

212.—J. W. Sprague, of Rochester, N. Y., assignor to himself, G. B. Redfield, trustee (for the benefit of C. Gates), James Jones and A. W. Tyrrell, of same place, for an Improvement in Fire-escapes:

I claim, first, The braces, C C, combined with the levers, A A, and struts, B B, when the same are constructed and operated substantially as described for the purpose aforesaid. Second, The combination of the platforms, M M, the ladders, L L, and the guidebars, N N, when the same are constructed and operated substantially as described. Third, The combination of the upper platform, O, the revolving platform, P, and the sliding platform, K, substantially as described. Fourth, The attachment of the wagon frame to the axles in such a manner as to allow the wagon frame to be leveled, by means of the sliding wedges, Y Y, substantially as described. Fifth, The arrangement of the cams, I I, in combination with the ratchets, H H, and with the brakes, in such a manner that the act of raising the ratchets shall tighten the brakes, substantially as described.

RE-ISSUES.

25.—Samuel Barley and J. H. Barley, of Longwood, Mo., for an Improvement in Harvesters:

I claim, first, The arrangement of the oblique bars, a' a', of the frame, the latter bar, a'', extending over or within a vertical line with the shoe or lower part, b'', of the frame, D, in connection with the long axle, B, with the driving and grain wheels, A A', on either end, and as for the purpose set forth. Second, The arrangement of the rake-bar and head, c' c', to operate in combination with the guard plate, S, crank, d', shafts, e' Q, and platform, I, as shown and described. Third, We do not claim broadly the invention of the divider; but we do claim the arrangement of the horn-shaped divider, T, to revolve, so that it can be adjusted to any desired position in the manner shown and described.

26.—Willis Humiston, of Troy, N. Y., for an Improvement in Machines for Molding Candles:

I claim, first, The combination of the candle tip mold, a, with the drive rod, D, as and for the purposes described and set forth. Second, The combination of the said candle tip mold, a, connected and combined with the drive rod, D, with the candle mold or tube, B, as and for the purpose set forth and described. Third, The clamping of the candles in the position in which they are driven or forced from the molds or tubes, B, and thus and thereby holding them during the operation of casting or molding candles in the said molds or tubes, B, directly below, until the said candles in the said molds are ready to be removed therefrom, substantially as described and set forth. Fourth, The adjusting and holding the wick (for the candles) in the center of the said molds or tubes, B, by the use of the said clamps, F, and the candle therein firmly secured by means thereof, in connection with the said candle tip mold, a, attached to said drive rod, D, substantially as described and set forth.

27.—Willis Humiston, of Troy, N. Y., for an Improvement in Apparatuses for Molding Candles:

I claim, first, The wicking the candle molds, a, by means of the grippers or pinchers, D, in connection with the reel of spool containing the wick below, as described and set forth. Second, I also claim the suspending of the candles in and upon a center line with the molds, A, directly below, by means of the grippers or pinchers, D, in connection with the tip of the said mold, as and for the purpose described and set forth. Third, I also claim the gripping of the candle wicks, by means of the said grippers or pinchers, D, or their equivalents, and by the same drawing the candles from their respective molds and suspending the same above the molds until the next series of candles are molded and then suspended are cut from the wick and removed in the manner and for the purpose described and set forth.



S. A. W., of Mass.—We thank you for the list of names you send us. We do not think your hand power attached to a churn, or any other domestic machine like a washing or sewing machine, is patentable; but if you desire it, we can have an examination made at the Patent Office, and thus be able to give you more satisfactory advice. The price of the examination is \$5. A number of patented straw-cutters have the knife arranged on a wheel, so adjusted as to make a drawing cut. In some of the early volumes of the SCIENTIFIC AMERICAN you will find engravings of such machines.

R. R. T., of N. Y.—India-rubber varnish, made by dissolving india-rubber in benzole, is suitable, we think, for protecting the seams of glass door plates and preventing the entrance of moisture. India-rubber dissolves in turpentine, but the varnish thus made dries very slowly. To make a superior black japan varnish for iron work, take 50 lbs. of asphaltum and 8 lbs. of gum anime, and fuse them together in an iron vessel. In another vessel place 12 gallons of drying linseed oil and bring it to the boiling point; then pour this among the fused asphalt and gum, and boil them all together with effectual stirring until they are completely incorporated and have attained to a roapy consistency; take it off and cool, then thin it down for use with spirits of turpentine. It should be applied to iron work in several successive coats, each of which should be thoroughly dried in an oven heated to 212° or 300° Fah. The addition of some "amber varnish," made with amber beiled in linseed oil, greatly improves common asphalt varnish, but increases its expense.

A. T., of Canada.—Your plan for superseding the negro minstrels by a band of singers dressed in burlesque costume to represent different nations, we have no doubt would be a very profitable enterprise if well managed. The community is always ready to pay for good simple music. There would be no possibility, however, of your obtaining a grant for an exclusive right to the business from the United States government. Exclusive rights are granted only by general laws, and the idea is not patentable. The right of acting any original play may be secured under the copyright law.

J. V. B., of Ind.—We did not receive your plan of a school house. The water raised by an Archimedes screw discharged upon a water wheel would not turn the wheel with sufficient force to work the screw. It would just do it provided there was no friction of the machinery or of the water in its passage through the tube, nor any other resistance except mere gravitation, and provided that the water could be discharged upon the wheel so as to utilize its whole power. Even then you would barely raise the water, and would have no surplus power for other purposes.

P. D. G., of Minn.—To harden a steel plowshare without having it twist, prepare a bath of naphtha heated to 200° Fah., and after heating your steel, as usual, to a cherry red, plunge it into the bath till the naphtha boils, then withdraw it and plunge it into cold water. Draw the temper in the usual manner.

J. S., of Pa.—You can buy steel punches with letters on their ends, for making stamps, at William Ward's, 47 Chatham-street, this city, for 18 cents apiece. These are tapered at their lower end, but he will have them made for you in the form of type, at about the same price. These punches, as well as the stamps, are made by men who have learned their art, like any other trade.

J. M. L., of Ind.—You can make the india-rubber cement, yourself, for shoe soles, by dissolving shreds of india-rubber in refined turpentine, or what is better, in good naphtha. Gutta-percha dissolved in naphtha makes a good cement also. We do not know where such cements are sold.

C. W., of N. Y.—A horse power is a power which will raise 33,000 lbs. one foot high in one minute. The machinist's trade is a very good one for a boy to learn. It would be well for him to get as good an education as possible before going to his trade.

S. C., of Ind.—Boiled linseed oil is the best substance known to us for making waterproof tarpaulins. Resin varnishes will not answer for this purpose, because they become quite hard when dry.

R. M. G., of N. Y.—Large numbers of envelopes are manufactured with business cards in water lines upon their face.

E. G., of Conn.—The only effect of the crank motion on the power, is that of increasing the friction in certain parts of the shaft.

G. W. T., of Del.—A continuous motive power cannot be obtained from a permanent magnet. Was not the machine which you saw driven by steam or some other power?

N. S. B., of Ill., and J. W. H., of Iowa.—Our opinion coincides fully with yours in regard to the economy of working steam expansively in high pressure engines.

J. F. W., of Wis.—Your plan for superseding flat belts with ropes, for driving machinery is objectionable on account of the increased friction. It is surprising how little disposed a belt is to slip on a pulley; there is no difficulty from this source.

W. P. K., of Mass.—The light to which mercury would rise in a thermometer tube 1/4 inch bore, subjected to a temperature of 12° Fah., would depend on the size of the bulb.

E. B., of Pa.—Glass blowers split up long cylinders of glass by first drawing a reel rod of iron along each cylinder on the line in which it is to be divided, then snapping it between the thumb and fingers of the two hands. By this mode, you can divide your long glass tubes into several short ones.

A. McE., of N. Y.—We really do not know how you can unite cast iron with wrought iron "perfectly." In a mold, by pouring the cast iron with wrought iron, unless the latter is heated to about the welding temperature. Wrought iron rods, for railings, are tied at their intersecting points, with cast iron run round the rods in small, hard molds; but although this method holds them together more firmly than simple riveting, still the two metals are not fused together.

J. M. G., of Ohio.—No power is lost by yoking the cranks of two piston rods in line with the shaft of a saw mill. The cranks of two engines are usually yoked at right angles to one another, to produce regularity of motion.

T. B., of Ind.—We believe that a patent may be obtained for treating molds for gold castings, as you have described, if it is found to be an improvement on the common modes of casting. All the engines of steamships are fitted with counters which indicate the revolutions of the main shaft during each voyage; you therefore could not obtain a patent for such an instrument. No advantage would be secured by coating iron telegraph wires with copper; better use solid copper wires which have just eight times the conducting capacity of iron.

A. M. O., of Wis.—The substance which you send us is clay colored with peroxid of iron. It is worthless except, perhaps, for making brick.

H. M. H., of Pa.—We are not able to give you the names of the principal operators at the oil mills at Franklin.

S. T. R., of N. Y.—The aeroplane is essentially the same instrument as the calipe. It consists of a series of steam whistles, of different sizes, to sound the several notes of the gamut, with valves and keys to let the steam into such as may be necessary to produce the music desired. It was patented by J. C. Stoddard, in the United States and Great Britain.

M. Q. P., of Mass.—The old way of polishing cabinet work, without varnish, was by rubbing over its surface with a little sweet oil, then rubbing down vigorously with a cushion of silk; an old silk handkerchief would answer your purpose.

A. J. B., of Kansas.—The pencil point which you have sent us appears to be composed of tin and lead. Without a chemical analysis, it would be impossible to tell its real composition.

Money Received

At the Scientific American Office on account of Patent Office business, for the week ending Saturday, Jan. 26, 1861:—

- H. & N. H., of N. Y., \$30; T. D. L., of Mich., \$55; S. F., of Pa., \$55; R. & McT., of N. Y., \$40; T. H. G., of Wis., \$100; E. C., of Conn., \$32; M. S., of N. Y., \$55; A. M., of N. Y., \$150; C. T. S., of N. Y., \$30; J. A. M., of Mo., \$30; A. R., of Mich., \$25; S. & R. W. C., of Ohio, \$25; J. E. T., of N. Y., \$150; N. & S., of Conn., \$10; D. K., of Pa., \$25; L. M., of Wis., \$55; J. M. R., of Ky., \$30; J. S. S., of N. Y., \$55; O. S., Jr., of Va., \$25; F. C. T., of N. Y., \$25; S. McL., of N. Y., \$30; D. M. C., of Ind., \$20; A. L. W., of N. Y., \$20; T. C., of N. Y., \$48; J. O. Jr., of N. H., \$20; S. & S., of N. Y., \$30; E. P., of Conn., \$55; L. R., of Conn., \$64; S. & R., of N. Y., \$30; A. D. B., of Mass., \$25; S. T. B., of R. I., \$100; A. M., of Maine, \$35; F. D., of Ohio, \$25; T. & E., of Pa., \$30; J. M. W., of N. Y., \$40; J. E., of Maine, \$30; B. R., of N. Y., \$30; J. & D. B., of N. J., \$25; C. & C., of N. Y., \$25; S. McL., of N. Y., \$25; G. S. T., of Mich., \$25; J. S., of Texas, \$25; B. R., of N. Y., \$21; R. & T. S., of Cal., \$250; W. N. M., of Mass., \$30; W. F. S., of Ohio, \$25; C. G. D., of N. Y., \$25; I. D. S., of N. Y., \$30; E. T. C., of Mass., \$25; S. K. W., of N. Y., \$10; P. D. B., of Mass., \$25; W. H., of Iowa, \$21; L. & M., of N. Y., 25.

Specifications, drawings and models belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Jan. 26, 1861:—

- R. & McC., of N. Y.; L. P., of Conn. (2 cases); D. K., of Pa.; H. D., of Ohio; A. M., of Maine; A. D. B., of Mass.; J. M. R., of Ky.; T. C., Jr., of N. Y.; S. & R. W. C., of Ohio; R. S., of N. J.; J. & D. B., of N. J.; E. P., of Conn.; J. S. S., of N. Y.; J. R. R., of Mass. (3 cases); J. & A. J. R., of Mich.; O. S., Jr., of Va.; J. M. P., of Ohio; C. & C., of N. Y.; W. F. S., of Ohio; E. T. C., of Mass.; S. McL., of N. Y.; T. & L., of Mich.; B. R., of N. Y.; J. S., of Texas; W. W. V., of Cal.

New Books and Periodicals Received.

NEGROES AND NEGRO "SLAVERY." The first an inferior Race; the latter its Normal Condition. By J. H. Van Eyck, M. D. The above work has been received from the publishers, Van Eyck, Horton & Co., No. 162 Nassau-street, New York.

THE ATLANTIC MONTHLY, for February.—Published by Ticknor & Fields, Boston. In the "Professor's Story," Dr. Holmes gives this opinion of a kiss: "So Mr. Bernard thanked Helen for her interest without the aid of the twenty-seventh letter of the alphabet—the love labial—the limping consonant which it takes two to speak plain."

THE AMERICAN JOURNAL OF PHOTOGRAPHY.—Edited and published by Charles A. Seeley, No. 424 Broadway, New York. The editor's thorough mastery of the art and science of photography, as well as the kindred sciences, gives a peculiar reliability to the statements of this journal.

BIBLIOTHECA SACRA AND BIBLICAL REPOSITORY.—Published by Warren F. Draper, Andover, Mass. This is a theological and classical quarterly, the organ of what is called "New England Theology." It is edited by Professors Park and Taylor, and has a world-wide reputation for learning. The number for the present quarter contains an able article on the philosophy of Sir William Hamilton and his recent theological teachings.

Important Hints to Our Readers.

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A pamphlet of information concerning the proper course to be pursued in obtaining patents through their Agency, the requirements of the Patent Office, &c., may be had gratis upon application at the Principal Office, or either of the Branches. They also furnish a Circular of Information about Foreign Patents.

The annexed letters, from the last three Commissioners of Patents, we commend to the perusal of all persons interested in obtaining Patents. Messrs. MUNN & CO.—I take pleasure in stating that, while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE CAME THROUGH YOUR HANDS. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the Office, a marked degree of promptness, skill and fidelity to the interests of your employers. Yours, very truly, CHAS. MASON.

Immediately after the appointment of Mr. Holt to the office of Postmaster-General of the United States, he addressed to us the subjoined very gratifying testimonial:— Messrs. MUNN & CO.—It affords me much pleasure to bear testimony to the able and efficient manner in which you have discharged your duties of Solicitors of Patents while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and I doubt not, justly deserved) the reputation of energy, marked ability and uncompromising fidelity in performing your professional engagements. Very respectfully, Your obedient servant, J. HOLT.

Messrs. MUNN & CO.—Gentlemen: It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your agency, and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully, Your obedient servant, WM. D. BISHOP.

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**The North Atlantic Telegraph.**

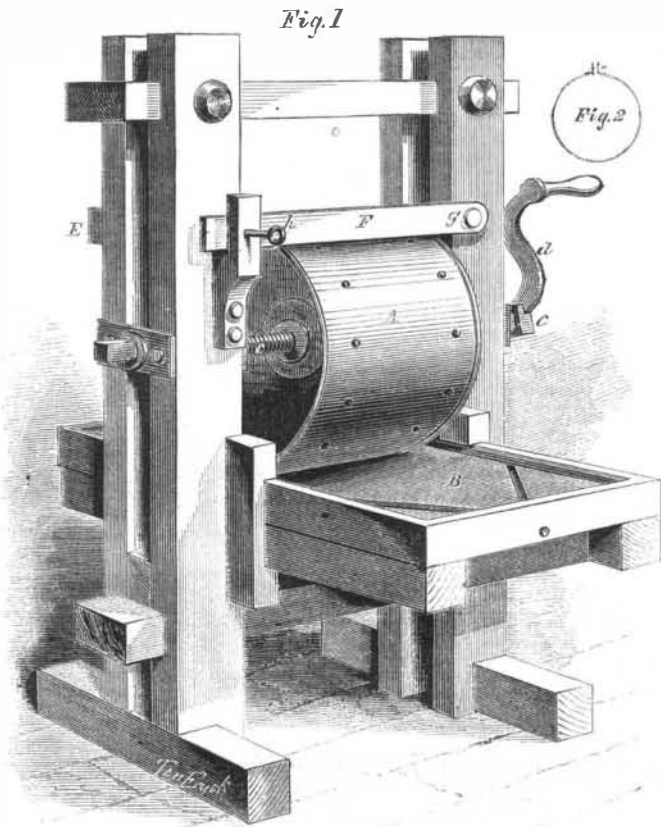
On page 41, Vol. III. (new series) of the SCIENTIFIC AMERICAN, we gave a brief account of this project, and the survey which had been made of the route by T. P. Shaffner, Esq., the originator of the enterprise. We also stated that the British government had furnished the ship *Bulldog* to resurvey the entire route through the Northern seas, and report upon the practicability of laying several marine cables so as to provide an ocean telegraph between Europe and America. This surveying expedition returned to England last month, and its commander, F. Leopold McClintock, has made a report of his labors. This survey has corroborated that made by Mr. Shaffner in his schooner last spring, and the practicability of the route is now believed to be a settled question. Capt. McClintock says: "The contour of the sea bottom, and depth of the ocean throughout, is decidedly favorable, and the soundings very regular."

The plan is to lay a cable from the north shore of Scotland to the Faroe Islands, another from thence to Iceland; another to the coast of Greenland, and the last to the coast of Labrador. There will, therefore, be no less than three relay stations on this route; and, it is to be hoped, that although two of the cables will be about 600 miles long, they will be worked without difficulty. It had been supposed that the drift ice in the Northern seas would render the laying of the cables an impossibility, but Capt. McClintock has given the following different opinion: "As for the short lengths of cable between Scotland and Faroe, and from thence to the east shore of Iceland, no difficulties need be encountered; there are certain channels between the Faroe Isles where the tides are very strong, but there are also still-water creeks, and these, I presume, will be selected for landing the shore ends. \* \* \* The shores of Iceland are only visited by drift ice about seven or eight times in each century, and it is only upon two or three of these occasions that the drift ice is sufficiently extensive to reach the south side and surround the whole island. True icebergs are never seen; the heavy masses often so called, are small enough to float freely in comparatively shallow water, so that a cable would remain undisturbed at the bottom, the shore end being carried up a fiord." In a letter to Sir Charles Bright (of Atlantic Telegraph Cable notoriety), he states that a land line should be laid across Iceland to Faxe Bay, which never freezes, and where drift ice is seldom seen. He believes that a cable may be laid down in the autumnal months without obstructions, and that its shore ends may be carried into bays perfectly secured from icebergs and drift ice. A suitable situation for landing the shore end of the cable on Labrador has yet to be sought, but no obstacle to this is believed to exist. Captain A. Young, also of the expedition, in his reports addressed to Mr. J. R. Croskey, states that his decided opinion is unfavorable to the practicability of the undertaking; and that "the cable once laid, no drift ice can in any way injure it, if the proper precautions are taken in securing the shore end." Dr. Rae has also made a report, stating that he does not believe the ice, either in the form of floe or bergs, can injure a cable if once down, and that in ordinary seasons a cable may be laid without much difficulty. The delegates which were sent with the vessel by the Danish government express equally favorable opinions. From such information, we are led to indulge in the reasonable conclusion, that a new Atlantic Telegraph Company will soon be formed in London, and that we may hear of an ocean telegraph line in operation in four or five years from the present date. Large cables can be used, which will secure speed in telegraphing.

**Improved Cheese Press.**

Simple as is the operation of pressing a cheese, there have been numerous patents for improvements in the apparatus, and the series seems to be by no means completed. The object of the invention here illustrated is the production of a novel, cheap and simple press, of easy and efficient operation.

In the engravings, Fig. 1 is a perspective view of the whole press, and Fig. 2 shows the mode of fastening the edges of the hoop together. The hoop, A, perforated with numerous small holes to allow the escape of the whey, is laid upon its edge or periphery on the table, B, in such a position that its center will be in line between the two screws, *c c*. These screws have followers at their ends, nearly filling the hoop, which are forced alternately inward by turning first one screw and then the other, by means of the handle, *d*, which is made to fit the square outer ends of both screws, and is movable so as to be transferred from one to the other.



**TAFT'S IMPROVED CHEESE PRESS.**

The hoop is held in place in the frame of the press by the stationary bar, E, on one side of the frame and the movable bar, F, on the other. The bar, F, is secured by the pivot, *g*, at one end, and by the pin, *h*, at the other end. The pin, *h*, has a screw at its end by which it is screwed into the solid part of the frame. When the pressing operation is completed, the screws, *c c*, are turned outward so as to withdraw the followers from the hoop, the pin, *h*, is taken out, when the bar, F, can be turned up out of the way, and the hoop with the cheese in it taken out of the press with the greatest ease.

The advantages of this press are—

1. The cheese is pressed without turning.
2. It is pressed on both sides at the same time.
3. The whey must all run off and leave the cheese dry on the surface, and not sour and injure the rind.
4. The whey is all pressed out, leaving the cheese solid like butter; hence there is no fermenting, and the result is the cheese will preserve its condition perfectly, and neither crack, leak whey nor swell.
5. The cheese will cure for market in from one-half to two-thirds the time required by cheese pressed in the ordinary way.
6. Pressure is so great that the cheese curd may be perfectly cold, and the result is the white whey or butter of the cheese is not pressed out.

This press was patented by Myron E. Taft, and the patent was granted through the Scientific American Patent Agency April 10, 1860. The right has been assigned to Smith, Taylor & Co., of Cleveland, Ohio, to whom inquiries for further information in relation to purchasing territory or presses may be addressed.

**INFLUENCE OF EXTREME COLD UPON SEEDS.**—Some experiments have been made this year, by Professor Eli Wartmann, of Geneva, Switzerland, on the influence of extreme cold upon plants. Nine varieties of seeds, some of them tropical, were selected. They were placed in hermetically sealed tubes, and submitted to a cold as severe as science can produce. Some remained fifteen days in a mixture of snow and salt; some were plunged into a bath of liquid sulphuric acid, made extremely cold by artificial means. On the 5th of April they were all sown in pots, and placed in the open air. They all germinated, and those which had undergone the rigors of frigidty produced plants as robust as those which had not been submitted to this test.

**THE HOT SPRINGS OF ARKANSAS.**—Of the hot springs there are some sixty-four distinctly recognizable, besides a considerable number in the bed of the creek. With one exception, their temperature ranges from 120° to 140° Fah., and their composition is nearly the same. The exception is a warm spring (temperature 100°) discovered a year ago on the bank of the creek, beneath the others. It has a strong odor and taste of sulphur, and is believed to have considerable virtues. The quantity of water discharged by the various hot springs is estimated at 350 gallons per minute (one spring affording 60 gallons), or say about 500,000 gallons per diem.



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