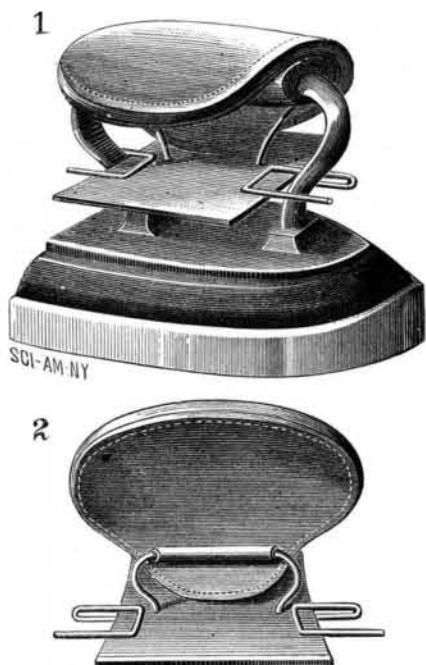


**SAD-IRON HOLDER.**

The annoyance resulting from the heat the hand encounters when grasping the old-style sadiron has led to the introduction of many devices tending to obviate this. One of the best and most recent has been patented by Mr. John O'Neil, 24 1/2 Dorchester St., South Boston, Mass.

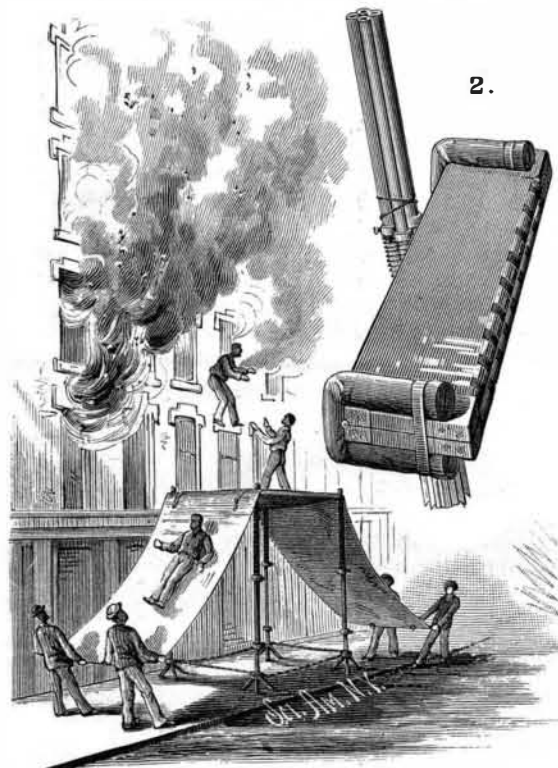
The body of the holder consists of a pad of convenient shape to be taken in the hand, and is made, preferably, of asbestos cloth covered with ordinary woolen cloth, although any good non-conductor may be used in its construction. Beneath the holder is a metallic shield disposed horizontally between the handle and the body of the iron. A wire passes through one side of the holder, which is there narrowed and extended so that when grasped by the hand it will fold un-

**O'NEIL'S SAD-IRON HOLDER.**

der the wire and permit the hand to go in over the shield. The ends of this wire pass through holes in the shield, and are then bent so as to pass on each side of the handle of the iron, as shown in the engravings. The holes in the shield are enlarged, so that it is free to rock on the wire as on a journal. It will readily be seen that the shield and holder may be easily detached from the iron.

**IMPROVED FIRE ESCAPE.**

The simple and efficient fire escape shown in the annexed engraving is the invention of Mr. Henry B. Church, of Grand Rapids, Mich. A stout blanket, attached to a folding frame and provided at its ends with aprons of some strong textile material, is supported upon four standards by spiral springs surrounding the standards and resting on adjustable collars. The standards are telescopic, the upper part being made of iron pipe and movable on the rod form-

**CHURCH'S FIRE ESCAPE.**

ing the lower part. A set screw passing through a collar at the lower end of the pipe clamps the pipe in any desired position on the rod. The standards have folding legs, and are held in proper relation to each other by chains. The aprons are provided with handles, by means of which they may be held in an inclined position, as shown in Fig. 1.

A person escaping from a burning building jumps into the blanket, which yields with the impact of his body and arrests his downward motion without injury to himself or the apparatus. Descent is made from the blanket by sliding down the aprons, as shown in the engraving. Fig. 1 shows the fire escape in use, and Fig. 2 shows it folded.

**Oil from Sunflower Seeds.**

The sunflower has long been grown for its oil seeds in Russia and India, and the cultivation has been more recently taken up in Germany and Italy. The plant grows readily in most soils, but prefers light, rich, calcareous land, unshaded by trees. In Russia the seed is drilled into lines 18 inches apart, and the plants are thinned out to 30 inches apart in the rows, thus giving about 11,000 plants in an acre. The quantity of seed required for an acre is four to six pounds, and the sowing takes place in September-October, the crop being ready to harvest in February. In England it is recommended to be planted 6 inches apart and 1 inch deep, and to be earthed up when 1 foot high, requiring no subsequent attention. The yield of seed is much increased by topping the plants, and the best fertilizer is old mortar. Each plant produces about 1,000 seeds, chiefly on the main head.

Experimental culture in France gave a return of 1,778 pounds of seed, yielding 15 per cent of oil (275 pounds), and 80 per cent of cake, from an acre; but the product varies considerably according to soil, climate, and cultivation, and the average may be roundly stated at 50 bushels of seed from an acre, and 1 gallon of oil from 1 bushel of seed. The percentage of oil to seed ranges from 16 to 28; and that of husk to kernel from 41 to 60.

The Italian cultivation is confined to the neighborhood of Piove and Conegliano, in Venetia. In Russia the plant is most extensively grown in Kielce and Podolia, and the district of Birutch, in Voronej; the production of seed is now estimated at 8,000,000 poods (of 36 pounds), from an area of 80,000 dessatines (of 13,067 square yards). In Tartary and China it is cultivated in immense quantities, but no actual statistics are available. In India (Mysore) 1 acre of land gives 11 1/2 cwt. of seed, which yields 45 gallons of oil, which is there compared with ground nut oil, and applied to the same uses. The Russian seed is expressed on the spot, and the oil is largely employed for adulterating olive oil. The purified oil is considered equal to olive and almond oil for table use. The chief industrial applications of the oil are for woolen dressing, lighting, and candle and soap making; for the last mentioned purpose it is superior to most oils. It is pale yellow in color, thicker than hempseed oil, of 0.926 specific gravity at 15°, dries slowly, becomes turbid at ordinary temperatures, and solidifies at -16° C.—*Drug Reporter*.

**A Musical Electrical Wheel.**

An experiment by Prof. H. S. Carhart is as follows: A disk of sheet iron was pierced with two circles of quarter-inch holes concentric with the disk, the number of holes in the two circles being thirty-two and sixty-four respectively. On one side of the disk was placed a horseshoe magnet with its poles very near the rows of holes; on the other side were arranged two corresponding induction bobbins. The circuit was completed through a telephone and either bobbin at pleasure. Upon rotating the disk rapidly, a clear musical sound was produced in the telephone, the pitch rising with the rapidity of rotation. Moreover, the bobbin opposite the circle of sixty-four holes gave the octave above the other, and each gave a note of the same pitch as was produced by blowing a stream of air through the corresponding holes.

**Curious Properties of Iron and Steel.**

It is well known to electricians that the best steel makes the best permanent magnet. But the magnetism of steel depends on how hot or how cold the metal is. For example, steel loses its magnetism if subjected to a temperature of 100° below zero; it also loses its magnetism when heated to yellow heat; that is, between red and white heats. Soft iron, when heated red hot, is not attracted by a magnet.

**IMPROVEMENT IN DUST-PANS.**

It is with some difficulty that an ordinary dust-pan is held by one hand while the dust is swept upon it by the other. Every housekeeper knows this, and the wonder is that the simple and efficient device shown in the engraving was not invented before.

This improvement enables the sweeper to hold the dust-pan by hand or foot; but the user will not beslow in making a choice as to which way is preferable. Holding the dust-pan by foot enables the sweeper to stand upright, a position which permits of readily gathering all of the dust in the vicinity of the pan, using the broom with both hands.

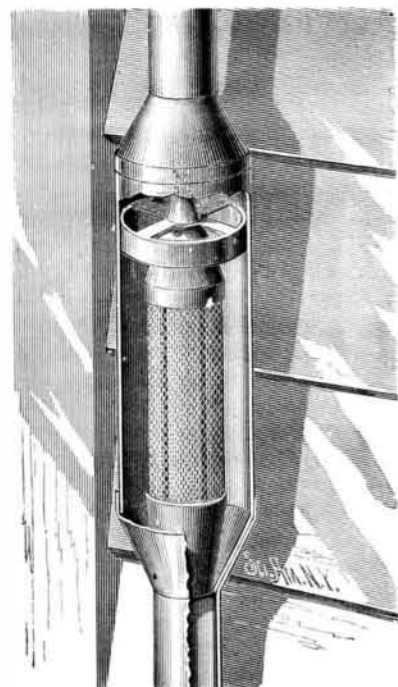
This dust-pan is made of the usual size and shape, and with the patented appliance is arranged so that the pressure of the foot causes it to adhere closely to the floor, so that the dust is swept and retained upon the pan instead of passing underneath it. It can be moved easily around the floor with the foot, the dust remaining on the pan. There is no solder used in its construction, consequently there is nothing to prevent it outlasting the ordinary dust-pan.

A frame corresponding nearly to the shape of the dust-pan is formed of band iron and secured to opposite sides of the pan, and at the back it is attached to a foot piece provided with a rest, which touches the floor, and has a horizontal arm extending toward, and secured to, the back of the dust-pan. The engraving shows so well the manner of using this device that no further description will be required.

This useful invention has been patented by Mr. William M. Valentine, of Glen Cove, L. I., who will furnish any further information that may be desired.

**IMPROVED FILTER.**

This filter, or strainer, may be attached to rain water conductors, so that the water from the roof will have to pass through the filter before entering the cistern, and by this means be relieved from bugs or other obnoxious matter which lodges in a dead water receptacle, so that the flowing water does not come in contact with them. The case is formed of sheet metal and has a transverse section about twice that of the conductor. To the lower end is fitted a nipple by a suitably shaped reducer, and to the upper end is fitted another nipple by a reducer to which is attached a third nipple fitting closely but detachably in the upper end of the tube so that the filter may be opened and closed when required. Within the tube is arranged a short section of

**JAMES IMPROVED FILTER.**

wire gauze tube of about the same size as the conductor, and ribbed inside with wires to prevent its collapsing. To the lower end of the wire tube is attached a slightly tapered nipple which forms a tight but detachable connection with the lower end of the case. The upper end of the wire tube has a taper cap which closes the end to the water, and which is centered in a spider frame that holds the upper end of the tube in position. Between the lower nipple on the wire tube and the case is an annular pocket in which all matter separated from the water by the gauze falls. The

**VALENTINE'S IMPROVED DUST-PAN.**

filter may be connected to any part of the conductor or to the cover of the cistern.

The invention has been patented by Mr. Samuel James, of Lebanon, Missouri.

**Amber Dressing for Silk Goods.**

Thummel, of Berlin, dissolves one pound of amber in two pounds of chloroform and applies this solution to the silk with a sponge or brush. The goods are next dried in a drying chamber and the chloroform recovered. They are then passed between rollers heated from within, which imparts to them a remarkable softness and elasticity.