

NEW SYSTEM OF VENTILATION.

All natural methods of ventilation, and all mechanical means relying upon the wind to operate them, must necessarily fail at times, as in a calm, or with but a slight movement of the external air, they lose their motive power and fail to operate, and these failures usually occur at the very time when an active ventilation is most needed.

Those who advocate the use of ordinary fan blowers for ventilation, do not seem to get the full idea of the subject of ventilation and do not realize that a positive and constant circulation must be obtained to secure a perfect ventilation. Such a circulation, it is claimed, cannot be realized except by a system in which an injection of fresh air into the room and an ejection of the heated foul air from the room may be secured, with the ability of operating both at the same time and by the same power. The use of the blower during the summer (only injecting fresh air into the rooms) may create a tolerable circulation when the weather will admit of opening the windows and doors to allow the heated foul air to escape; but when, as in cold weather, the blower can be used only to send in heated air, and the windows and doors cannot be opened as in summer, there will be an accumulation of heated foul air until the atmosphere becomes oppressive, and then, to get a circulation, the windows are usually thrown open, and a draught of cold air is allowed to enter, to the discomfort and often to the injury of many.

The ventilating system, represented in the accompanying engraving, overcomes all of these difficulties and presents a simple means of thorough ventilation. The motive power is a steam air compressor, which furnishes a comparatively small supply of compressed air to the nozzle, in which the degree of compression is automatically regulated, so that whether larger or smaller quantities of air pass the nozzle, it cannot exceed or fall below certain limits of pressure, which have been determined by careful experiments as most economical in their results. The air ejected from the nozzle, with some thirty or forty times its bulk of other air, is carried through proper channels to the rooms to be ventilated.

The nozzle, A, is provided with a valve, B, having an elongated tapering portion, *b*, and a stem, *a*, furnished with a spring, which is set or compressed to a given pressure. The valve is surrounded with a series of short radial ribs having grooves between them, which increase in depth toward the inner end of the valve. It will thus be seen that as the valve is pushed out by an increase of pressure, the volume of the escaping air jet is increased while its pressure remains the same.

In Fig. 3, C is the fresh air supply pipe which discharges through openings, *c c*, into the apartments of the building. Below a funnel, connected with the pipe, C, an injecting nozzle, A, is placed, and connected by a pipe, D, with a pressure air pump in the basement. The pipe, D, also extends to the ejector nozzle, A, in the ventilating shaft, E, at the top of the building, and the ventilating shaft communicates with registers in the ceilings of the different apartments. The air supplied by the direct acting air pressure pump being forced through the lower injecting nozzle, A, induces a flow of air from the air shaft into and through the pipe, C, to the apartments, and the ejecting nozzle, A, in the ventilating shaft, E, creates a strong upward draught, which draws the foul air from the apartments connected with the ventilating shaft. Fig. 3 shows the application of this system to the ventilation of steamships. For this service it is eminently adapted, as the air under pressure may be conveyed in small pipes, and the necessarily small, close apartments may not only be supplied with fresh air, but the foul air may be removed effectually. For steamships carrying cattle and perishable fruits, and to maintain a thorough circulation of air in the hold, it is especially adapted.

For the ventilation of public and private buildings, court houses, school houses, hospitals, public halls, hotels, banks, etc., and for any purpose requiring a complete circulation of air, this system seems very desirable. It has been indorsed by eminent engineers, and approved by many of our government officials.

The great advantages of this method are, that it is rendered entirely unnecessary to construct for ventilation wide air channels for the whole distance from the ventilating power to the place to be ventilated. This is absolutely necessary when fan wheels are used, or other contrivances propelling all the air used for ventilation, resulting in very little pressure and moderate velocity. By employing a very small amount of air, equal to two or three per cent of all of the air to be propelled, and giving it a high pressure and velocity, it may be conveyed in tubes of less than one tenth the diameter, thus reducing the size of the pipe from twenty inches to two inches.

This tubing may lead to the place to be ventilated, and there blow the air through the proper nozzle into the funnel-

An improvement in medicated belts has been patented by Messrs. William W. Vaughan and Joel J. Thom, of Brownsville, Mo. The object of this invention is to furnish a remedy and preventive of fever and ague. It consists in saturating hemp, jute, cotton, or other material, in rope form or otherwise, with tar, and inclosing it in a casing of cotton, linen, or the like, in the form of a belt, band, or strap, so that it may be conveniently secured around the body.

An improvement in combined washing and wringing machines, patented by Mr. Thomas J. Baldwin, of Pacific, Mo., consists of a box for receiving the clothes provided with a lid, which is secured by means of an eccentric bar and lever and rings, this box being supported between two standards and rotated by a crank, the shaft of which passes through one of the rollers of a clothes wringer, mounted on the frame of the machine, and provided with a lever for regulating the pressure. The box contains a number of wooden balls, which are thrown about during the revolutions of the box, and pound and wash the clothes.

An improved medicine spoon, invented by Mr. Barclay T.

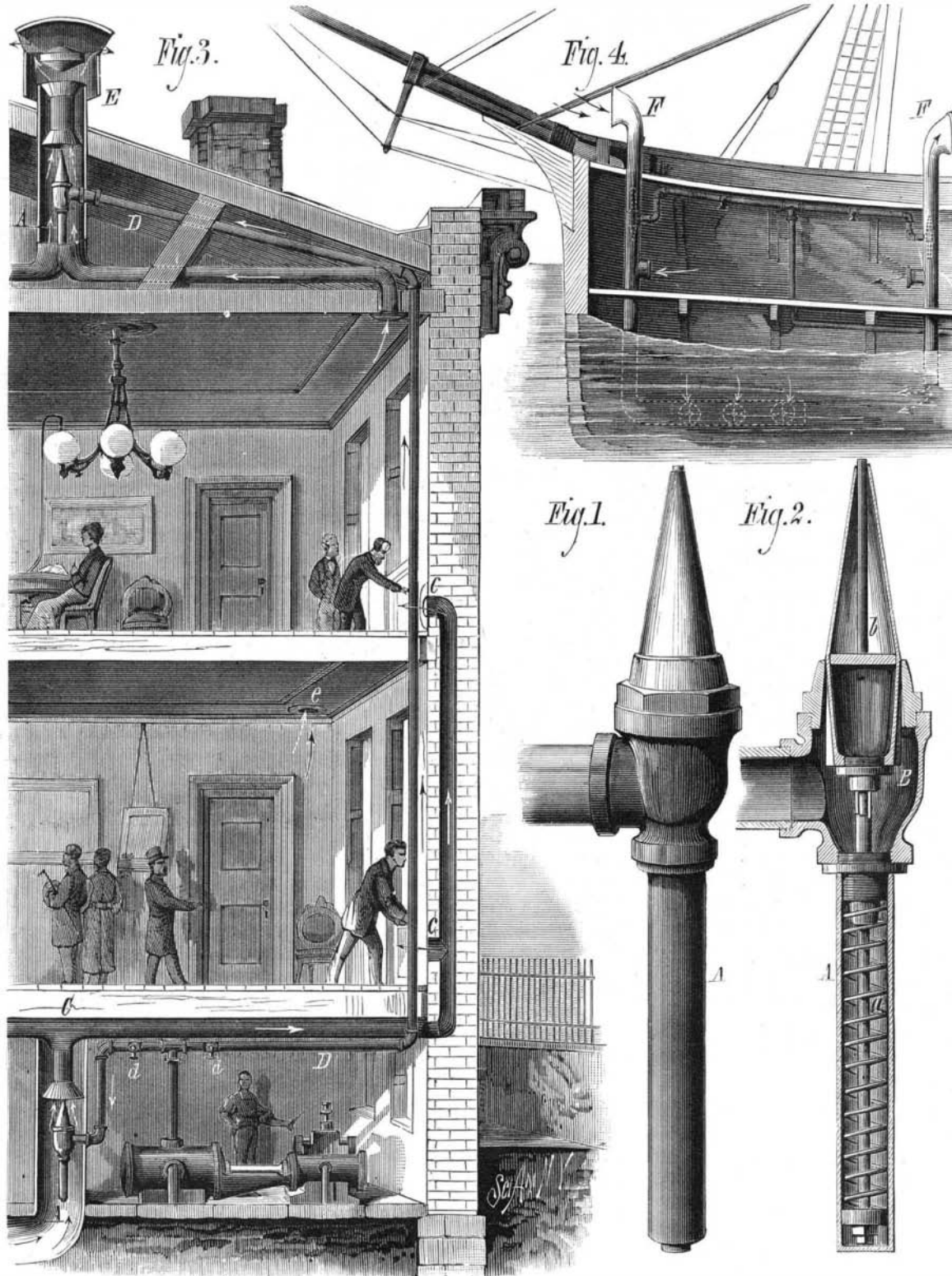
Trueblood, of Hadley, Ind., consists in a bowl provided with flanges, in combination with a cover fitting over the bowl and sliding under its flanges. With this spoon medicines can be easily and without waste administered to infants and others who resist their administration, and also to those who cannot be raised to an upright position.

An improvement in pressing irons, patented by Elvira A. Russell, of Minneapolis, Minn., is adapted to be placed over a lamp burner like a chimney, and, while serving the same purpose, be heated by the flame of the lamp. It consists in making the iron of the general form of a conical lamp chimney, having one of its exterior sides flattened to form an ironing surface, an extension at the smaller end on the flattened side to serve as a point for the iron, and at the large end a round portion to fit over the burner and hold the iron on the lamp top.

Mr. William H. Huston, of Chauncey, Ill., has patented a guard for doors or windows, formed of a number of sections composed of vertical and horizontal iron or steel bars, these sections hanging on L-shaped hooks in the casing of the door, in such a manner that no section can be removed unless the uppermost section is first removed.

Mr. George W. Ellis, of Philadelphia, Pa., has patented an improvement in the class of trusses for reducing hernia, in which the pad is attached to a slotted bar whose head is held in a clamp that allows adjustment of the pad in various positions.

Mr. William Wilmington, of Toledo, Ohio, has patented an improvement in chill moulds for casting car wheels, the object of which is to facilitate the moulding of car wheels and provide a suitable arrangement for the gas to escape, at the least cost, and



GREEN'S SYSTEM OF VENTILATION.

without materially impairing the strength and durability of that class of car wheel chills that have in their construction an annular groove in the face of the flange portion of the chill to receive sand, or its equivalent, preparatory to casting the wheel. The reason for filling the groove with sand is to prolong the cooling of the outer portion of the flange of the wheel cast therein, thereby preventing the fracturing of the flange of the wheel which is incident to its rapid cooling and contraction.

Further information regarding this system of ventilating may be obtained from the D. C. Green Ventilating Company, 88 Liberty street, New York city.

MISCELLANEOUS INVENTIONS

Mr. Elisha Depue, of Silvara, Pa., has patented an improved tool for upsetting tires, carriage braces, and stays, iron rods, and other forgings. It is simple in construction, inexpensive, convenient, and effective.

Mr. Richard A. Kipling, of Roselle, N. J., has patented an electric lamp with carbons crossed so that they can be fed, by simple contrivances, directly against each other, point to point, in such a manner that the luminous arc will be formed around the carbon points where they meet, and shall cast no shadow below them.

Mr. Casper Marti, of New Albin, Iowa, has invented an improved trap for catching rats and other animals, which is simple in construction and convenient and effective. It is capable of catching the animal without leaving any trace or scent to frighten others that may come after him.

Mr. William Osmond, of New York city, has patented an improved device for attachment to the tops of fences, especially in back yards, to prevent cats from crossing or walking upon them, and thus prevent annoyance from the collection of cats by night in the yards.