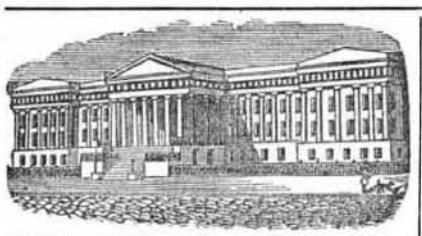

Reported Officially for the Scientific American

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING MARCH 30, 1852

SAUSAGE STUFFERS—By T. W. Bailey, of Lewistown, Pa.: I claim the combination of the three cornered ovoid-shaped cylinder, with the curved spring scraper, operated in the manner and for the purpose set forth.

MILL FOR GRINDING ORES—By Wm. Ball, of Chicopee, Mass.: I claim the combination and arrangement of the two grinding or pulverizing wheels, one or two endless screws, and the troughs which such wheels and screws revolve in, all made and applied so as to operate together, in such manner as to raise the ore up and crush it between the two wheels, and not only return or move the heavier or too weighty particles, towards or back to the wheels, but allow the lighter ones, or sufficiently reduced particles, to flow out of the machine, as described.

EXCAVATING MACHINES—By Charles Bishop, of Norwalk, O.: I do not claim inclining the cutter cylinder; neither do I claim placing the horses within or upon ditching machines, for the purpose of working them: but I claim constructing the inclined wheel, or cutting cylinder that it is made also to serve the purpose of horse-walk, by which means the power of the horse is applied directly to the cylinder itself, without the intervention of other mechanism, substantially as described.

TRUSSES—By F. M. Butler, of New York City: I claim the application of trusses and supporters of the guard spring pad, as described.

MACHINERY FOR SHAVING HEADS OF SCREW BLANKS, RIVETS, etc.—By John Crum, of Ramapo, N. Y.: I claim the movable stop which determines the position of the screw blanks between the jaws, and then returns, to let said blanks fall through, substantially as specified, in combination with the vertical hollow spindle or mandrel, as specified.

And, finally, I claim the feeding tube which conducts the screw blank, &c., to the hollow spindle, substantially as specified, in combination with the cam on the cutter head, or its equivalent, for moving the said tube out of the way of the cutter, as described.

RAZOR STROPS—By John Demerit, of Montpelier, Vt.: I claim the mode of attaching the strop to the case, so that it will not be soiled by the faces of it coming in contact with the case, and so that it will revolve, as described, using for that purpose the aforesaid case, strop, bearing spring, and pivots, in combination.

DREDGING MACHINES—By James Hamilton, of New York City: patented in France Dec. 16, 1845: I do not limit myself to the means described, for raising and lowering the frame, nor to the shapes of the shovels or scoops, or the means of moving them, as other mechanical means, shapes, or arrangements may be used; neither do I limit myself in the number of the shovels or scoops, or the proportions of the parts

First, I claim the shovels or scoops, forming the bottoms of compartments in a proper frame, and moving at one end on a hinge, or similar contrivance—the other end being lowered to cause the scoop, as the frame is moved along, to collect the sand, mud, or other material operated on, and retain the same by suitable mechanical means, operating to lift the scoop and close the bottom, as described.

RICE HULLERS—By Peter McKinlay, of Charleston, S. C.: I claim the combination of the concave, fluted chambers, with the smooth curved, radial beaters, for hulling rice, as set forth.

SHOVEL PLOWS—By W. Fagett, of Stone Bridge, Va.: I claim the construction of the handles, and the principle or mode of shifting the same, as described, with their operation, the invention of the common shovel plow is of course disclaimed.

ELECTRIC WHALING APPARATUS—By Dr. Albert Sonnenburg & Philipp Rechten, of Bremen, Germany (assignors to Christian A. Hainaken, of the United States): We claim the application of electric galvanic current, conveyed by a conductor, to an instrument which is to be thrown into sperm and right whales, as well as other animals of the sea, in order to secure them.

[This invention has been proposed to us a number of times within five years; it can never be made to operate—never.—ED.]

GANG PLOWS.—By Harvey Killam & G. Valleau, of Scottsville, N.Y.: We claim mounting the tongue or pole upon the timbers, and uniting the same by an intermediate jointed connecting rod, to the horizontal coupling rod, which unites the front and rearward ends of the pivotted arms of the axles, whereby the direction or guiding of the gang of plows is regulated by the action of the team itself, in moving in any direction the attendant may require.

We also claim confining the tongue or pole between the horizontal plate and timber, by means of a fulcrum bolt, for the purpose of allowing the tongue or pole to vibrate or move right or left, with the direction of the team, whereby the required direction is given to the propelling and supporting wheels, and whereby the tongue or pole may be shifted or adjusted in its position, to accommodate two or three horses and yet maintain its central draft with the plows.

BEDSTEAD FASTENINGS—By Wm. Shaw, of Clarion, Pa: I claim the combined actions, or the combinations of the link and wedge, as described, for fastening bedsteads.

RAT TRAPS—By James Sheward, of Somerset, O.: I claim the manner of constructing a machine for the killing of animals and throwing their bodies from the trap, and self-setting the same, substantially as described.

APPARATUS FOR BORING ARTESIAN WELLS—By John Thomson, of Kensington, Pa.: I claim the spring or brace, as described, or its equivalent, with the twisted flat bar, or other device, turning systematically the boring instrument, whilst using a rope instead of rods, while sinking a bore-hole in the earth, in search of water or minerals.

SMOOTHING IRONS—By Nicholas Taliaferro, of Augusta, Ky., and Wm. D. Cummings, of Murphysville, Ky.: We claim the application, substantially as described, to a self-heating smoothing iron, or a tube or chamber, at the bottom of the fire box, provided with a registered mouth or inlet some distance above the bottom and at its lower portion, with distributing apertures communicating with the fire, whereby the draft is applied from beneath and equally at every part, and placed under the control of the operator, without permitting the escape of ashes or other refuse of combustion.

CANDLE WICKS—By C. A Wortendyke, of Godwinville, N. J.: I claim a candle wick manufactured as described.

RE-ISSUES.

POWDER-PROOF LOCK—By Wm. Hall, of Boston, Mass. Patented originally Aug. 1, 1848: I claim the combination of the handle, shank, and cam, one or more pins, etc., and their sustaining holes or apertures, in their application to the bolt and one or more tumblers, and as operated, substantially as specified, meaning to claim said combination, as composed of the afore described elements and their accessories.

And I also claim to combine with, or in combination with the bolt and tumblers, a contrivance for throwing or moving the bolt back and forth; another, or a key separate and distinct from such contrivance, and for the purpose of moving the tumblers into correct positions for the bolt to be moved, and which shall be perfectly stationary after it has so moved the tumblers, and a movable plate, or its equivalent, applied to the contrivance, by which the bolt is actuated and made entirely to cover the key, and prevent access to it when the bolt is put in motion—not meaning by the above to claim the separate combination of either of the above mentioned three parts, with the bolt and tumblers, but intending to limit my claim to the combination of all of them therewith, so as to operate in conjunction with them, essentially as specified.

SEED PLANTER—By M. J. Hunt, of Rising Sun, Md. Originally patented June 3, 1851: What I claim is, in combination with the slotted, sliding seed bar, the stationary lugs on the plate, and the concave on the cap, the whole being arranged and constructed as described.

I also claim the combination and arrangement of the double bolt, with its slotted arm, rock shaft, with its arms and pitman, for the double purpose of giving motion to the feeding apparatus, and also regulating the quantity of seed to be sown, when said pitman is operated by a long crank upon which it travels, as shown.

DESIGN.

COOKING STOVE—By S M. Carpenter, of Erie, Pa.

Tenacity of Life in Insects.

However useful insects may be in the general economy of nature, it is but too true that the farmers and gardeners often find them a pest, and with each returning summer the pages of agricultural journals abound with remedies, offensive and defensive, against the obnoxious invaders. In such cases, it becomes desirable to know what remedial means are the most efficacious, and we are glad to find that the question has been taken up by persons competent to discuss it. Among these, Dr. J. Davy, of England, has given the results of his enquiry in a paper, "On the Effects of certain Agents on Insects," which has just been published in the Transactions of the Entomological Society, and is well worth reproduction in a condensed form. The experiments were begun in the winter of 1850, the season, as will be remembered, being so mild that insects were readily met with. Their objects were three-fold—to test the effects of temperature, of gases, and of vapors. In the former, recourse was had to extremes of heat and cold. A bee placed in a temperature of 32° became at first more active, but the next morning was found torpid, as if dead; a register-thermometer showing that 25° had been the lowest temperature during the night. Transferred to a temperature of 52°, the bee revived in half an hour, and on the following day exhibited the same results under the same conditions. A fly which, on December 8, was lively on the wing, in a temperature of 52° in-doors, was disinclined to move at 40°; and still more so, stirring only when touched, at 33°, but did not become torpid, as in the case of the bee, even at 23°, signs of life being distinctly visible. Several trials, made with different species of flies all gave the same result—a remarkable power of sustaining life. The method adopted was to enclose the insects in a glass tube, and place them out of doors all night; and though the tube was frequently covered with frost, they soon revived in a warm temperature of a room. It is scarcely possible to estimate the degree of cold which insect life will bear without destruction, since many of these creatures survive the terrible winters of the arctic regions. Still, a knowledge of the effects of reduction of temperature will be valuable, as affording data by which to judge of the effects and probable duration of visitations of insects, and of the nature of the precautionary measures to be adopted. In an experiment of alternate temperature from 40° to 65°, tried for five days on a bee, the creature at last "ceased to give any sign of vitality."

The influence of heat appears to be much more rapid than that of cold; a fly exposed to a temperature of 120°, died in two or three minutes; and 113° proved fatal to another; while a third, placed in a temperature increased gradually to 96°, remained alive for more than an hour. Others bore from 80° to 90° for two hours; and in one instance, a fly survived from 86° to 100° for several hours, but became uneasy with a slight rise, and died at 105°. A bee, taken on March 15, from a temperature of 45°, was exposed to 80° without any apparent diminution of activity; at 90° it ceased to buzz; and at 96°, ceased altogether to move, and did not revive. Although these results are too few to enable us to determine the laws with respect to the influence of temperature on insects, they may serve a purpose, in showing that the effect is not that gradual one of hybernation, where activity and torpor succeed each other but slowly.

In the series of experiments with gas, it was found that flies placed in carbonic acid gas became instantly motionless, and died if left for any length of time. Some revived after an hour's immersion; others, after two or three hours—the revival being slow in proportion to the time of exposure to the gas. Somewhat similar results were obtained with flies and bees in hydrogen and azote. To try the effect of deprivation, a fly was shut up in a tube with but a small quantity of common air, on the 5th February, in a temperature varying from 52° to 60° during the whole time of the experiment. The insect manifested no uneasiness until the 25th day, and was found dead on the 28th. Another fly, enclosed in a similar tube, with a quantity of air not more than a few times its own volume, became languid on the second day, and motionless on the twelfth, but revived on being taken out.

Flies immersed in oxygen were found dead the second day, with a diminution of the quantity of the gas. Coal-gas produced almost immediate insensibility, with a few feeble attempts at revival, but in no case effectual. Sulphuretted hydrogen also proved especially fatal—an instant's immersion was sufficient to destroy life; though withdrawn at once, not one of the flies recovered. It was the same when the portion of gas diffused in the air of the tube was so minute as to be scarcely appreciable. On bees, too, the effect was similar; the deadly nature of the gas on their delicate organization being invariably destructive. Like results were obtained with chlorine.

In the class of vapors, ammonia proved fatal in one case, and harmless in another; muriatic acid stupified in two, and killed in twenty-four hours. The vapor of nitric acid was equally fatal with sulphuretted hydrogen; and, in alcoholic vapor, at a temperature of 74°, for a few minutes the fly showed increased activity; in a few more it became motionless; after about a quarter of an hour, it appeared to be torpid. Now, exposed to the air of the room, in a few minutes a slight motion of its feet was seen; after a couple of hours, it was nearly as active as before the experiment; two hours later, it was found dead. The same effects, with slight variations, were produced on other flies. With ether, cessation of motion was almost instantaneous, followed, however, by revivification except in one instance; brief immersion in chloroform did not prevent revival, but an exposure of eight minutes killed; camphor and and turpentine were both fatal; with attar of roses, musk, or iodine, no ill effect was perceptible.

The experiments with prussic acid are worthy the attention of entomologists, with whom it is often a matter of importance to kill an insect with the least possible amount of injury. In these instances, the plan pursued was to charge a small tube with the acid, and place it inside that containing the insects. The vapor of 1-16th of a grain was sufficient to destroy bees and flies; and that of seven grains proved fatal to large beetles, and the largest kind of bees. Although as yet the investigation has taken but a limited range, it will be seen that it opens a wide field of research; the next step will be to group or class those agents which appear to have produced similar effects. It is remarkable, as Dr. Davy observes, "that most of the substances which, even in minute portions mixed with common air, prevent the slow combustion of phosphorous, as indicated by its shining in the dark, have the effect on the insects on which they were tried, of suspending animation."

He says further:—"Some of the results may not be undeserving notice for practical purposes—as those in the instances of sulphuretted hydrogen, oil of turpentine, and camphor, in relation to the destruction of parasitical insects, whether infesting plants or minerals, or to the preservation of plants, of course it is necessary that the agents to be used should not exercise on them any materially injurious effects. This must be determined by experiments made expressly for the purpose. The few trials yet made on seeds seem to show that the steeping them in a solution in water of sulphuretted hydrogen has not prevented their germination. The seeds tried were mignonette, cress-seed, and that of a Femophila; analogy—namely, that of steeping the seed of the cerealia in a solution of the white oxide of arsenic, is in favor of the same conclusion. Further, for the preservation of articles, whether of clothing or furniture, it is hardly less necessary that the substances to be employed should have no offensive odor. Judging from the effects of attar of roses, and from what we know of scented woods not being liable to be attacked by insects, the probability is, that any volatile oil of agreeable perfume will answer the purpose required, and prove a true instance of the *utile et dulce* combined.

As carbonic acid gas, and some of the other agents mentioned, produce merely a temporary torpor, it may be a question whether this gas, or simple immersion in water, may not be advantageously substituted for the fumes of burning sulphur, destructive of life, at the yearly gathering of honey; the former, indeed, may be said to be in use in the Levant, where the smoke of the fire of leaves, in which the carbonic acid generated may be considered as chiefly operative, is employed to stupify the bees preparatory to the spoiling of their hives."

Stages and Railroads---Steam Coaches.

A line of omnibusses has commenced to run between Jersey City and Newark, N. J.; the stages are new, and are to run in opposition to steamboats and railroads. Now a very important question arises here, "will these stages pay?" the charge is to be only 12½ cents for nine miles; the same fare as the steamboats, and one half only of the railroad. We have a suggestion to make here, viz., that this road would be a most excellent one for testing the economical value of steam coaches on plank roads. Here would be fair competition, and a fair test of the superiority or inferiority of stages to steam coaches. If the steam coach should prove successful, then we would be justly responsible for having taught and held wrong doctrine. We are willing to bide the result. Without a fair test—a contrasting test of the merits of steam coaches on common or plank roads, no person will be satisfied, and no one should be.

Railroad Accidents.

During the past year 90 lives were lost by railroad accidents in New York, and 50 were maimed and wounded; this is mentioned in the report of the State Engineer, which does not include the accidents on the Hudson River and Harlem Railroads. We have seen a statement in a number of our exchanges, wherein it is asserted that more accidents take place on the English than on the New England railroads. There must be some mistake about such assertions: it is not possible, with our New England system, to run as safe as in England, where no collision can take place except by one train running up behind and into another, a thing which has occurred only once or twice in a number of years.

Irish Peat.

The chemical operations of the Irish Peat Company, which commenced on the 8th of December, have been continued since that time. It is now stated that the results have steadily realized the calculations put forward, and the practicability of employing the waste gases for the purpose of fuel has also been fully demonstrated.

There are many peat bogs in the United States which will yet come into use. At present, we believe, nothing is done with them.