A Suggestion to Employers.

The Bridgeport (Conn.) *Daily Standard* hits the nail on the head when it recommends a year's subscription of the SCIENTIFIC AMERICAN as the best Christmas present an employer can make his workman, or a father his son. The editor further adds:

"And let any manufacturer try the experiment of asking each man in his employ as to the interest he would take in reading such a periodical if it was placed before him, and he will be surprised at the amount of pleasure and choice information that can be furnished at a small outlay. For every paper thus put in the hands of his employes he would receive four times its value by reason of the increased interest which would be taken in whatever work might be in hand, to say nothing of the benefit which would be directly derived from the enhanced skill of the workmen. The weekly visits of the periodical would constantly remind each man that his employer was concerned in his welfare, and that he had exerted himself to show that interest. We know from personal experience that information gained from the columns of the scientific journal above mentioned is invaluable to the person who is interested in science, art, or natural history, and it would be truly a pleasure to learn that we had induced even one employer to take a step which he would ever afterward be satisfied was a good one."

We await to see how many will follow the good suggestion of our valued contemporary before this month closes. —ED.

Putnam River, Alaska.

The Ounalaska (Lieut. G. M. Stoney, U.S.N., commanding) arrived in San Francisco, October 25, having completed the exploration of Putnam River so far as the time allotted would permit. The river was explored by a steam launch three hundred miles, when rapids were encountered; then a canoe was taken and towed by hand about eighty miles further; and from this point a short portage brought a portion of the party to the head waters of one of the northern tributaries, which was fed by two large lakes. A mountain near one of these lakes furnished a view far to the eastward, up the main valley of Putnam River, and showed it flowing in undiminished volume as far as the eye could reach. The natives reported that seven days' journey further up the river there was a great lake, looking like a sea; and it is thought that this is the source of the river. There is little doubt that the river has its origin as far east as the British possessions, and probably near to the Mackenzie.

Putnam River empties into Hotham Inlet just north of Selawik Lake and to the southeast of Kunatuk River. There is a large delta at its mouth stretching back about forty miles, which is pierced by over one hundred channels, one of which is about one mile in width. The river is navigable to boats drawing from five to six feet of water, up to the rapids. Here the water flows at about ten knots per hour. The river and most of its tributaries lie within the Arctic circle. Most of the tributaries are from the north, and they are generally shallow but rapid flowing, while the water is very cold; in some instances the observed temperature being 38°, while in one case it was 33°. Only one considerable branch was found flowing from the southward. This is called the Pah River by the natives, and it is used by them in journeying to the south; for a very short portage from its source enables them to reach one of the northern tributaries of the Yukon River, and they are thus brought in easy communication with the trading posts. It is believed that like easy portage can be made from the Putnam to the river discovered by Lieut. Ray near Point Barrow, and which empties into the Arctic Ocean.

The country about Putnam is mountainous. Long ranges extend along either side, but they are peculiar in existing in small detached groups, each of which possesses distinguishing characteristics, some being clearly defined, sharp, rocky peaks, while others are smoothly rounded. The higher ones are estimated at about three thousand feet. From the tops of those which were ascended the whole country to the north appeared to be a confused mass of mountain peaks, and the natives stated that the country was of the same character to the Arctic Ocean.

The country explored was found to possess a warm and agreeable summer climate, the thermometer having reached 115° in the sun, while the nights were cool. The valley of the Putnam is heavily timbered with spruce, birch, cottonwood, larch, and willow; while flowers were in abundance, roses being seen in large numbers. Cuttings of these latter, together with specimens of coal, gold, and copper, and a huge fossil trunk, form a part of the material collected for the Smithsonian Institution.

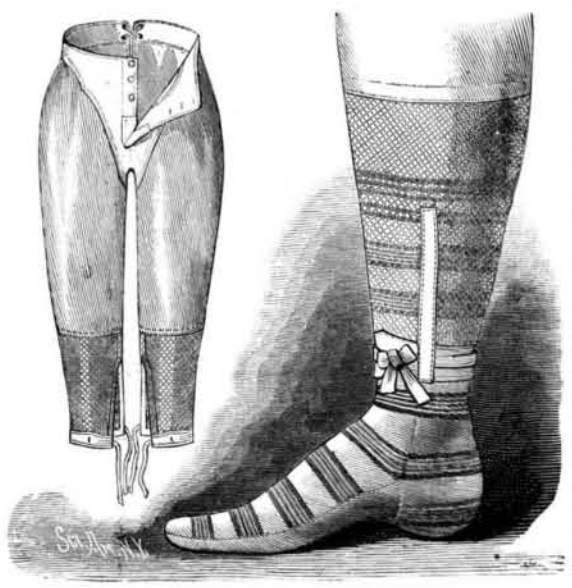
While Lieut. Stoney was absent, Ensign Purcell remained with two men in charge of the schooner, and made a survey of Hotham Inlet and the Selawik. He found that the Selawik River represented on the charts has no existence; but there is a channel, six miles in length, connecting Selawik Lake with a chain of three lakes to the eastward. He also found a five fathom channel over the Hotham Inlet bar.

The Ounalaska is a fifty-four ton schooner, and Lieut. Stoney was provided with two officers and a crew of eight men. There were no naturalists with the expedition.

While returning from his expedition, Lieut. Stoney encountered several severe gales. During one of the most severe he employed oil for stilling the waves, with marked success. The oil was rigged upon a spar to which a drag was attached, and the vessel was so maneuvered that the drag stood off the weather bow. The vessel holding the oil was so constructed that the oil was forced out in portions by each advancing wave. All the waves were affected by the oil, but the great foaming combers most markedly.

PATENT DRAWERS.

The top part of the drawers is made of woven or knit linen or cotton fabric, and the legs are made of the same material down to or a little behind the knees, and the lower part of the legs are of open work fabric. The perforated part of each leg is provided with an upright slit in the usual manner, and with bands or buttons at the lower end to hold the drawers leg securely, and at the same time prevent the socks from slipping off. The apertured parts permit of a free circulation of air, thereby keeping the legs cool and making the drawers comfortable and agreeable during hot weather. The front of the upper part of the drawers is



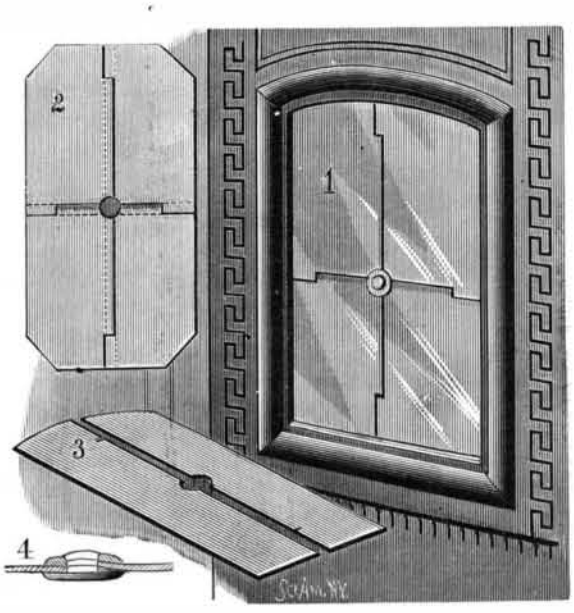
TOWLES' DRAWERS.

closed perfectly, one side overlapping and buttoning upon the other.

This invention has been patented by Mr. Wm. P. Towles, of 145 Baltimore Street, Baltimore, Md.

COMPOSITE MICA SHEET.

An invention recently patented by Mr. John L. Rorison, of Bakersville, N. C., is specially designed to meet the wants of retailers of stoves, who, with punch, rivet, and hammer, can join two or more small pieces of mica to form a sheet of any size and shape. Figs. 1 and 2 represent the completed sheet of mica, Fig. 3 shows the pieces separated, and Fig. 4 is a section through the rivet. In uniting four pieces the inner corner of each piece is slightly cut away, so that when they are put together a central opening will be formed for the passage of the rivet. The inner edges of each sheet are notched, so that when put together the edges lap past each other, forming good joints, and are at the same time locked in place. The contiguous edges being placed together, the rivet is inserted, when the washer is put upon the smaller end and the rivet headed down, thereby causing the head of the rivet and the edges of the washer to grasp and firmly hold the pieces. When only two pieces are used to form



RORISON'S COMPOSITE MICA SHEET.

the sheet, the edges are notched to form the lock joint, and the centers of the adjoining edges are cut away to make a passage for the rivet.

Civil Service Reform in Mines.

The recent mine explosion in the Connellsville region has led the mine inspectors to take steps to prevent a repetition of these horrors. This morning the inspectors met in this city. They will draw up a bill to present to the Legislature, in which miners ignorant of the business will be excluded from the mines. Pit bosses and men having charge of the ventilating of the mines will be required to pass a thorough examination before taking a position. It is also proposed that the inspectors move for establishing a school for the purpose of furnishing free instruction to men whose purpose is to engage in coal mining.

Magic Photographs.

What are called magic photographs are positives printed in a latent state upon white paper that it is only necessary to immerse in ordinary water to have the image appear.

The means employed for obtaining this curious and surprising effect are as follows: The positives are printed, from any negatives whatever, upon paper sensitized with chloride of silver, such as may be purchased of any dealer in photographic supplies. The printing is done with the aid of sunlight, either direct or diffused, in an ordinary printing frame, or, more simply, between two plates of glass held together by means of spring clips.

The image, when once printed, is fixed in a bath composed of 10 grammes of hyposulphite of soda dissolved in 100 grammes of ordinary water. It is not toned with gold, but is thoroughly washed with water after coming from the bath, so as to remove every trace of the hypo from the fibers of the paper.

This washing is absolutely necessary, in order that the paper may remain perfectly white after it has been treated with the following bath:

Bichloride of mercury	5 grammes.
Water	100 "

The image, when immersed in this bath, soon gradually begins to lose color, and finally disappears altogether. When the paper has become entirely white, it is washed in water and allowed to dry.

If it be desired to cause the latent image to reappear, it is only necessary to immerse the paper in a weak solution of hyposulphite of soda, or better of sulphite of soda.

To the back of these photographs there is attached a piece of bibulous paper impregnated with sulphite of soda. In this way, when the paper is immersed in water, the sulphite at once dissolves, and the image quickly appears.

The bichloride of mercury (corrosive sublimate) is a substance that should be used only with great precaution, as it is a violent poison. Care should therefore be taken to allow no delicate part of the body to come into contact with it, and to put the vessels containing it in a safe place out of reach.

The sensitive paper adapted for this curious recreation may be either albumenized or salted simply.

The sensitizing is performed by floating upon a 10 per cent nitrate of silver bath, for five minutes, either salted paper that may be purchased in this state or be easily prepared by immersing white paper in water containing 5 parts of table salt to 100.

After sensitizing, the paper is suspended by one corner, and allowed to dry in a dark place. For the balance of the operations one will proceed as above directed.

The *rationale* of the phenomenon is as follows: The image formed by the light is colored by the reduced silver. This image, when bleached by the bichloride, contains both calomel (chloride of mercury) and chloride of silver. Sulphite of soda possesses the property of dissolving chloride of silver, and of blackening chloride of mercury by forming a sulphide. —*Leon Vidal, in La Nature.*

How to Keep Cider Sweet.

Pure sweet cider that is arrested in the process of fermentation before it becomes acetic acid or even alcohol, and with carbonic acid gas worked out, is one of the most delightful beverages. The *Farm, Field, and Fireside* recommends the following scientific method of treating cider to preserve its sweetness. When the saccharine matters by fermentation are being converted to alcohol, if a bent tube be inserted air tight into the bung, with the other end into a pail of water, to allow the carbonic acid gas evolved to pass off without admitting any air into the barrel, a beverage will be obtained that is fit nectar for the gods.

A handy way is to fill your cask nearly up to the wooden faucet when the cask is rolled so the bung is down. Get a common rubber tube and slip it over the end of the plug in the faucet, with the other end in the pail. Then turn the plug so the cider can have communication with the pail. After the water ceases to bubble, bottle or store away.

Shameful Treatment of Inventors.

The fact that the revenues of the Patent Office are largely in excess of its expenditures is an unanswerable argument in favor of the very considerable increase of the clerical force in that office. American inventors do not ask to have reduced the fees which must be paid to get a patent. What they want is that their applications shall receive immediate attention, and that the money demanded of them shall be used to secure this for them. As the matter now stands, they are compelled to pay for that which they do not get. They are forced to submit to long and often ruinous delays because there are not enough clerks in the office to do the work, and meantime the money which they pay to have the work done is suffered to lie idle and accumulate until it now amounts to a fund of two or three million dollars. It would be difficult, we think, to conceive of anything more asinine than such an arrangement.—*The Textile Record.*

It is too bad, as our contemporary says, with such a large amount to the credit of the Patent fund, that the Patent Office should be crippled in its usefulness for the want of a sufficient clerical force to attend to the business, owing to a lack of a little Congressional wisdom. The inventors of the country are not small in numbers or weak in influence, and it is incumbent upon them to use their individual influence with the Congressmen from their respective districts in respect to the necessities of the Patent Office.