1,308.—Lewis Herning, of Montgemery Ce., Pa., assignee of J. Y. Humphrey, of Philadelphia, Pa., for Mica Chimneys for Lamps. Patented July 17, 1860:

I clum the construction and use of lamp channeys made mainly of mica, when the upper end is contracted and made smaller than the lower or middle portions thereof, substantially in the manner and for the purpose described.

I also claim binding the mica chimney of a lamp with rings of metal, substantially in the manner and for the purpose described.

1,309.—H. D. Snow, of Rochester, N. Y., for Improve-ment in Governor Valves. Patented Oct. 11, 1859: I claim constructing steam governors substantially as set forth, so as that the downward movement of the balls, when they drop below the point affording a full opening to the valve shall tend to close it.

EXTENSION.

3,585.—Edward Spain, of Philadelphia, Pa., for Improvement in Churns. Patented May 16, 1848:

I claim the giving the dasher the form represented and described, then, while it imparts a compound reciprocating and rotating motion to the each, as it is operated upon, thereby also enables a large-sized share to be pessed whole through a comparatively small-sized square perture in the side of the barrel, as set forth.

besigns.

1,576.—Henry A. Fowler, of Afton, N. Y., for Design for Hames Fastening.

1,577.—David Foyer, of Dover, N. H., assignor to Abraham Folsom & Sen, of Boston, Mass., for Design for a Floor Cloth Pattern.

1,578 and 1.579—F. C. O.

1,578 and 1,579.—F. S. Otis, of Brooklyn, N. Y., for two Designs for a Clock Case Front. 1,580.—J. R. Wennett, of New York City, for design for a

Speen.

1.581.—C. J. Woolson, of Cleveland, Ohio, for Design for a Gook Stove.

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If susceptible of one; or if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the

inventor's name marked on them, and sent, with the government fees by express. The express charge should be prepaid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to the order of Munn & Co Persons who live in remoteparts of the country can usually purchase refront their merchants on their New York correspondents; but, if not convenient to do so, there is but little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & Co No. 37 Park-row. New York.

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C. H. S., of N. H .- The best description of the manufacture of woolen goods that we are acquainted with is that in Urc's Dictionary of Arts and Sciences. It is said that a new edition of the work is about being published.

H. O. N., of N. Y .- Parachutes are made in the form of umbrellas with a hole at the apex to prevent them from oscillating. Experienced aeronauts generally avoid the use of parachutes; accidents so frequently result from their use. The rapidity of the descent will depend on several circumstances, but principally on the size of the parachute in relation to the weight of its burden

H. A. J., of Me .- Plaster of Paris after being calcined and ground, requires only to be wet with waterin order to cause it to harden.

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E. G. S., of N. B .- Overman's work on the manufacture of iron was published by Henry C. Baird of Philadelphia in 1850. Ure's Dictionary of Arts and Sciences contains an elaborate treatise on the subject.

Q. A. S., of Pa.-For information in relation to the improvement on Mr. Parkes's plan of vulcanizing, you can address John A. Greene, '37 Milk street, Boston. Alcohol boils at a temperature of 173°, and water at 212°, so you are in greater danger of explosion with alcohol than with water at a given temperature

T. S. C., of N. Y .- To transmit 15 horse power with a belt running 25 feet per second, your belt should be 11½ or 12 inches wide. It will take 45,000 pounds of water per minute to give 15-horse power with 11 feet fall. The very best turbines have yielded 87 per cent of the whose power of the water; this would require about 52,000 lbs. per minute for your purpose. Very few wheels, however, yield more than 70 per cent and with one of this class you would need about 64,000 lbs, per minute. A cubic foot o water weighs 62½ lbs.

R. U., of Mich.—There are a great many rooting composi tions. Some patented, and some kept secret. The essential ingredients in most of them are coal tar and asphaltum.

J. W., of Ohio .- A gallon of water weighs 8 pounds, 33,000 pounds per minute gives one horse power for every foot fall and a good overshot wheel will yield about 70 per cent of the power. Hence it will take 2,107 gallons per minute to give you 5 horse power from a 14-foot overshot wheel.

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Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from May 11 to Wednesday, May 21, 1862 -

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Pa.; A. G., of N. Y.; H. C. F., of Vt.; N. F. S., of III.; T. S₁ of O.; Pa.; A. G., of N. Y.; H. A. B., of N. Y. (2 cases).

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The "Merrimac" Patented Forty-Eight Years Ago.

We announced last week that we had discovered in the Patent Office the specification and drawings of an invention made forty-eight years ago, which, in its essential features, was a facsimile of the famous steamer Merrimac. We now publish the specification with engravings of the drawings which are attached to it. The smoke represents the powder in the act of exploding to throw up the hinged portion of the deck into a vertical position, in order to repel boarders. This feature is absurd, but it is not necessarily connected with the other parts of the plan, the practical efficiency of which has, after so great a lapse of time, been so signally demonstrated.

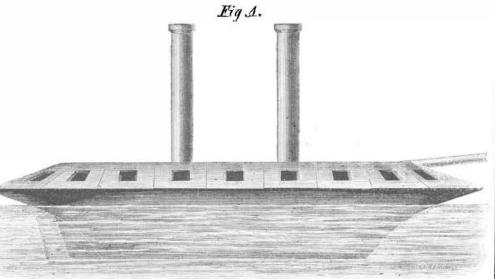
The fact of this important invention lying latent

The power may be reversed to propel her either way; said power is connected to upright levers to make horizontal strokes alternately. The elevation of her timbers and gearing will be proportioned by her keel

On a Dew Bow Seen on the Surface of Mud.

Prof. Rankine, in a letter to the Philosophical Magazine, says :-

There was seen to-day (February 13, 1862), by myself and some other persons in this neighborhood, a very beautiful phenomenon, of which the cause is obvious, and of such a nature that one would expect the phenomenon to occur frequently; but I do not remember to have yet seen any instance of it refor so many years, is a striking proof of the necessity corded in any scientific publication. I refer to a pris-



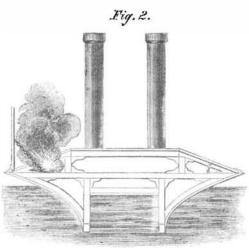
THE EARLY PROTOTYPE OF THE "MERRIMAC."

of exerting energy and enterprise in order to effect | matically-colored hyperbolic iris, or bow of the first the introduction of even the most valuable patents. order, exactly resembling that sometimes seen on a Unfortunately for the world, there was no Scientific AMERICAN in those days.

THOMAS GREGE'S LETTERS PATENT.

The following are the Letters Patent, containing a description, in the words of the said Thomas Gregg himself, of his ball-proof vessel, propelled by steam power applied under her and in her concave stern :-

The boat is framed on an angle of about eighteen



degrees all round the vessel, when the top timbers elevate the balls, and the lower ones direct them under her. The top deck, which glances the balls, may be hung on a mass of hinges near the ports. Said deck is supported by knees and cross timbers on the lower side, so that it may be sprung with powder, if required, when boarded by the enemy, to a perpendicular, where said decks will be checked by stays, while the power of the powder will be exhausted in the open air, and then fall on springs to the center of the deck again. (See Fig. 2 cross section.) The aforesaid deck will run up and down with the angle which may be coppered or laid with iron. The gun deck may be boarded at pleasure, to give room, if required, as the men and guns are under said deck. The power is applied between her keels, where there is a concave formed to receive them, from the bow to the stern, except a small distance in each end forming an eddy. I its excited state.

field of dewy grass; but in this case it was displayed on the muddy surface of a by-road near Glasgow, and on the less trodden parts of an adjoining turnpike road, throughout a distance of more than a mile. The time was between 12.30 and 1 P. M., Greenwich time; the morning had been hazy, but the mist had cleared away, and the sun was shining brightly.

The angular dimensions of the iris were obviously the same with those of a rainbow of the first order; its color were complete, from red to violet, and very bright and distinct, especially where the mud was softest and moistest; where a sheet of water, how thin soever, covered the mud, the iris vanished. No trace of an iris could be seen on the grass, in the sky, or any where, but on the mud; and on those parts of the turnpike road where the mud had been much disturbed no iris was visible.

'The necessary conclusion from this appearance is that the surface of the mud must have been thickly covered with globules of pure water, perfectly spherical and not in absolute contact with the mud, although resting on it; but those globules must have been extremely minute, for they were invisible to the closest inspection with the naked eye.

Chloride of Lime as an Insecticide.

Dingler's Polytechnisches Journal says :- In scattering chloride of lime on a plank in a stable all kinds of flies, but more especially biting flies, were quickly got rid of. Sprinkling beds of vegetables with even a weak solution of this salt effectually preserves them from caterpillars, butterflies, mordella, slugs, &c. It has the same effect when sprinkled on the foliage of fruit trees. A paste of one part of powdered chloride of lime and one-half part of some fatty matter, placed in a narrow band round the trunk of the tree, prevents insects from creeping up it. It has ever been noticed that rats and mice quit places in which a certain quantity of chloride of lime has been spread. This salt, dried and finely powdered, can, no doubt, be employed for the same purposes as flour of sulphur, and be spread by the same means.

Ten new craters have appeared on Mt. Vesuvius during the present eruption. English photographers are at work taking photographs of the mountain in

English Association of Inventors.

The London Mechanics' Magazine, of May 2d, says :-A large and influential meeting of the general reception committee of the Social Science Association was held in the Mansion House, on Tuesday last, the Lord Mayor in the chair. A report was presented by the finance committe, stating the arrangements that had been made up to the present time. Papers on a variety of different subjects connected with the association have been promised by gentlemen intimately acquainted with the various questions which it is proposed to discuss. A series of interesting soirces will be given during the time of the meeting, and it is intended to provide for visits to places and institutions illustrative of the objects of the association. A large attendance of distinguished foreigners is expected. A fund is now being raised for the purpose of meeting the necessary expenses, and a Foreign Reception and Corresponding Committee has been appointed.



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To the Inventor!

The SCIENTIFIC AMERICAN is in dispensable to every inventor, as it not only contains illustrated descriptions of nearly all the bestinventions as they come, but each number contains an Official List of the Claims of all the Patents issued from the United States Patent Office during the week previous; thus giving a correct history of the progress of inventions in this country. We are also receiving, every week the best scientific journals of Great Britain, France and Germany; thus placing in our possession all that is transpiring in mechanical science and art in these old countries. We shall continue to transfer to our columns copious extracts from these journals of whatever we may deem of interest to our readers

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FROM THE STEAM PRES OF JOHN AL GRAY.