

Science and Art.

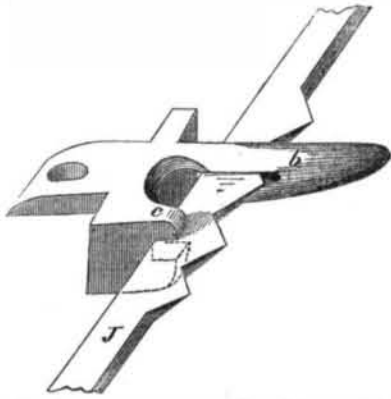
History of Reaping Machines.—No. 23.

On the 30th Aug., 1853, F. Nishwitz, of Williamsburgh N. Y. (now a part of Brooklyn,) obtained a patent embracing two claims (see page 3, Vol. 9, Sci. Am.,) but from which no proper idea can be obtained of the improvements. These consist in a peculiar construction and arrangement of the cutters, and the manner by which the grain is laid in proper order on the ground after being cut. The cutters are placed in pairs in a spiral curve round a shaft, and being set at right angles to it, are carried round as the shaft rotates, cutting the grain in their revolution. Directly behind the shaft is the front board of the machine, on the upper part of which are secured a series of painted fingers, slotted to receive the cutters as the shaft rotates, and they are set at such an angle that the grass or grain is bent in a suitable direction for the cutters to operate with certainty. The grass or grain on being cut, falls against a number of belts provided with spikes, which pass around flanged pulleys, carry the grain, and then deposit it upon curved guides, which lay the butts of the grain stalks towards the machine as they fall upon the ground.

Philo Sylla, and Augustus Adams, of Elgin, Ill., obtained a patent on the 20th of September, 1853, embracing three claims, two for the method of allowing the sickle and bar to vibrate in cutting grass on uneven ground, and the third for the stands of binders, to allow them to stand lower than the horizontal platform, and to allow them to build the sheaves with greater ease, (see claim, page 19, Vol. 9, Sci. Am.) On the 8th of November, same year, a patent was granted to S. S. Allen, of Salem, N. J., covering four claims, all relating to the cutting gear; three relating to the balancing of the cutter bar and blades with the driving wheel, &c., and the fourth embracing a roughened surface on the under side of the cutter blades, and the upper side having a shear-cutting edge, to prevent choking. An oil box was also attached to the cutter bar, (see claims on page 75, Vol. 9, Sci. Am.) On the 22nd of the same month, a patent was granted to William Pierpont, of Salem, N. J., embracing hanging the cutter blade at each end to a crank to give a peculiar draw cut to the cutter, (see claim on page 91, Vol. 9, Sci. Am.) On the 13th of December following, a patent was obtained by J. E. Nesen, of Buffalo, N. Y., (which was also secured by patent in England,) embracing three claims, one for receiving the grain on a revolving belt, having an intermittent motion to receive grain in quantities of bunches, and carry them to the binding hooks; also gathering the grain in bunches by binding hooks; and lastly, the combination of the binding hooks and intermittent endless apron, (see claim on page 115, Vol. 9, Sci. Am.) On the 20th of same month, J. E. Brown, and S. L. Bartlett, of Woonsocket, R. I., obtained a patent containing five claims, for a rotating edged knife, to cut both ways, and a method of operating it, (see page 131, Vol. 9, Sci. Am.) On the same page are the two claims of a patent granted to Uriah H. Goble, of Springfield, Ohio. One embraces making the driving wheel with a conical tread, to counteract the tendency of the machine to run into the uncut grain, to avoid side draft, and balance the machine. The other embraces hinging the platform immediately in the rear of the cutters, and giving it a rising and falling motion, by a rotating cam and lever (easily understood,) to conform to the motions of the reel or rake to retain or facilitate the discharge of the cut grain in bunches from the platform. Figure 48 is a perspective view of the cutter bar and the guard fingers on Mr. Goble's machine. A space is left entirely around the cutter bar, when it passes through the guard fingers, this space being enlarged at the rear of the bar, and the bar is supported in guide boxes placed between the fingers, to prevent clogging. *b* is the guard finger with its opening through the cutter; *J* is the cutter bar; *c* is a guide box. The space is so wide behind

the cutter bar, that any grass or grain will drop out if it gets in.

FIG. 48.



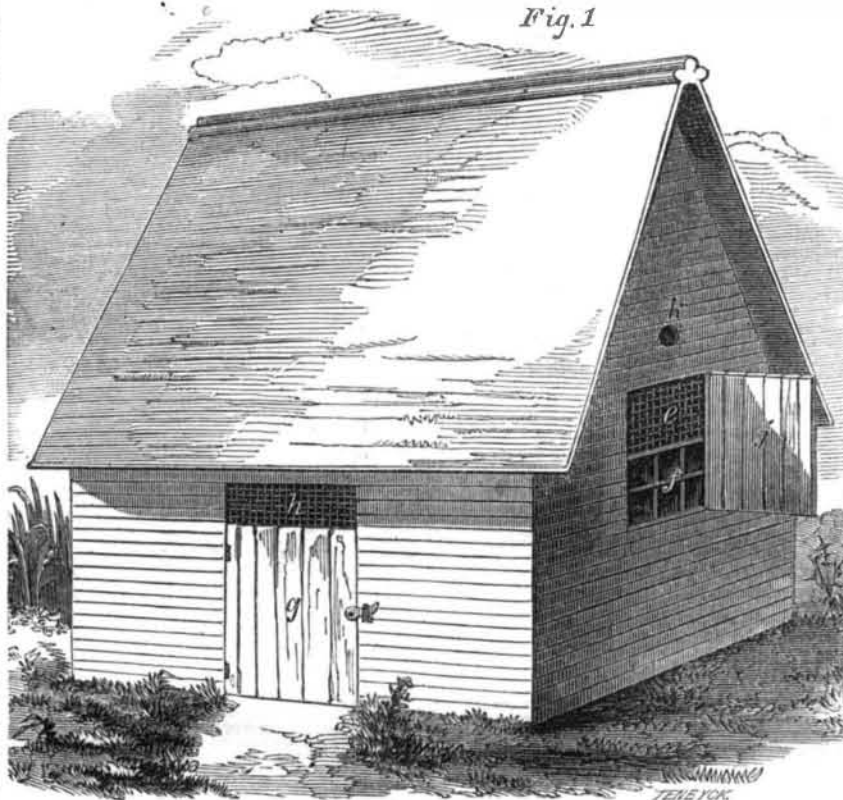
On the same page are the claims of the

patent granted to the brothers W. & T. Schnebly, of this city, old harvester inventors. One embraces a mode of regulating the length of the cutter stroke, the second the making of hollow guard teeth, each in a single piece, and the third a self-acting rake with jointed fingers.

On page 155, Vol. 9, Sci. Am., are sixteen claims of a patent granted on a harvesting machine to P. H. Watson, and E. S. Renwick, of Washington, D. C. The patent is ante-dated June 6th, 1853, was omitted in the patent list of Dec. 6th, and was issued with the list of Jan. 10th, 1854. The object of the improvements is to cut, rake, tie the grain, and deposit them in tied bunches, all automatically. The machine is very complicated. We have never heard of its being used; but it is said to be very ingeniously devised.

IMPROVEMENT IN GRANARIES.

Fig. 1

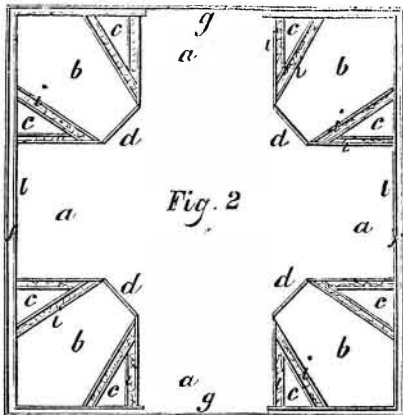


The annexed engravings are views of an improvement in granaries, for which a patent was granted to Ebenezer Ford, of Spring Cottage, Miss., on the 24th of last October.

The nature of the improvement consists in erecting a building having double walls and double floors, furnishing the same with double partitions, the walls, floors, and partitions being filled in with salt, in order to prevent the attacks of insects.

Figure 1 is a perspective view of the granary, and figure 2 is a horizontal section of the same.

*a* is the flooring; *b c* are compartments; *d* are doors; *e* a wire gauze; *f* are windows; *g* is the door; *h* is wire gauze on the same; *i* are partitions; *k* the smoke hole; *l* are the walls.



The building intended for a granary constructed on this plan is built in the usual manner, except that the walls, *b*, are made double, one side of the other, the space between being filled in with salt. The partitions, *i*, are so constructed in the same manner, so that between the different compartments, *a b c*, there are double partitions containing a filling of salt. When the granary is finished and ready for use, the floor should

be saturated with salt brine. The house is now to be smoked by the introduction of a stove pipe, through the hole, *k*, the pipe being connected outside with an ordinary stove, the smoke being carried through the hole, *k*, directly into the interior of the building—sawdust, or any kind of wood used in smoking meat, will answer. When the house is being smoked the doors and windows should all be closed, but in clear weather the windows may be opened for ventilation. The grain may now be put in, and if in bulk it should be thrown up against the walls, slanting down towards the corners of the granaries. The partitions between the compartments are high where they join the walls of the building, and slant down quite low towards the center of the same, which permits the introduction of light in the various parts. The house should be smoked at least once a month with sulphur, and likewise with wood and sawdust during cloudy or sultry weather, which are the periods when the weevil and other insects generate. If no insects be carried into the granary with the grain, none will appear during the season—should any have been carried in, they will perish, and not generate any more. The object of the gauze at the top of the doors and the windows is to admit currents of cold air when an opportunity occurs. Salt is a substance very destructive to insects. By the employment of smoke in the manner described, any superabundant moisture occasioned by the use of salt will be carried off, and the condition of the granary may be at all times properly preserved.

The claim is as follows:—I am aware that salt has long been used as a filling between the timbers of ships, and also between the walls of ice houses; and therefore to such devices I make no claim. But I claim the mode herein described for making granaries,

having the walls, floors, and partitions filled in with common salt, in the manner substantially as set forth.

More information may be obtained by letter addressed to the patentee at Spring Cottage, Marion Co., Miss.

New Steam Mill.

The Worcester Transcript (Mass.) speaks in high terms of a new steam engine built by the Lawrence Machine Shop Co., of which Gordon McKay is agent, and Mr. Hadly Superintendent, for Mr. Merrifield, of that city. It is a beam engine with a cylinder 40 inches bore, and six feet stroke, and is the largest in that section of country. It is a condensing engine, and stated to be low pressure.

Steamship Arabia on Fire.

The steamship *Arabia*, the best of the Cunard line, which has been employed for conveying French troops to the Crimea, took fire at Balaklava, but it was soon extinguished. It was lying alongside of a ship containing 1000 tons of gunpowder. Had it blown up, there would have been a scene.

LITERARY NOTICES.

COACHMAKERS' GUIDE.—The March number of this excellent work, by C. W. Saladee, Columbus, Ohio, contains two plates of figures, illustrating a fashionable "Gipsy Top Buggy," a "City Calash," and a "Farmer's Carriage." It also contains a number of wood cuts, illustrating improvements in carriages, harness, and the art. The illustrated history of wheel carriages is continued; it is very interesting.

THE NAUTICAL MAGAZINE.—The March number of this useful Magazine, by Griffiths and Bates, No. 115 Nassau St., this city, is illustrated with a plate of the "Six Days Steamer," of the "William Morris," which was to cross the Atlantic in six days. It contains an excellent article on Capt. Whittaker's method of propulsion, by substituting side screws for paddle wheels, as noticed in the Sci. Am. three weeks ago.

THE MEDICAL EXAMINER, for March, published by Lindsay & Blackiston, Philadelphia, and edited by Dr. Hollingworth, contains a number of very excellent articles: one on the "Medicinal Effects of Salaratus," which criticizes Dr. Alcott's article in the *Boston Medical and Surgical Journal*, on its dangerous use, as being the cause of excessive mortality among American children.

THE ECLECTIC MEDICAL JOURNAL, for this month, conducted by Drs. Buchanan and Newton, of Cincinnati, contains a long and interesting article on the cause, nature, and prevention of Cholera, by Prof. Knapp.



Inventors, and Manufacturers

The Tenth Volume of the SCIENTIFIC AMERICAN commenced on the 16th of September. It is an ILLUSTRATED PERIODICAL, devoted chiefly to the promulgation of information relating to the various Mechanic and Ohemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of PRACTICAL SCIENCE is calculated to advance.

Its general contents embrace notices of the LATEST AND BEST SCIENTIFIC, MECHANICAL, CHEMICAL, AND AGRICULTURAL DISCOVERIES, —with Editorial comments explaining their application; notices of NEW PROCESSES in all branches of Manufactures; PRACTICAL HINTS on Machinery; informations to STEAM, and all processes to which its application is applicable; also Mining, Millwrighting, Dyeing, and all arts involving CHEMICAL SCIENCE; Engineering, Architecture; comprehensive SCIENTIFIC MEMORANDA: Proceedings of Scientific Bodies; Accounts of Exhibitions, —together with news and information upon THOUSANDS OF OTHER SUBJECTS.

Reports of U. S. PATENTS granted are also published every week, including OFFICIAL COPIES of all the PATENT CLAIMS; these Claims are published in the Scientific American IN ADVANCE OF ALL OTHER PAPERS.

The CONTRIBUTORS to the Scientific American are among the MOST EMINENT scientific and practical men of the times. The Editorial Department is universally acknowledged to be conducted with GREAT ABILITY, and to be distinguished, not only for the excellence and truthfulness of its discussions, but for the fearlessness with which error is combated and false theories are exploded.

Mechanics, Inventors, Engineers, Chemists, Manufacturers, Agriculturists, and PEOPLE IN EVERY PROFESSION IN LIFE, will find the SCIENTIFIC AMERICAN to be of great value in their respective callings. Its counsels and suggestions will save them HUNDREDS OF DOLLARS annually, besides affording them a continual source of knowledge, the experience of which is beyond pecuniary estimate.

The SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with SEVERAL HUNDRED ORIGINAL ENGRAVINGS.

TERMS: TERMS!! TERMS

One Copy, for One Year	\$3
" " Six Months	\$1
Five Copies, for Six Months	\$4
Ten Copies for Six Months,	\$8
Ten Copies, for Twelve Months	\$15
Fifteen Copies for Twelve Months	\$23
Twenty Copies for Twelve Months	\$28

Southern, Western, and Canada Money taken at par for Subscriptions, or Post Office Stamps taken at their par value. Letters should be directed (post-paid) to MUNN & CO. 128 Fulton street, New York.