and soley for that and no other purpose; and as it is in the winter season of the year when we gather them, when labourers is generally on the excess in our neighbourhood, we often are enabled by the aforesaid dogs to provide a subsistence for our families, otherwise we should often be a burden to the parish; and as it hath been carried on by our ancestors for generations past without paying any tax for the dogs; but as the tax is now levied upon us—viz. twelve shillings per year, and as we have to keep our dogs six months when we have no use for them, it presses so heavy upon us that without redress we shall in most cases be obliged to make a sacrifice of our dogs, and thereby become a burden to the parish, and in some cases paupers on the union; and, as it did please your honble. House in its wisdom to exempt dogs used purposely for cattle for the maintenance of shepherds, &c., from paying of tax, we do humbly beg that your honble. House will take our case into your consideration, and exempt us from paying tax on our truffle dogs, that we may be enabled to follow our avocation for ours and our families subsistence."

The truffle is a subterranean fungus, of a roundish, oblong form, and a blackish brown color, and it is much used in cooking. It is hunted both by dogs and pigs, trained for that purpose, in soil beneath trees, especially oaks and beeches, and is found in but few places. It has never yet been cultivated with success, although many attempts have been made for this purpose. French truffles are imported to some extent into the United States. They charge a most astounding price for a dish of them in French restaurants.

A Curious Surgical Case.—A rare instance of a perfect recovery from a desperate wound was recently brought under the notice of the Academy of Medicine (Paris), by Mr. Larrey, who at the same time presented to that body an American, M. Preterre, to whose mechanical skill the attainment of the full result was due. At the battle of Magenta, a sergeant of the 85th of the line was struck by a musket ball, which, after completely shattering the lower jaw, came out behind from under the skull, close to the cervical vertebra, which had they been injured would have rendered the case hopeless. It is hardly credible that so extensive an injury, inflicted in such an important region of the human frame, could have admitted of cure; and it reflects high credit on the army surgeons who attended him. To restore the power of mastication by mechanical means, M. Preterre was called in, and succeeded in his task by an ingenious contrivance, which has been greatly admired by the first surgeons in Paris.

Indian River Navigation.—One of a number of vessels building by Messrs. John Laird & Sons, at Birkenhead, (England) was lately tried on the Mersey, and excited a great deal of interest and attention from its novel appearance. The hull is 260 feet long and 36 feet beam, and is constructed of steel plates, the vessel in general appearance much resembling the American river steamers. She drew about 18 inches of water at the bow, and