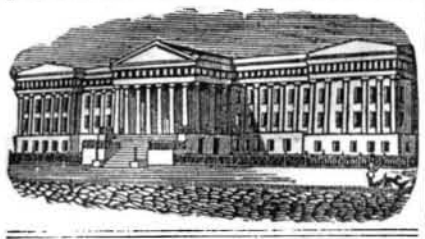

☞ Reported expressly for the Scientific American, from the Patent Office Records. Patentees will find it for their interest to have their inventions illustrated in the Scientific American, as it has by far a larger circulation than any other journal of its class in America, and is the only source to which the public are accustomed to refer for the latest improvements. No charge is made except for the execution of the engravings, which belong to the patentee after publication.

LIST OF PATENT CLAIMS

Issued from the United States Patent Office.

FOR THE WEEK ENDING JANUARY 29, 1851.

To Elisha Smith, of Albany, N. Y., for improvement in Stoves.

I claim the combination of a transparent water vessel, with covered or other transparent openings, in the top of a stove plate, and a mirror placed upon a stove top, as herein represented and described.

To F. N. Still, of New York, N. Y., for improvements in metal or second patterns for castings.

I claim preparing second patterns by moulding metal patterns in two part moulds, and then separating the two parts of the mould, the pattern being left in the sand, to cast a plate fitted to the metal pattern so moulding, as specified, so that the pattern can be attached to the plate, and the two be used in moulding, to produce castings, substantially as described.

To M. L. Knapp, of Painesville, Ohio, for improvement in Abdominal Supporters.

I claim the construction of hip springs, with split or divided ends, forming elongations of the same strip of steel, the front springs having slots and pivot holes, the backs springs having two or more graduating pivot holes, to be used in combination with the adjusting screws, as herein substantially as set forth.

To James Hanley, of New York, N. Y., for improvement in Swivel-ribbed Key.

I claim making the making the exposed ends of keys in such a manner, that they may revolve freely upon the other parts of the key, substantially in the manner and for the purposes described.

To Wm. Fields, Jr., of Providence, R. I., for improvement in the Hydraulic Ram.

I claim the hinge valve opening upwardly and inwardly, at or near the upper end of the inclined plane or drive pipe of the hydraulic ram, said valve being placed in a box made of brass, or any other suitable materials, which valve, by closing on the re-action of the water in the drive pipe prevents the said re-action from distributing the water in the spring or reservoir. The box of said valve is bolted to the drive-pipe, and said valve may be a hinge valve, or any other suitable valve.

To Alfred Hathaway, of Boston, Mass., for improvement in Pens for Ruling Paper.

Whatever may be the number of thicknesses of which the back bar and pens are composed, my improvement, and what I claim, consists in not only making the upper one larger than the others, but in making it the marking part, and soldering the next one below it, to it, as specified. Such improved mode of making the pen or pens, I claim as my invention, and whether the plates of metal placed upon one another be of different metals, or of different thicknesses of metal, as described.

And I also claim the improvement in the construction of the back bar, the same consisting in making it with a slit or opening, between any two pens, and extending nearly or quite up to the vertex of the angle or bend of the bar, as specified, the same producing the advantage above mentioned.

And when the pen is composed of more than two thicknesses of metal, I claim the improvement by which one single soldering of the upper and lower parts together, suffices to bind or keep all the parts together or in place, the said improvement consisting in making the lowest thickness of metal longer than any of the others, except the first, or upper, and marking one, as described.

And I also claim the method of making the pens and back bar, as shown, when the same are composed of two different thicknesses of metal, or of two plates of different metals, the said improvement consisting in making the lower plate to enclose or lap over the one or others above it, and thus make the back bar of one more thickness of metal, than the pens are composed of.

And I also claim to make the different thicknesses of the pen of different metals, as specified.

DESIGNS.

To Conrad Harris & P. W. Zoiner, of Cincinnati, Ohio, for Design for Stoves.

For the Scientific American.

Mechanical Principles.

MESSRS. EDITORS—I perceive that "Maclaurin," under his article in last week's paper, states that, "according to my reasoning a feather and a ball would fall with equal velocity," but he neglected to state that, according to his own reasoning, a feather of 10 ounces would fall with a greater velocity than a ball of lead 5 ounces: I say that two bodies of the same specific gravity, one large and the other small, will fall with equal velocity.

W. A. BLACK.

Philadelphia, Jan. 25, 1851.

[We will answer friend Black, and save Maclaurin the trouble of replying (if he would reply), as we don't like to occupy but little room with such a plain question. Maclaurin is right, for two reasons—1st, his reasoning did not go to prove that a feather of 10 ounces would fall faster than a ball of lead 5 ounces, but the reverse. 2nd—Mr. Black's premise that "two bodies of the same specific gravity, the one large and the other small, will fall with equal velocity," is an error, as Maclaurin has shown, in alluding to a piece of gold, which will fall with great rapidity if made into a ball, but if the same weight of the ball be beaten out into gold leaf it will be borne upon the breeze. This is plain, surely. Take a piece of iron weighing one pound, make it into a ball, and then take a pound of sheet iron and make it into a box of one cubic foot, and then let them drop at the same moment from Trinity Church steeple, would they both fall to the ground with the same velocity? No. The articles of Maclaurin are strictly philosophical in every point. If Mr. Black reads them over from No. 1, carefully, he will be convinced of the correctness of the premises there laid down. It is the resisting medium of the air which makes the difference in the velocity of bodies according to their form and bulk, whether of the same or different specific gravities.—ED.

For the Scientific American.

The Moisture of Rooms.

This is a subject in which all are concerned, particularly during the cold months of a northern climate, and perhaps attention has not been sufficiently drawn to a matter which must, in no small degree, affect the health of those delicate in constitution, and, if properly regulated, contribute to the comfort of all.

How delightful is the soft balmy air of a southern latitude! Its genial feeling conveys the delicious sensation of bathing in the atmosphere; and how strongly contrasted to the harsher air of a colder region. What makes the difference? Let us inquire into this question. If we chemically analyze the atmosphere of the zephyrs of the tropics, we find the air of precisely the same proportions in its constituent gases as the keen piercing winds of the boreal latitudes.

Then, it is not any variation in this respect which constitutes the difference; neither is it in the temperature, for, if so, then the warm air of our dwellings should rival the soothing atmospheres of Florida and Cuba, and consumptives would have but to remain in-doors during the inclement months, to derive all the advantages of climate, for which those regions are famed. There must be, then, some other causes than those above alluded to for the difference in question.

It is mainly, perhaps entirely, caused by the great difference in the amount of moisture in the two cases, supposing both to have the same temperature.

Cold air, even if saturated with watery vapor, when warmed up by admission to the lungs, becames of necessity very drying in its effects; for the quantity of moisture which the atmosphere is capable of absorbing and holding in solution being strictly dependent on its temperature, the same air which is loaded with aqueous particles at a low temperature becomes proportionably very dry at one more elevated. Thus the air of a room twenty feet in extent, by fifteen broad and twelve high, should have about one half gallon more of water dissolved in it at 80°, than at 32°, to keep it at the same relative state of moisture. Hence that additional quantity should be evaporated to preserve it in the same hygrometric state. But the atmosphere of a chamber is continually being renewed to supply that carried up the flue of the chimney by the action of the fire, and this must be provided for by the continual evaporation of a quantity of water necessary to be evaporated to preserve it in a salutary condition. The knowledge of this amount can be obtained only by experiment—by evaporating water until a hygroscope shall show the proper quantity required

The small vessels of water placed on the tops of stoves are insufficient; the quantity of vapor furnished by them is, in general, entirely inadequate—so small indeed that it is carried off by ventilation, nearly or quite, as rapidly as formed, and the hygroscope scarcely takes notice of the insignificant remainder; unless, indeed, the room be of contracted dimensions with the lungs of several persons exhaling a moist effluvia. This species of moisture, however, is contaminated with effete animal matter to a prejudicial extent, and should be avoided.

I have found the following arrangement efficient for the end proposed:—A tin box, two feet long and six inches deep, is suspended by hooks to the upper part of the fire-place, so high as not to intercept the heat of the grate, and having at each end a wrought-iron tube one and a half inches in diameter and eighteen inches long, soldered to its bottom, and extending down along the sides of the interior of the grate, some six inches into the burning coals; a handful of nails is put into each tube to prevent the noise of the ebullition. The tubes are the boilers, and the tin box the reservoir, holding about one and a half gallons of water; the box has a top, with a tin tube projecting six inches above, surmounted by a small funnel to fill the reservoir with, as well as to prevent the steam formed—which escapes through it—from being drawn into the flue of the chimney and lost.

I find by the hygroscope, described in a previous number of the Scientific American, that it requires the reservoir to be filled morning and evening; thus, in my chamber, of the dimensions above stated, three gallons of water are evaporated in twenty-four hours, and all this does not render the air as moist as that we breathe in summer, having the same temperature.

It may be observed that our rooms are very dry when no moisture is deposited on the cold panes of glass of the exposed windows, when the outside air is below freezing. It shows that the interior air would not be saturated with aqueous vapor, even if cooled down to that temperature, and hence, as previously explained, must be very drying in its effects.

A moderate degree of dryness is perhaps advantageous, in some cases, for the vigorous health of the system, but an excess should, if possible, be avoided. If a just medium cannot be obtained, the excess of moisture is probably the safer side, for sailors live constantly in the enjoyment of robust health, breathing continually an atmosphere overloaded with watery vapor.

At the proper season—in summer—I may again refer to the subject of the moisture of rooms in relation to the injurious effects of a cold dampness. FRANKLIN.

New York, January, 1851.

More than 6,500 persons met at Malone Franklin County, N. Y., a few days since, to consider the project of constructing a bridge over Lake Champlain.

TO CORRESPONDENTS.

"J. G. E., of N. C."—The patent of Mr. Hotchkiss expired on the 19th ult. We do not know whether the wheel, shaft, and crank are cast in one piece or not; his residence is Windsor, Broome Co., N. Y. Rose claims the conical flume "and making the buckets flare out from the back." It was patented in 1839. We are not able to give you the practical knowledge desired about the mulley.

"L. D., of N. Y."—It is best to have it recorded, for we suppose from your letter that the bargain is embraced in the assignment. We do not know of another such case, but it is best to be on the safe side, although the courts in Massachusetts have decided that such agreements come under the common law.

"J. H. R., of Ohio.—We do not know any such machine, except Stirling's Hot-Air Engine, described in Vol. 3, Sci. Am.

"G. B. A., of Philadelphia."—We do not know what kind of condenser yours is, but condensers for the same purpose have been tried before. Hall's condenser is well known. All have been failures, we believe.

"F. A. W., of Mich."—We have received yours of the 4th, and will give it attention.

"R. W., of Berl."—We saw a model three years ago, which was constructed nearly upon the principle embraced in your diagram. We do not believe that it will answer a good purpose. The great majority of accidents are caused by obstructions, very few by the curvatures.

"M. H., of Pa."—You have asked us a question which is very difficult to answer. The modifications of surveying instruments are very numerous, in fact are legion. We will give you our advice:—take it to a philosophical instrument maker, and if you find that its merits will cause it to be extensively used, then get it patented.

"J. W. A., of Md."—We believe that your stone facing hammer is patentable, and should be secured.

"J. B. L., of Waterloo."—Consult a physician at once; strong poultices of linseed meal should be applied in the mean time. We know of no better application.

"J. Y., of Pa."—As we understand it you could not get a patent on your gate; if we had a model we could judge better.

"C. E. K., of Pa."—We are sorry to say that we do not know of an artificial hand that would be of any benefit for your friend.

"H. K., of Mass."—We have never heard of the balls you speak of being used for incrustations. We think the composition patentable.

"R. L. L., of N. C."—There are various kinds of chain belts; we will try and get the information for you.

"G. H. S., of Pa."—We do not know the price of the transit instrument. They are made by J. W. Young, of Phila.

"J. W. R., of Ind."—The question embraced in your letter relates to one of economy. It would take some experiments to prove whether it is not more economical to have the diminished exhaust openings than to use steam direct from the power. In any case, the steam is the power, and if you take it from the boiler, it is lost in that respect. We do not know of a like arrangement to yours having ever been used before, and as something new we believe it to be patentable.

"Observus, of ——."—We would have published your article only it came too late for last week's number, and the debate for this week would be over before it could appear. Your views accord very nearly with ours on the subject. We have received a great many articles on the Patent Law Reform.

"W. L. N., of Ohio."—We have received so many articles on the subject of the Patent Laws, that we find it impossible to give yours an insertion.

"N. B., of R. I."—We do not know of a single work on submarine operations.

"M. W. H., of Ind."—Dealing in patent rights is a business in which we never engage. The procuring of patents is our legitimate business, but buying and selling, or disposing of patent rights on consignment, is out of our latitude. The $5 which you sent was the requisite amount for the engravings.