hall not exceed fifty cents per copy; one copy of the bove number shall be printed on parchment, to be ffixed to the Letters Patent; the work shall be under he direction, and subject to the approval of the Commissioner of Patents, and the expense of the said copies shall be paid out of the patent fund.

SEC. 15. *And be it further enacted*, That printed copies of the Letters Patent of the United States, with the seal of the Patent Office affixed thereto, and certified and signed by the Commissioner of Patents, shall be legal evidence of the contents of said Letters Patent in all cases.

SEC. 16. *And be it further enacted*, All patents hereafter granted shall remain in force for the term of seventeen years from the date of issue, and all extensions of such patents are hereby prohibited.

SEC. 17. *And be it further enacted*, That all acts and parts of acts heretofore passed which are inconsistent with the provisions of this act be, and the same are thereby, repealed.

Nebraska—Salt Wells and Burning Bluff.

The following extracts are taken from a late repor of a committee of the Nebraska Legislature on the mines and minerals of that Territory :—

On the eastern borders of Lancaster county, in a basin or marsh enclosed by a semi-circular range of bluffs, are a dozen or more of these springs, of unusual strength and value, which pour their waters into Salt Creek, which runs through the basin in such quantities as to render the saline quantity of its waters readily apparent, and traceable by the eye for a long distance below where they fall into the Platte. These springs are represented by parties who have visited them to be of immense value, pouring forth a large volume of water containing an extraordinary per centage of pure salt, which has impregnated the land surrounding them for quite a distance. And as they are only some forty miles from the Missouri river, the day may not be far distant when they will prove a source of great wealth to the Territory.

So rich are the waters of these springs that a thick crust of pure salt forms around their edges and on the margins of the streams by which their waters flow into the creek. Persons living in that locality gather this crust by the wagon load and bring it into Nebraska City, where it finds ready sale. By a little refinement to remove the earth attached to it, it is made to excel in quality the finest article of dairy salt imported into the territory.

A few miles from Concord, and about eight miles northwest of Ponca, in Dixon county, is a locality known in that region as the Burning Bluff. And even when the thermometer is at its lowest, by reason of intense cold, the face of this bluff is comparatively hot. It abounds in small holes or cavities, from whence issues a kind of steam or vapor, with a temperature so high as to be painful to the hand of the visitor exposed to it. At the foot of this bluff, presenting the appearance of having been blown, as it were, from the holes and cavities in the face of the bluff, lie large quantities of alum. Strange as it may appear, this fact, though generally known among those well informed with reference to the eastern portion of our Territory, has attracted little or no attention. Who can tell what wealth may lie hidden there?

The western portion of Nebraska, extending to the Rocky Mountains, is rich in gold, silver, lead, copper, cinnebar, coal and gypsum. The people of the eastern section desire that the mining region should be formed into a separate government. It is assumed in the report that the gold of Nebraska for 1860 amounted to $20,000,000. This great Territory contains within its limits sufficient land to form half a dozen of large States. The Platte Valley stretches westward for 600 miles, until it reaches the Rocky Mountains. It is a broad, level and fertile valley, furnishing an easy route for a railroad, and it is really fit for an empire in itself. Nebraska is rapidly filling up with an industrious, intelligent and moral population.

The Prospects of the Atlantic Telegraph.

A writer in the *Edinburgh Review*, after giving a complete history of the Atlantic telegraph cable, comes to the following conclusion in regard to the causes of its failure :—

The account which we have given shows that its failure was in a great measure owing to the absence of a proper preliminary experimental inquiry into the conditions required in the construction of such a cable. But the more immediate causes of its failure were, 1st, The absence of sufficient care in the manufacture of the cable from the limited time allowed for its completion; 2d, The injury that the cable received by repeated handling between the time when it was constructed and the time when it was laid; 3d, The insufficient protection of the outer covering against corrosion; 4th, The insufficient size of the conductor and its insulating covering in proportion to the length of the cable—a want which necessitated the use of high battery power."

The same writer says that all the lines of ocean telegraphs which have received government aid have failed, while quite a number which depend entirely on their own business for support are entirely successful. He expresses the opinion that, "At no very distant period, submarine telegraphs, established on sound principles and in a durable manner, will encircle the globe."

Our Correspondence.

Buckwheat—Its Poisonous Effects—The Honey Bee.

MESSRS. EDITORS:—There is in buckwheat an essence or medicinal principle upon which its irritating qualities depend, and is called *apis venenum* or "bee poison." This is one of the sources from whence the common honey bee obtains its poison; hence, the same disagreeable effects follow the immoderate use of honey when obtained from the buckwheat.

The bee takes from the flower a portion of its medicinal virtues with the saccharine matter of the plant, which, by passing through the internal laboratory of the insect, becomes separated into its primary constituents of *apis venenum* and honey; the one being deposited in cells for the sustenance of the insect, and the other laid by within itself as a means of defence.

Now, in making this separation in the chemical laboratory of the insect (or by accident where dead bees are in the honey while being rendered), it often occurs that portions of this poison are mixed with the honey, producing all the disagreeable effects which would result from the use of buckwheat itself.

There is, perhaps, no article containing as great a per centage of this poisonous principle used for food as buckwheat in its various forms; and the sameness of its aroma with that given off by the common honey bee is a proof of its identity.

All poisonous insects and reptiles are healthy, active and virulent in proportion to the plentiful supply of the poison they are enabled to derive from their food; and while feeding on such articles as yield them this supply, their stings or bites are more virulent than at other times. This I saw fully demonstrated last winter, in transporting the honey bee over the Isthmus to California from the cold regions of the North. The sting from those bees, in the most unhealthy state, produced but little sensation or effect upon the human flesh.

The nervous, warlike habits of the honey bee during the period of the flowering of buckwheat fully corroborate the doctrine that this plant contains considerable quantities of poison, and it is on this principle that its irritating qualities depend.

The best remedy to prevent the disagreeable burning and itching sensation of the skin caused by a free use of buckwheat cakes, is carbonate of soda (or an alkali of a similar nature), used in their raising, or taken internally when the itching has taken place in consequence of having eaten too freely of the cakes. And here let me state that an alkali of the above chemical nature, immediately taken and applied to the skin after a bite or sting of the most poisonous insect or reptile, is a good antidote, and will, in most cases, save the unfortunate victim from any serious harm.

Racine, Wis., Feb. 28, 1861. S. W. JEWETT.

What a Couple of Patentees Say.

We publish the annexed letters as specimens of the flattering testimonials we are daily receiving from inventors whose patents were taken out through this office:—

GENTLEMEN:—I received Letters Patent for my second Beehive a few days since, and return you my thanks for your successful efforts—especially so as you have procured a recognition of *all* the claims. I can cheerfully recommend your agency to all inventors and those applying for patents, who wish their business attended to with promptness and dispatch. I have reason to believe that your agency is not only more prompt and successful in this business, but that the expenses attending it are less than when left to others.

I expect soon to send you another application; and, from the confidence I have in you, I shall entertain no doubt but that you will succeed in that also.

Yours, truly, S. R. BRYANT.

Waterford, Pa., March 6, 1861.

GENTLEMEN:—My patent came to hand last night, and am thankful for your promptness in this case. I shall ever remember your kindness, and recommend your agency above all others. O. C. TAYLOR.

Herrickville, Pa., March 4, 1861.

The French System of Weights and Measures.

MESSRS. EDITORS:—It is somewhat surprising that your lynx-eyed correspondents in Maine do not keep you posted up in the resolutions of that go-ahead State.

On the 2d of February, the Governor of Wisconsin delivered to the Legislature the resolutions of Maine, in regard to a uniform system of weights, measures and currency. The ball is rolling from Maine to Texas—on the one side truth, on the other error. Which shall prevail? JAMES EDI.

Verona, Wis., Feb. 29, 1851.

Column of Varieties.

Every person in Great Britain pays annually an average about three pounds sterling for the support of the government.

In 1558 the aggregate tunnage of the whole English navy was only 11,820 tuns, or about one half of the *Great Eastern*.

It costs from four hundred to five hundred dollars to inflate a balloon thirty feet in diameter with hydrogen gas.

About $100,000 worth of hard india-rubber, for the manufacture of combs, is imported annually from the United States into England.

The population of Canada West, by the last census taken, amounts to 1,460,000, that of Canada East 1,300,000—making a total of 2,760,000.

The steamship *Adriatic*, the last vessel built by the late George Steers, and which, from first to last, cost $1,200,000 to build and finish, has been sold to the Galway Company for $436,000.

The ship *Saranak* lately sailed from Philadelphia for Liverpool, having on board 48 cars for city railroads in England. These cars were built in Philadelphia, and contain arrangements for burning gas.

The new Houses of Parliament in London are going to decay rapidly. The ammonia in the fogs which arise from the river Thames this acts upon the stones of the buildings and dissolves them.

Telegraph lines have been carried from Russia in Europe into Asia, and they are now progressing with extraordinary rapidity. Siberia will soon be traversed with them, and it is currently reported that the emperor intends to carry them by a submarine cable to his North American possessions. It is possible that our latest news from London may yet be obtained by the way of Oregon.

The American *Bee Journal* states that the nectar of flowers, as gathered by bees, is a watery solution of cane sugar. In the process of this transformation, the cane sugar is decomposed into three different kinds, which constitute honey. The heat which the bees maintain in the hive causes this change; weak acids, as well as heat and moisture, can effect a similar conversion of cane sugar.

The Philadelphia *Ledger* advocates steam power as a substitute for horses on railroads in that city. We know that steam would be more economical and believe equally safe on city as on country railroads, and the day is not far distant when it will be generally used on them. Some arrangements must be devised, however, to obviate overheating each car by the boiler in warm weather. In winter such heat is desirable; in summer the reverse.

The London *Mechanics' Magazine* states that John Chedgey, of that city, has succeeded in turning and boring glass, and has thus rendered it more applicable to a great variety of useful purposes. He makes glass cylinders perfectly round and smooth; also very strong glass pipes as substitutes for metal in conveying acids and alkalies, and his cylinders are eminently adapted for the barrels of pumps. Glass tubes of moderate bore are quite common, but they are never made with a uniform size of bore.

On the Chicago and Milwaukie Railroad a very beautiful application of the photographic art is use on the "season passes" and "commutation tickets" to prevent their illegal transfer. When a person applies for a season pass or ticket, he incloses his photograph taken on a small gummed label, and this is pasted on the card which he receives. The conductor of the train can thus see at a glance whether the bearer of a pass or ticket carries the evidence of "the right man being in the right place."

About the best known preparation for friction matches consists of gum arabic, 16 parts by weight; phosphorus, 9 parts; niter, 14; peroxyd of manganese, in powder, 16 parts. The gum is first made into a mucilage with water, then the manganese, then the phosphorus, and the whole is heated to about 130° Fah. When the phosphorus is melted, the niter is added, and the whole is thoroughly stirred until the mass is a uniform paste. The wooden matches prepared first with sulphur, are then dipped in this and afterwards dried in the air. Friction papers, for carrying in the pocket, may be made in the same manner, and by adding some gum benzoin to the mucilage they will have an agreeable odor when ignited.

Improved Self-acting Wagon Brake.

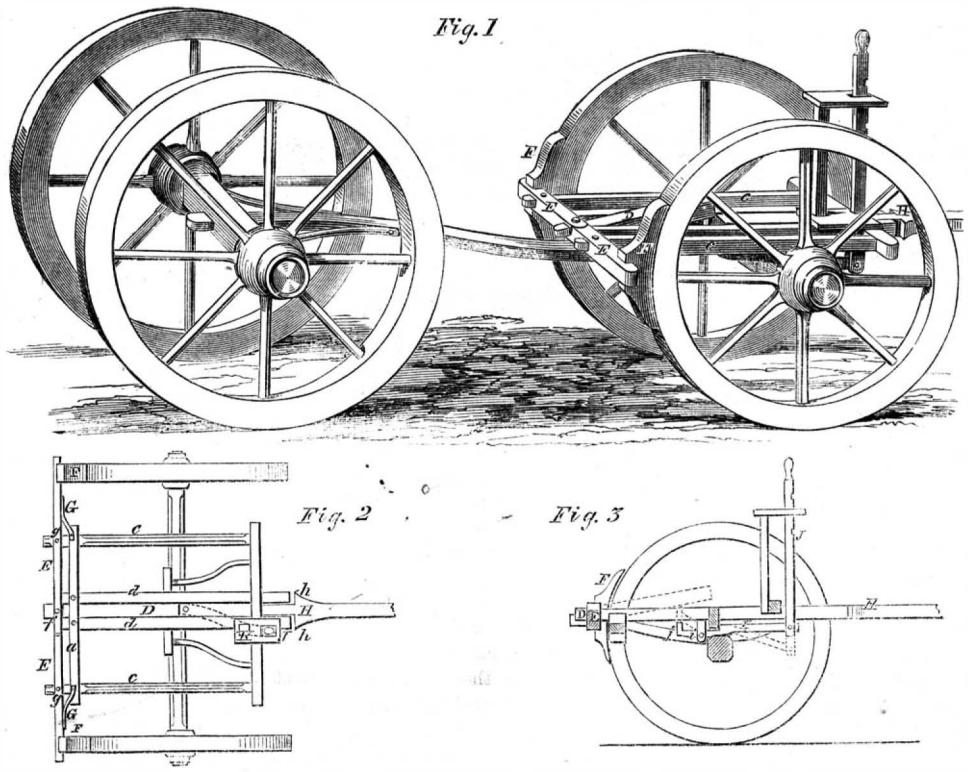
In vehicles to be driven over rough roads simplicity of construction is of prime importance; still, the additional safety and great relief to the team obtained by brakes have caused these appliances to come into general use in heavy wagons, notwithstanding the complication which they introduce into the structure. To reduce this complication to the lowest point has been, for several years, an object of study on the part of numerous inventors. This is the special aim of the invention which we here illustrate. Brakes which are actuated by the team in holding back the vehicle without any attention on the part of the driver are of course the most convenient, but they are subject to the objection of coming into play whenever there is occasion to run the wagon back, unless some arrangement is made for throwing them out of operation. Many such arrangements have been invented, and the only claim to superiority advanced by the inventor of the one here presented is its greater simplicity.

There is no claim to novelty in the brake itself. Two levers, E E, Figs. 2 and 3, are connected by pivots, *g g*, to the bars, *c c*, which are firmly fastened to the front axle, A. The outer ends of the levers, E E, are furnished with shoes to be pressed against the tires of the front wheels, thus increasing the friction and checking the motion of the carriage. The inner ends of these levers are connected by the pivot, *f*, to the short bar, D. The rear end of the draught pole, H, is fitted to slide between the bars, *d d*, and as it is pushed inward by the team holding back when the wagon is descending a hill by its own gravity, it will force back the bar, D, and thus press the shoes, F F, against the wheels. When the pole is drawn forward the shoes, F F, are carried away from the wheels by the pressure of the springs, G G, against the levers, E E.

When it is desired to run the wagon back, the brake is thrown out of action by turning the end of the bar, D, up above the end of the draught pole, H, thus allowing the shoulders *h h*, of the pole to come against the ends of the bars, *d d*. For this purpose the lever, I, is secured by its fulcrum pin, *i*, below the bar, D, the forward end of this lever being bent out to one side of the pole, as shown in Fig. 2. A projection, *j*, is formed on the back end of lever, I, and from its forward end the rod, J, rises up by the side of the driver's seat. Thus it will be seen that, by pressing down the rod, J, the end of the bar, D, is raised, as shown in dotted lines in Fig. 2, when it may be held in place by securing the rod by means of the notches in its front edge.

It will thus be seen that, while this brake acts with perfect certainty to check the wagon in going down hill, it may be very readily thrown out of operation when it is desired to run the wagon back by the power of the team. This has however been accomplished by several previous inventions, and the claim of superiority for this brake rests entirely on its remarkable simplicity, in combination with the certainty and efficiency of its operation, and the ease and convenience with which it is thrown out of action.

The patent for this invention was granted, through the Scientific American Patent Agency, Feb. 7, 1860, and further information in relation to it may be obtained by addressing the inventor, William A. Gibson, Box 319, New York city.



GIBSON'S IMPROVED SELF-ACTING WAGON BRAKE.

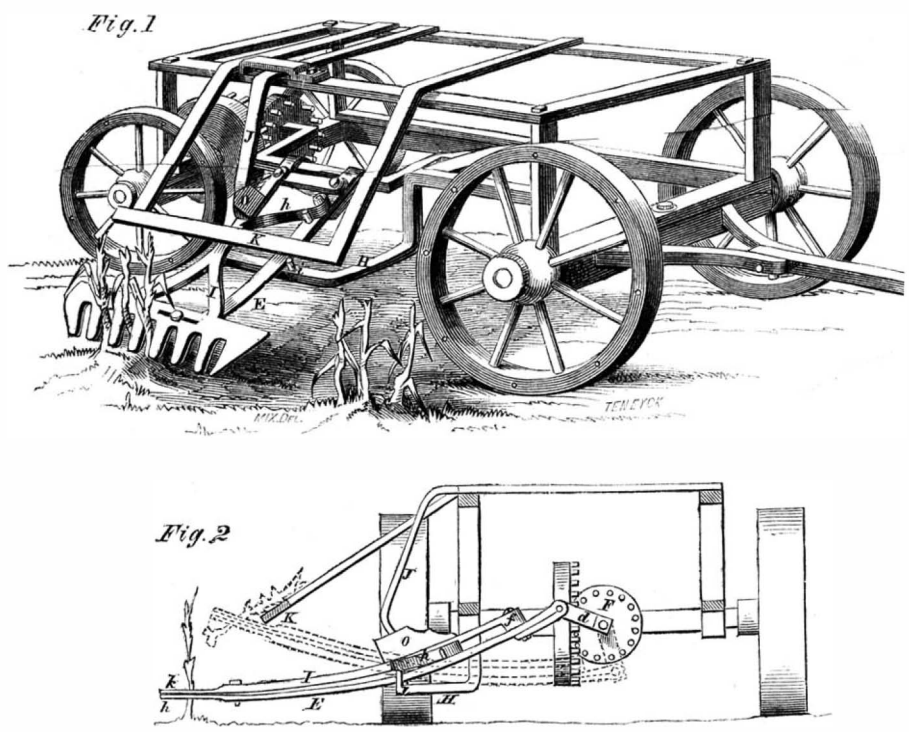
Improved Cotton and Corn Stump Puller.

The roots of the cotton plant penetrate so deeply into the earth that they offer a serious obstruction to the operation of plowing, and this is the case sometimes even with Indian corn stalks, especially in rich soil. The accompanying engraving illustrates a machine recently invented by Josiah Bishop, of Texas, for pulling corn and cotton stumps by means of horse-power.

To a double set of rounded fingers, *h* and *k*, Figs. 1 and 2, a lateral and then an upward motion is imparted by means of the crank, *d*, to which the inner ends of the rods, I and E, carrying these fingers are connected by journals. The upper set of fingers is connected with the lower one by means of a slot and screw, so that it may have a lateral motion in order to press the stalks sideways between the two sets of fingers. This motion is imparted by means of a cam-like projection, *o*, upon the upper rod, I, the side of which, as the rod is pushed outward by the crank, comes in contact with the end of rod, J, and as the fingers are raised by the turning down of the crank this projection is carried away from contact with the rod, J, when the spring, *p*, presses the upper teeth back again into register with the lower ones, thus relaxing the grasp of the teeth upon the stalks. The continued revolution of the crank carries the teeth upward and inward, scraping their upper side against the lower side of the stationary bar, K, and thus effectually clearing them from the stalks which they hold.

Motion is imparted to the crank, *d*, from the back wheels of the carriage by suitable gearing, which must be adapted to the distance apart of the hills in the field. This adjustment is readily altered by having gear wheels of different sizes.

The patent for this invention was procured, through the Scientific American Patent Agency, Feb. 26, 1861, and further information in relation to it may be received by addressing the inventor, Josiah Bishop, at Austin, Texas.



BISHOP'S IMPROVED COTTON AND CORN STUMP PULLER.

Glass Cask.

A patent has been taken out by A. Iubert and U. Cantillon, of Liege, in Belgium, for making small casks and barrels of glass. The idea is to apply glass in the formation of casks of five gallons capacity and downward. They blow the glass in a mold of wood or iron, the mold being in two parts of the form of the cask. A certain portion of the molten glass is introduced into the mold on the end of the glass blower's staff; then the mold is closed and the glass is blown until it assumes the form of the mold and is hollow inside. The tap hole is pierced in the cask with a red hot iron. Small flasks of a barrel-shape made of glass are common, but casks of five-gallon size appear to be an extension of glass application to this particular purpose, and for holding ether, oils, &c. In situations where they are not required to be moved about they will answer a most excellent purpose.

POCKET MATCH SAFE.—A. B. Childs, of London, has taken out a patent for a little safe to carry matches in the pocket. It is so constructed that one match at a time, when required, drops by its own weight to the bottom of the safe, and while being drawn out, it is made to rub against a rough surface and is at once ignited.