

Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL, AND OTHER IMPROVEMENTS.

VOLUME X.]

NEW-YORK FEBRUARY 3, 1855.

[NUMBER 21.

THE
SCIENTIFIC AMERICAN,
PUBLISHED WEEKLY
At 128 Fulton Street, N. Y. (Sun Buildings.)
BY MUNN & COMPANY.

O. D. MUNN, S. H. WALES, A. E. BRACH.

Agents.

H. Taylor, Baltimore, Md. Dexter & Bro., New York.
Federlen & Co., Boston. B. Dawson, Montreal, C. E.
Stokes & Bro., Philadelphia. M. Boulemet, Mobile, Ala.
G. B. Mitchel, Savannah, Ga. E. W. Wiley, New Orleans.
S. G. Courtenay, Charleston. E. G. Fuller, Halifax, N. S.
D. M. Dewey, Rochester, N. Y. S. W. Fesse, Cincinnati, O.
Avery Bellford & Co., London. M. Gardissal & Co., Paris.

Responsible Agents may also be found in all the principal cities and towns in the United States.

TERMS—\$2 a year:—\$1 in advance and the remainder in six months.

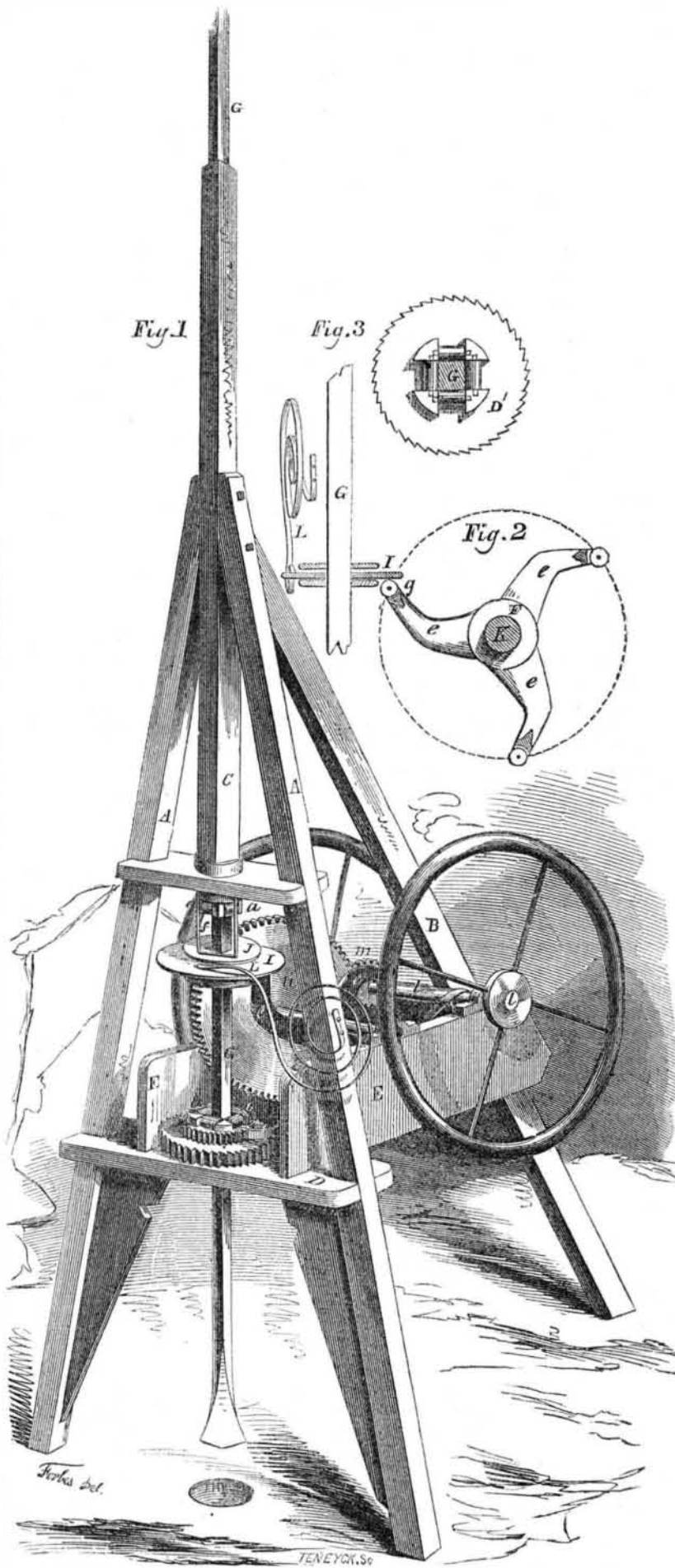
Improved Rock Drill.

The accompanying engravings represent an improvement in rock drills, for which a patent was granted to Edward G. Dunham, of Portland, Conn., on the 10th of last October.

Figure 1 is a perspective view; figure 2 is an elevated section of the lifting arms, the drill bar, and spring, and figure 3 is a top view of the ratchet wheel for turning round the drill bar, G, and it also shows the roller collar box of the drill bar. Similar letters refer to like parts.

A is the frame, with an inclined back post, B, and side bearers, E E; C is the drill box through which the drill bar, G, moves; D is a lower girt of the frame, the upper one sustains the drill box: *l* is the driving shaft with a fly wheel and crank on each end, for one man on each end to operate the machine; *m* is a cog pinion on the main shaft, *l*, gearing into the cog wheel, *n*, on the shaft, K, (figure 2) inside of the frame, on which shaft are the lifter arms, *e e e*, which are cast on a hub, F, secured on said shaft; *g* is a friction roller on the end of each lifter arm. Two long spring ratchets take into the teeth of the ratchet wheels surrounding the drill bar, G, and resting on the lower girt, D. The end of one of these ratchets is shown taking into the teeth of one wheel in figure 1, but nearly all the rest of it is hid. They are secured around the main shaft, and at every revolution take into a new tooth, and thus make the drill strike into a new place every stroke, and gradually revolve it. L is a stout steel spring with one end secured to the frame, and the other resting upon the lifter plate, I, on the drill stock. The recoil of this spring, when the drill falls, imparts additional force, and gives a greater blow than that acquired from the weight of the drill alone; D', in figure 3, is one of the ratchet wheels for moving the drill stock round; *a a* and *b b* are collar boxes with friction rollers in them to allow the drill stock to play smoothly through them; figure 3 shows one of these collars; I is the first friction plate placed loosely on the drill stock, with its central opening a little larger in the diameter than the drill bar. It is held in place by the spring, L, but is also allowed to incline itself, when lifted by the arms, *e*, of the lifter and bite on the drill, and descend with it; J is a small friction plate for catching and holding the bar when not in use, by being inclined and held by a stirrup catch, *f*, figure 1. When not in use for holding the bar, G, this small plate moves up and down loosely with the lifter plate, I. The lifter having three arms, the drill is raised and strikes three times during one revolution of the shaft, K. A worm wheel can be employed to turn the drill, in place of the pallet and ratchet wheels. The drill box, C, may be made to open at one side, so as to take out the drill bar more easily, when required. As the lifter revolves, the arms, *e e e* alternately come under and raise the plate, I, figure 1, and thereby raise the drill, and then

DUNHAM'S IMPROVED ROCK DRILL.



when each has attained to the highest point of its revolution, it slips out, and the drill falls. When it is desired to lift out the drill, the top of the spring, L, is released from the top of the lifter plate, I. There is a soft buffer of leather, or other such substance placed under the lifter plate, I, so as to make it strike softly upon the collar box, *b b*, when the drill falls.

The claims of this patent are in sub-

stance as follows:—1st. Arranging a horizontal plate on the drill rod, and by bringing the lifter in contact with it in the manner described, it will be caused to incline slightly during the raising of the drill bar, and consequently will bite upon said bar, and hold it firmly until it is raised to the position desired, and as the lifter escapes, again assumes nearly a horizontal position, then quits its hold and falls with the drill. 2nd.

Rendering the lifter plate, I, for raising and dropping the drill bar adaptable for removing the said bar entirely out of holes when drilled, by employing the small friction plate, J, on its top, which can be set inclined to hold the drill bar, as it is gradually raised. 3rd. The small plate, J, is claimed, whether used in connection with the plate, I, or not, when it is sufficiently inclined to hold the drill bar by the catch, *f*, by any means employed for so doing this, to retain the bar while the machine is being lifted. 4th. Accelerating the descent of the drill bar, and increasing the force of the blow, and increasing the friction on plate, I, upon the drill bar by the spring, L.

Mr. Dunham informs us that two men with this machine, can do the work of eight. It can drill a perfect round hole from two to ten inches in diameter, and twelve feet deep, without any connecting rod. By means of a tin cannister employed to contain the charge in these holes, the rock can be split in any direction required. The engravings are made from a model of the machine, and are a little different in some points from the drawings of the letters patent, but not in any of the features claimed.

More information may be obtained by letter addressed to the patentee, at Portland, Conn.

Medical Styptic Balsam.

Dr. James Warren gives the following formula for this preparation:—Sulphuric acid, (by weight,) five drachms; oil of turpentine and alcohol, each, two fluid ounces. Place the acid in a mortar, and add the turpentine slowly, stirring constantly with the pestle; then add the alcohol in the same manner, and continue stirring until no more fumes arise, when it must be bottled and stoppered with a ground stopper. The dose is forty drops, to be first incorporated with sugar, and then dissolved in a tea-cup full of water. It may be repeated every hour until three or four doses are taken.

Said to be very efficacious in hæmoptysis, epistaxis, and menorrhagia.—[Medical Recorder, Memphis.]

LETHEAN LINIMENT—This name is given, by Dr. Tilman Douglass, to a liniment made in the following manner:—Digest a bar of fresh turpentine soap and four ounces of gum camphor in a gallon of alcohol, for two weeks, in the heat of the sun. It is then bottled up while hot, and one drachm of chloroform added to every four ounces, set in a cool place and shaken occasionally while coagulating. The mode of applying it is, to coat the part well, and cover it immediately with paper, which will adhere firmly, and produce a gentle burning, tingling, sensation, which in neuralgia, rheumatism, irritability of the stomach, cramps, colic, &c., is perfectly delightful.—[Memphis Medical Recorder.]

Statue to Franklin.

A statue of Benj. Franklin is to be erected in Boston, costing \$10,000. Greenough, the sculptor, is at the work, and it is expected that he will have it completed by 1856. It is to be of bronze and eight feet in height. The casting is from the manufactory of Mr. Ames. It represents Franklin in citizen's dress, with a cane in his right hand, and his cocked hat under his left arm. The entire cost of the statue and bas-reliefs will be \$18,000.

Extension of Patents by Congress.

A great number of petitions have been sent in to Congress against extending the three patents for reaping machines, viz: Hussey's, McCormick's, and Moore and Hascall's.