

AMERICAN NAVAL ARCHITECTURE.  
THE CLIPPER BARK "JAMES WELSH."

The hull of this ship was built by E. F. Williams, of Greenpoint, L. I.; her owners are F. Alexander and others; her commander is Capt. W. Magill; and the route of her intended service lies between New York and Belize (Honduras). In the erection of this vessel, various important improvements have been made upon the old method of ship-building. Her dimensions are as follows:—Length of keel, 110 feet; length of main deck, 120 feet; length over all, 129 feet; breadth of beam at midship section, 28 feet; depth of hold, 16½ feet; tonnage, 350 tons; but she possesses a frame equal to a craft of 600 tons. She is constructed of white oak and yellow pine, and all the parts are securely fastened with spikes, treenails, &c.

The after-house of this vessel is admirably arranged, as it constitutes both cabin and dining-room; it is 28 feet in length and contains eight staterooms for passengers, four on either side. The forward portion of this house is separated from the after-part, for the exclusive purpose of storing hides and miscellaneous merchandize, so that they may be open to the air, thereby receiving proper ventilation and preventing the existence of that usually unhealthy miasma which arises from the stowage of such articles in the hold.

A commendable arrangement is also observable in the fore-castle of this vessel, and it is so superior to the old and miserably ventilated ones, which were so detrimental to the health of seamen, that it should be extensively copied and substituted by all who, in building vessels, have any regard for the comfort of those that navigate them. It is erected on the main deck with two gangways on each side of the chain locker, and a commodious room on either side of the gangways, possessing four berths each. These rooms will at all times be kept dry and comfortable, for they will only be occupied as sleeping apartments; the gangways being sufficiently roomy to each admit of five persons to be seated at their meals, and can also be used to change clothing, and a protection from storms; each room has a ventilator, which, when used in action with the hatch in the top-gallant fore-castle, and gangways, will permit a continual current of fresh air to pass through.

In addition to these essential features, she possesses two tanks in her cockpit, each of sufficient capacity to contain 525 gallons of water.

The plan of all these peculiar internal arrangements is solely attributable to the inventive mind of her principal owner; and they are such as to unhesitatingly recommend themselves to the attention of ship-builders, ship-owners and all parties who desire to alleviate the trials and discomforts of a much-abused and sadly-neglected class—our sailors.

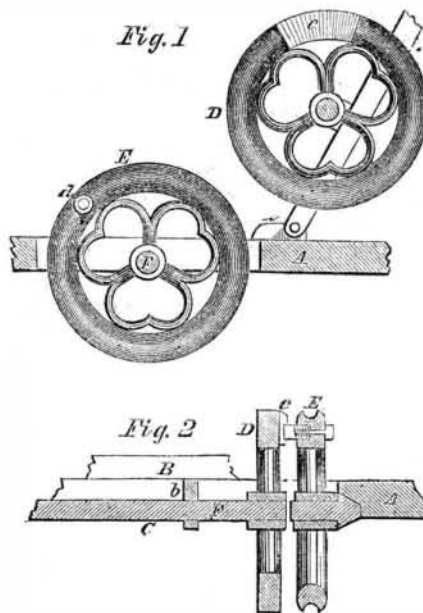
LITERARY AND SCIENTIFIC NOTICE.  
MUSPRATT'S CHEMISTRY.

Messrs. C. B. Russell & Bros., publishers, of 12 Tremont-street, Boston, have just sent us the last-issued installment (Part 49, Letter P) of the above-named scientific periodical, which is altogether the most complete work ever published on chemistry applied to the arts and manufactures; its contents are arranged in the form of a cyclopaedia, and illustrated by nearly 1,000 engravings of chemical apparatuses and a series of life-like portraits of distinguished chemists. The multifarious information is conveyed in as clear and plain language as the nature of each subject will allow, so as to render it thoroughly practical. We are pleased to learn that, although this publication has been extended beyond the limits originally contemplated, the interest and patronage of the public increases with each succeeding number issued. It is now decided that the whole work will be comprised within sixty parts. The above-named publishers have a branch office at the store of Messrs. Bailliere & Bros., of 440 Broadway, this city.

A MINIATURE steam engine, complete in all its details, was exhibited at the California State Fair, of about one rat power, manufactured by Henry Rice, watchmaker, of Sacramento. A steam attachment was formed with a copper pipe no larger in diameter than an ordinary straw, connecting with the boiler outside, from which it received its supply; and when under a full head, its fly-wheel performed over two thousand revolutions per minute. Nothing could be more beautifully accurate in its adjustment. The diameter of the cylinder is 3-16ths of an inch; stroke 7-16ths of an inch.

## PERKINS' SEWING MACHINE ATTACHMENT.

There has long been a desire among sewing machine manufacturers to obtain some simple and unobjectionable mode of preventing the driving wheel from turning in the wrong direction. This is perfectly and beautifully accomplished by the invention here illustrated. This invention was described in a subordinate relation on page 72 of the current volume, where it was stated that the attachment was applied only to the Moore machines. It seems that the statement, from a singular misunderstanding, was erroneous. This, of course, being unsatisfactory to the inventor, we republish the description, with correct references, in order to do him full justice.



The driving pulley E, Figs. 1 and 2, and its shaft F, are disconnected from the shaft, C, which carries the works. Upon the face of the pulley, D, on the end of the shaft, G, is formed a wedge-shaped projection, c, having a square shoulder at one end, and inclining to a thin edge at the other. From the pulley, E, a pin, d, projects, which is pressed outward by a soft, spiral spring, bringing it in contact with the square projection, c, on the wheel, D, when the pulley, E, is turned in the right direction, and allowing the pin to recede and thus pass over the projection, c, when the pulley is turned in the opposite direction.

The carrying shaft being entirely disconnected from the pulley and treadle, the opportunity is afforded of placing the works upon a table separate from the main table, to which it may be hinged, so that it may be turned over and the works exposed in a most convenient manner, for oiling or repair. The position of the second table when turned is shown in Fig. 1. This facility for inspection is a secondary but valuable feature.

This attachment, the patentee desires us to say, is applicable to all sewing machines which are driven by treadles, and is offered to the public generally.

The invention was made by Jonas Perkins, patented April 17, 1860, and assigned to N. S. C. Perkins, to whom inquiries for further information may be addressed at Norwalk, Ohio.

## RECENT AMERICAN INVENTIONS.

The following inventions are among the most useful improvements patented this week. For the claims to these inventions the reader is referred to the official list on another page:—

## VALVE GEAR.

This invention consists in a novel arrangement of two tripping bars connected with two rockshafts which carry or operate two induction valves which admit steam to opposite ends of the engine cylinder, in combination with a single rocker having an adjustable toe, whereby the induction of the steam is enabled to be effected in a positive manner at the commencement of the stroke of the piston, and the cutting-off is enabled to be effected at various points in the stroke of the piston under the control of a governor or of suitable means of adjustment by the hand of the engineer. The credit of this contrivance is due to Patrick Kenney, of Providence, R. I.

## BOILER.

The object of this invention is to obtain a very cheap, simple, and strong steam boiler, of as small a size as

be may desired, capable of using fuel very economically; and to this end it consists in a boiler composed of a lower annular water chamber with an upper annular water and steam chamber connected by two or more concentric circular series of upright water tubes, the inner series of which have bars arranged between them extending from the bottoms where the grate is placed, nearly to the top thereof to form a central circular fire-box, and the outer series of which are surrounded by a curtain-like cylinder extending from the bottom of the upper steam and water chamber nearly to the lower water chamber, and the whole being surrounded by an iron casing with which the chimney is connected. This device has been patented to G. W. Rains, of Newburgh, N. Y.

## PHOTOGRAPHIC MEDAL.

This invention consists in a medal composed of a ring or plate of solid metal, constituting a frame or ring of a medallion character surrounding a picture or pictures produced by photography. The patent is assigned to the Waterbury Button Company, at Waterbury, Conn., who are now making 10,000, and expect shortly to make 20,000 medals daily, with portraits of the presidential candidates. This company will doubtless be glad to have eight candidates in the field in 1864. The patent must be a very remunerative one. The inventor is D. F. Maltby, of the above place.

## TELEGRAPH LIGHTNING-ARRESTER.

We omitted in our last number to notice the lightning-arrester for telegraph offices, patented by D. F. S. Ways, of Baltimore, Md. The only means hitherto commonly adopted on electric telegraph lines for the protection of the operators and instruments from injury during thunder storms, has been either to disconnect the leading wires from the binding screws on the magnet block, or to open the main circuit within the office by means of a cut-off, but neither of these means effect more than the prevention of the destruction of the magnet, as they do not prevent the entrance into the office, of the atmospheric electricity, and the operator is exposed to great danger in their use from contact with the wires and other conductors. The object of this invention is to enable the operator within any office on an electric telegraph line, without touching any portion of the main circuit, to suspend and renew electrical communications between the main wires and the interior of the office, or of the building in which the office is situated; and the invention consists in effecting such object by the use of an electric current independent of the main line, such current working the armature of an electro-magnet, which, by opening and closing the said current, is made to open and close the main line, outside of the building in which the office is situated.

## APPLICATIONS FOR THE EXTENSION OF PATENTS.

*Bell Telegraph.*—A. Judson and E. N. Jackson, administrator of T. D. Jackson, deceased, of New York City, have applied for the extension of a patent granted to said A. Judson and T. D. Jackson on the 17th of October, 1846, for an improvement in the above-named class of inventions. The testimony will close on the 17th of September next; and the petition will be heard at the Patent Office on the 1st of October.

*Artificial Leg.*—B. Frank Palmer, of Philadelphia, Pa., has applied for the extension of a patent granted to him on the 4th of November, 1846, for an improvement in the above-named class of inventions. The testimony will close on the 8th of October next, and the petition will be heard at the Patent Office on the 22d of that month.

*LONDON STEAM FIRE-ENGINE.*—The London Times describes a new steam fire-engine which has lately been tried in that city, and which is highly commended. The cylinder and pumps are made of gun-metal, the valves are of india-rubber, the boiler is of the upright tubular construction, affording ample means for superheating the steam; there are 199 brass tubes, one and one-fourth inch outside diameter, and 15 inches long. The fire-box is of copper, three feet four inches in diameter; the cylinder is eight and one-half inches in diameter, with a six-inch stroke; one water cylinder is six inches in diameter, with six-inch stroke, the other, seven and three-eighths inches in diameter, with a four-inch stroke, the two being equal in cubic contents.