

Mr. George H. Boszhardt, of Ida Grove, Iowa, has patented an improved attachment for the damper rods of stove pipes, furnace pipes, and other pipes and flues, which is so constructed as to hold the damper rod and damper in any position in which they may be placed, and at the same time indicate the position.

Mr. Benjamin B. Oppenheimer, of Trenton, Tenn., has patented an improved fire escape or safety device, by which it is stated a person may safely jump out of the window of a burning building from any height, and land without injury on the ground. It consists of a parachute attached to the upper part of the body, in combination with overshoes having elastic bottom pads of suitable thickness to take up the concussion with the ground.

An improved shirt has been patented by Mr. Richard O. Davies, of Newark, N. J. The object of the invention is to furnish shirts having fastening devices permanently connected with their neck bands and cuffs. It consists in the combination with the neck band and cuffs of shirts, of tabs having buttons fastened to their free ends, so that the buttons may be used for securing the neck bands and cuffs when required.

Mr. Truman S. Richards, of Woodman, Wis., has patented a buckle for use on harness, and for other purposes, to which the strap may be attached readily, without stitching, which will hold firmly, and permit ready disconnection of the strap. It consists in a buckle fitted with a wedge-acting slide or clamp fitted to move lengthwise of the buckle and clamping the strap, and the slide is also formed with serrations that act to hold the strap more securely.

Mr. Russell B. Griffin, of Osage Mission, Kan., has invented an improved butter package that perfectly protects the butter from weather, dust, etc. It consists in the arrangement of a butter package having its sides beveled or curved, and lined with cotton or linen cloth overlapping on top, and having two straps of metal, wood, or cardboard, to strengthen it.

Mr. Joseph McMullin, of Casey P. O., Iowa, has invented an improved implement for drawing dried fruits, sugar, and other materials from barrels. It consists in two bars formed with claw-shaped ends and pivoted together crosswise. The straight portions of the bars serve as handles, whereby the claw ends may be spread and then brought together, to pierce and separate the material. The points of the claws are of peculiar shape, by which they clear themselves when spread for dropping the fruit.

Mr. James C. Bowen, of Mandarin, Fla., has patented an improved refrigerator for shipping strawberries and other perishable fruits, which is so constructed that pieces of ice cannot be jarred out of the ice box to fall upon the fruit, and the waste pipe is arranged so that it cannot become clogged.

Mr. Louis Emile Jannin, of Paris, France, has patented an improved composition for stereotype moulds made from a cement composed of protoxide of lead and glycerine.

Mr. Levi Talcott, of Minetto, N. Y., has patented an improvement in fastenings for end gates of wagons. It consists of bolts provided with V shaped right-angular heads, held in a horizontal position, so as to be shot out from the ends of the gate and pass through mortises in the vehicle sides, where they are turned up at right angles to the mortise, thus fastening the sides and end gate together, and by the action of the heads the sides are drawn closely against the ends of the gate.

Messrs. George Wadsworth, of Boston, Mass., and Joseph P. Smith, of New York city, have patented an improved brush. This is an improvement in the class of bristle brushes used for painting, whitewashing, etc.; it consists in an arrangement whereby the bristles are firmly secured to the stock or head; also in providing the stock with a dovetailed core, along which the butts of the bristles are laid and secured by wooden strips on each side held under a metal ferrule securely fastened to the core outside of the bristles.

An improvement in violins has been patented by Mr. Carl Kreutzer, of New York city. This invention relates to the construction of violin bodies, the object being to improve the tone of the instruments and render them lighter, more ornamental, and less costly. The inventor constructs the back, belly, and sides from sheets of veneer or thin wood glued together with the grain crossing. These compound veneer sheets are cut out and stamped up to shape, and the body then formed by gluing the parts together. The ornamental edge is formed of a separate piece that consists of alternate layers of light colored wood and ebony, and is worked to a beaded form after attachment.

Mr. James T. Brown, of Saranac, Mich., has patented an improved fire-pot for soldering-iron heaters, which consists of a cylindrical metallic vessel or combustion chamber with a perforated bottom and side openings fixed centrally within a larger cylinder that is provided with a movable cover and smoke pipe; and it further consists of a circular shallow vessel, called a "generator," that is set in the top of the interior cylinder, and supplied with oil or gasoline, or other hydrocarbon, through a pipe connecting with an elevated reservoir.

Horse Car Heaters.

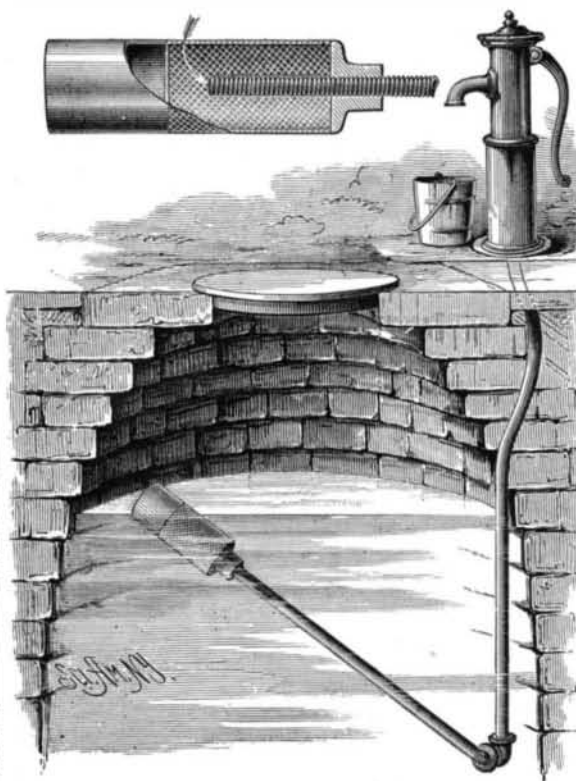
New Haven horse cars are now successfully heated by a patent stove suspended under the middle of the car floor. The invention is a box 6 inches wide and high and 12 inches in depth or length, surrounded by a casing, into which air is introduced by perforations, other perforations leading to a reservoir of air under the seat, and the front of the reser-

voir opening into the car by register holes. The smoke escapes by a pipe passing through a similar reservoir or case, the pipe extending above the car roof at the driver's platform. The fuel is anthracite, giving off no visible smoke. Two cars so fitted, running 16 hours, burned but one bucket of coal.

A NEW FILTER.

The accompanying engraving represents an improved water-drawing and filtering apparatus recently patented by Mr. John B. Lindsay, of 117 West Third street, Davenport, Iowa. The detail view, which is partly in section, shows the internal construction of the filter. The large cylinder containing the filtering material has in one end an airtight chamber which buoys up the filter and keeps it at or near the surface of the water. Silicious sand, the filtering medium, is contained in the perforated portion of the cylinder, which is screwed on the end of the suction pipe of the pump. The portion of the pipe that projects into the cylinder is perforated and covered with wire gauze to prevent the entrance of sand to the suction pipe.

The pipe has a swivel joint which allows the filter to accommodate itself to the level of the water in the cistern or reservoir.



LINDSAY'S FLOATING FILTER.

The inventor of this filter claims that water taken from the surface is purer and better than that taken from the lower portion of the well or cistern; and he also states that there is a peculiar advantage in drawing the water through the filter rather than to allow it to pass through by its own gravity.

As soon as the pumping is stopped whatever impurities may have collected on the exterior of the filter drop off, so that the filter is really self-cleaning.

Tracing and Retouching Desk.

In the *Photographisches Archiv* Herr J. Terhelf gives directions for making a cheap retouching desk suitable for employing with artificial light during the long winter evenings. The requirements are a common, low petroleum lamp without a stand, having a round burner and a pyramidal pasteboard box. The latter is made by cutting four pieces of strong pasteboard into pyramidal shape, the bottom and sides each being about 12 inches in length and the top 3 inches. These four pieces of pasteboard are now fastened together so as to form a four sided pyramid, open at both top and bottom. The outside of the box is then covered with dark paper. In one side of the box, at a convenient height, cut a hole to permit the passage of the light; at the inner side of the hole place a piece of ground glass slightly tinted with Berlin blue, and on the outside, just at the bottom of the hole, paste on a strip of thick cardboard upon which to rest the negative. The desk being now ready place the lamp inside it and set to work. On account of its cheapness Herr Terhelf speaks only of making this retouching desk of pasteboard; but, if found convenient, one would think a less temporary one might be made in wood on the same plan, which could still be easily moved from place to place, or even, if provided with hinges, fold up into very small compass.

The Man who Forgot his Identity.

Our readers will remember the interesting case of forgotten identity reported not long since from St. Clairsville, Ohio. The publicity given by that report has been the means of discovering the antecedents of the unfortunate gentleman, who turns out to be Royal Cowles, formerly a jeweler of Cleveland, Ohio. A paper of that city says it is now definitely ascertained that when Mr. Cowles left Cleveland he was suffering under a terrible mental strain, which clouded his intellect. He had wandered aimlessly into the

southeastern part of Ohio, when his condition attracted attention, and he was placed in a hospital at St. Clairsville. He has been fully identified by his friends; but whether the gap in his memory has been filled is not reported.

Correspondence.

The Utilization of Sawdust.

To the Editor of the *Scientific American*:

In your issue of December 13, I noticed an article under the title, "Invention wanted to utilize sawdust."

It is here a well known fact that sawdust, by itself alone, has been successfully used for producing potatoes. For this purpose it is only necessary to lay on the open ground, in rows of two to three feet apart, the potatoes that are to be planted, and cover the same with a bed of sawdust (say) from six to twelve inches thick. If the season is in the least favorable it will be astonishing how this method of culture will prove satisfactory. Another method, which I think preferable, is to prepare the soil by plowing and pulverizing, to open furrows two to three feet apart, to put in said furrows a four inch-layer of sawdust, on this lay the potatoes that are to be planted, covering them with another layer of sawdust, and over this a layer of the soil.

Sawdust can be used with advantage about fruit trees. Mixed with the soil it enriches the latter, and placed on its surface it maintains moisture and prevents the growth of many troublesome weeds. In vegetable gardens it does also very well, especially around cabbage plants.

Sawdust will rot as soon as any other vegetable matter, according to the species of wood from which it originates. Mixed with the soil it keeps the latter more mellow. An application of sawdust, say of three cart loads to the acre, during four years, over the poorest land and plowing, and cultivating same each year, will render it the most fertile.

Abbeville, La. A. D. MARTIN.

Traction Engines in the Sandwich Islands.

To the Editor of the *Scientific American*:

I am manager of the Kohala Sugar Company, Kohala, Sandwich Islands, and in your issue of February 15, 1879, you gave a sketch of our traction engine. I have taken the *SCIENTIFIC AMERICAN* for some years, and some time ago I noticed a leading article, in which you said in time the traction engine would be the feeders of all the main lines for farmers getting their produce to markets. I think you were right, and it may be interesting to you to know that the engine is a success with us. We have two more nearly due from England, and I expect during next year (1880) to do away with cattle altogether in hauling cane to mill, and intend, if everything goes right, to see in time what we can do at steam plowing. With our 10 H. P. engine we have been hauling to mill from 75 to 90 tons weight of cane per day from a distance of one mile on an average (two miles there and back), and taking the place of 80 head of cattle. We use on an average for this amount of work 800 lb. of common Sydney (Australia) coal per day. I got from New York 50 tons of Pennsylvania anthracite coal, but it would not do. It was too slow, and would not raise steam when we were going with a full load, which soft coal will do, and which you must be prepared to do on coming to a hill or up grade. In trying the engine, we brought 10 tons of cane (exclusive of weight of wagons) up a grade, rise 1 foot to 11 feet 3 inches, with 100 lb. steam, and in a pinch you can safely put on 150 lb. steam. I had a man from the shop in England come out to show us how to run her, and teach any one I wanted, and he will remain till the new engines arrive. We thought it best to go to this expense so as to be sure we should know what the engines could do, and we are satisfied that the expense of getting him out, and returning him, is not lost to us.

The new engines are of the latest patent, 8 H. P. driving wheels 7 feet diameter, instead of 6 feet, and have a drum and 100 yards of wire rope attached, so that if the wagons are loaded in a boggy place, we block the wheels of the engine and run the rope out to the wagons and fetch them up to the engine by turning the drum.

G. C. W.

What is a Cold?

On a less authority than the *London Lancet* would the theory be credited that the resolve of a person not to take cold is ample protection against having one. "It is startling to discover," says the *Lancet*, "how little we know about the commoner forms of disease. For example, a 'cold' what is it? How is it produced, and in what does it consist? It is easy to say a cold is a chill. A chill of what part of the organism? We know by daily experience that the body as a whole or any of its parts may be reduced to a considerably lower temperature than will suffice to give a man a cold if the so-called chill be inflicted upon the surface suddenly. Is it, then, the suddenness of a reduction of temperature that causes the cold? It would be strange if it were so, because few of the most susceptible of mortals would take cold from simply handling a piece of cold metal or accidental contact with ice. The truth would seem to be that what we call cold taking is the result of a sufficient impression of cold to reduce the vital energy of nerve centers presiding over the functions in special organs. If this be the fact, it is easy to see why nature has provided the stimulus of a strong fit of sneezing to rouse the dormant centers and enable them at once to resume work and avoid evil consequences. This explains why the worst effects of cold do not, as a rule, follow upon a 'chill' which excites much