Improved Hand-stamp.

The accompanying engraving represents a new construction of a hand-stamp and stamp-canceller designed for printing, cancelling, and other uses. The advantage of this new stamp consists in that it is self-inking. The ink used with it was invented for this special purpose; it has great durability, and is always ready for use; it is not mere color smeared on a ribbon, but genuine ink—the same as is used for printing this paper. In other articles of this kind it is customary to press the stamp on a pad for a supply of ink—and afterwards on the letter. In the hurry of mailing, the stamp is not always properly inked, as the stamps on most letters will show.

With this new device the arrangement is entirely novel; the ink, prepared in pulp, is contained in a fountain or reservoir inside of the stamp, and a simple pressure of the hand is all that is required to give a perfect impression on any surface. The saving of time, as well as the greater accuracy of printing by such a process is evident, as also its superior neatness in printing and clearness, for when not in use it may be carried in the pocket without danger of soiling the clothes. One charge of the ink is sufficient for thousands of impressions; and it is not affected by climate or time—it will be as good when five years old as when new, and it can be prepared of any desired color. This device may be used with the greatest rapidity; impressions being obtained from it at the rate of one hundred per minute, with a guarantee of correctness, which for Post-Office use is a desideratum long sought for. Stamps are imperfectly cancelled by the old method, and this is taken advantage of by many rogues who recover the partly defaced stamps for a second usage. It is claimed that this cannot occur with this stamp, as the ink-mark is ineradicable. The mechanical construction is simple. The ink A is contained in the tube B, and is of a semi-solid or pulpy nature; the piston C rests on this ink and pressure is communicated to it through the rod D, and knob E; the piston rod is larger in one part and the shoulder of the larger portion rests against a shoulder inside the body of the handle, so that it only rises to a certain hight. As pressure is communicated to the knob by the hand, the ink is forced down through the slits of the stamp and so printed on the letter; as the ink becomes reduced in quantity, the lower half, F, of the tube B is screwed up on the upper part, so that the ink is entirely consumed before renewal is necessary. Some of these stamps are made without the knob at the top, the simple action of impressing the stamp on paper being all that is required to force the ink out. New charges of ink may be inserted by simply unscrewing the bottom half of the tube B; the connection of these two parts not being easy to show clearly, we have not attempted it. Any pattern or any device may be substituted for the mere check-mark herewith engraved, and as a convenient apparatus for printing labels or trade-marks this hand-stamp is unrivalled. The principle is capable of much modification. This stamp is the invention of Richard H. Rogers, and was patented through the Scientific American Patent Agency, on Dec. 8, 1863; and a patent is now pending on the ink, through the same source. For further information address the inventor at No. 10 Spruce street, New York.

ROGERS'S PATENT "RESERVOIR" HAND-STAMP.

The Earth's Temperature in Palæozoic Times.

A very beautiful hypothesis has been framed by Mr. Sterry Hunt, F.R.S., to account for the increased temperature of the earth's surface in former geologic times. Adopting Professor Tyndall's views on the subject of absorption of heat, he shows that during palæozoic times the presence of large quantities of carbonic acid in the atmosphere was sufficient to prevent the radiation from the earth of the heat derived from the sun, and thus to increase the temperature of our planet. Dr. Tyndall has shown that heat, from whatever source, passes through oxygen, hydrogen, and nitrogen gasses, or through dry air with nearly the same facility as through a vacuum. Like rock-salt they allow of the transmission of heat; glass, however, and certain other substances, although allowing heat to travel through them from luminous bodies, prevent its radiation from non-luminous ones. There are some gasses which also possess this property; thus the absorption of heat from a body at a temperature of 212 Fahr. is by vacuum 0, that by dry air 1, that by carbonic acid gas 90, that by marsh gas 403, that by olefiant gas 970, and that by ammonia 1195. So long as the earth is surrouded by a stratum of vapor, so long will radiation from it be retarded; but during long nights the radiation into space causes the precipitation of a large quantity of this watery vapor, and so the protective shield is lost. However, we have every reason to believe that during the earlier geological periods, all that carbonic acid which we now have in our various limestones, and as carbon in our coal formations, was distributed through the atmosphere. This having been the case, it is evident that the quantity of heat radiated from the earth during these epochs must have been vastly less than that which passes away in our times; hence the temperature must also have been considerably higher, thus explaining why a vegetation like that of the tropics once existed within the frigid zones. In fact, the carbonic acid surrounded the earth like a huge protecting dome of glass.—*Canadian Naturalist and Geologist*

MR. N. F. NEWELL of Whitinsville, Mass., wishes to correspond with parties who weld steel on malleable or wrought iron, as is done with tailors' shears, vice jaws, anvil faces, and similar articles.

Extensive Adoption of the French System of Weights and Measures.

At the regular meeting of the Society of Arts in London, on Wednesday, January 27, 1864, Samuel Brown, F. S. S., Vice-President of the Institution of Actuaries, read a paper giving the best history of the metric system that we have seen. In this paper, Mr. Brown stated that the metric system was introduced in France fully in 1840, in Belgium in 1836, in Holland in 1819, in Spain in 1859, in Portugal in 1862, in Greece in 1836, and in Chili in 1848. It has long been in operation in Sardinia and Lombardy, and is now rapidly spreading over the rest of Italy. Active efforts are also being made for its introduction into Germany, Sweden, Norway, and Denmark, and there is a good prospect that these efforts will be successful. The paper concludes by strongly recommending the adoption of the system in England.

A CHILD was recently severely poisoned in western Ohio, by swallowing percussion caps such as are used on guns; by skillful medical treatment its life was saved. These articles contain a most active poison, and should be kept out of the way of children.

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