

## COAL RECEPTACLE.

The accompanying engraving represents a coal receptacle which effectually prevents the escape of dust into the apartment wherein it is placed, and yet permits of the easy withdrawal of the coal by means of a shovel. The bottom of the main body of the receptacle is curved downward from the forward side, and then upward to meet the rear wall. At a point just upon a level with the forward edge of the bottom there is a door; and just above the opening that is closed by the door, there is a rearwardly inclined partition, shown in Fig. 2, which does not extend entirely across the box. Below this partition is arranged a deflecting plate held to the rear wall. Fitted within the main receptacle is an extensible section, which may be held



NIEHOFF'S COAL RECEPTACLE.

in any desired position by means of a set screw. The position of the partition and deflecting plate prevents the coal from extending to the bottom of the door, but permits a quantity to always rest upon the curved floor. The receptacle shown in Fig. 3 is designed particularly for use in flats and apartment houses; it can be made to hold a large quantity of coal without occupying much space in the room.

This invention has been patented by Mr. Henry Niehoff, of 74 West 53d Street, New York City.

## ASH SIFTER.

The inclined box-shaped flue communicates at its lower end with a hollow base, in which are two drawers, one to receive the sifted coal and the other the fine ashes. Extending entirely across the flue is an inclined sieve, whose lower end rests on a partition between the two drawers. The lower end of the sieve has lips, one of which causes the ashes to be deflected into its drawer at a little distance from the edge, and the other abuts against the middle partition. On the surface of the screen are various deflectors, which cause the coal and ashes to be agitated through a tortuous course in their passage. In the top of the flue is a circular opening, around which fits a funnel-shaped hopper, the opening in the bottom of which is provided with a valve,



MILLNER'S ASH SIFTER.

which may be pulled up by a chain to allow the contents of the hopper to be discharged through its bottom. The hopper also has a bail and cover, so that it can be used as a portable ash bucket. This construction obviates the necessity of transferring the ashes from a bucket to the hopper, and the ashes may be transferred and sifted in a tightly closed case, thereby preventing all escape of dust.

This invention has been patented by Mr. G. W. Millner, of Charlottetown, Prince Edward Island, Canada.

## The Decline of Flour in Price.

According to statistical records, the average price of wheat flour exported from the United States, for periods of eleven months ending with May of this year and twenty years past, has been as follows:

Year.	Price per 1,000 bbls.
1866.....	\$4,749
1865.....	4,897
1864.....	5,588
1863.....	5,956
1862.....	6,149
1861.....	5,669
1860.....	5,878
1859.....	5,252
1858.....	6,358
1857.....	6,479
1856.....	6,308
1855.....	6,001
1854.....	7,146
1853.....	7,565
1852.....	7,141
1851.....	6,594
1850.....	6,112
1849.....	7,735
1848.....	10,061
1847.....	8,428

The movement has been steadily downward since 1866, excepting in several years when extraordinary causes checked the decrease. The bottom is reached in 1866, and now there are signs of an upward move that will accomplish a partial retrieval of the loss of the period mentioned.

## Luminous Stone.

Messrs. W. C. Horne and E. Ormerod, of London, England, have recently invented a method of utilizing the luminous powder prepared mainly as a sulphide of calcium, for admixture with cements, plaster of Paris, and concrete, the object being to prepare the articles with a self-contained phosphorescent property instead of coating them with luminous paint. They take the proper proportion of any suitable cement, with the right amount of the luminous powder, mixing these with water, and moulding it to the required shape in the usual way, after which it is laid on the ceilings or walls with a trowel. The patentees attach importance to placing the moulded articles as soon as dry in a bath of paraffine wax and benzoline, or other waterproofing substance equally good.

In the case of using the luminous cement upon a wall or ceiling, they sponge or brush the surface over with a solution of paraffine wax and benzoline or other suitable damp-proofing solution. The uses of a luminous cement are manifold, *e. g.*, for the garden—luminous concrete, as edging to garden paths and carriage drives, for guides and beacons at the entrance gates of drives, insides of stables, the base of balustrades, or the entirety of balustrades; for roads—as luminous beacons of corners of dark country lanes, and at the ends of bridges, ends of walls, and curbs of footpaths; for docks—for edging of piers and wharves; for waterworks—for the safety and dispatch of night work by the erection of luminous guides and beacons, and for fire plug notices on walls. In short, for any place where the light of day will sufficiently excite the phosphorescent property as to render the cement or concrete work luminous by night.

## Lecture Experiment.—The Ferrates.

BY C. L. BLOXAM.

The ordinary prescriptions for preparing potassium ferrate are not well adapted for lecture illustration. It may be obtained quickly by placing a fragment of potassium hydrate in a little solution of ferric chloride, adding a few drops of bromine, and, if necessary, gently heating; the resulting dark brown mass dissolves in water, yielding a fine red solution, which resembles the permanganate in its power of coloring a large volume of water, and may be kept for many hours without decomposition. Barium chloride produces a heavy purplish-red precipitate of barium ferrate, leaving the liquid colorless.

A fine red solution of calcium ferrate is obtained by adding a little ferric chloride to bleaching powder, and boiling with water. This solution also gives a purple precipitate with barium chloride. It is bleached by filtering through paper. It is well known that many samples of bleaching powder yield a light pink solution when boiled with water, from the production of calcium ferrate. Manganous sulphate destroys the pink color, and barium chloride precipitates the ferrate.

King's College, London, July 16, 1886.

—Chem. News.

## Oil on the Water.

Another instance of the marked benefits resulting from the use of oil on troubled seas was afforded by the recent experience of the steamship Werra, of the North German Lloyd's Line, which was disabled in mid-ocean during her last transatlantic voyage. The steamer had been taken in tow by the Venetian, and all went well until the evening of August 3, when a strong gale prevailed and heavy seas were constantly breaking over the bow of Werra, endangering the tow lines, and threatening the loss of the tow. The captain of the Venetian caused an oil bag to be hung from each side of his vessel and dragged some distance

astern. The result was almost immediate, and the sea became comparatively smooth around the disabled ship. The officers of the Werra were for some time ignorant of the cause of their relief. At the exchange of signals on the following morning, they reported that after the oil bags had been hung out, their vessel experienced much better weather, not a drop of water breaking on board, and the ship being in all respects more comfortable.

## HEAD REST FOR CHAIRS.

The upper portion of the head rest is covered with upholstery, and is slightly curved so as to form a comfortable support for the head. To the under side of the block is fixed a plate, having four guides which



BUSTARD &amp; SNAPP'S HEAD REST FOR CHAIRS.

range toward the center. In each guide is a jaw held in place by a screw. In the center of the plate is a socket, in which fits a ball held in place by the jaws. The ball is carried by a rack bar, which may be held at any desired height by a properly arranged pawl. It is obvious that when the head rest is fixed at the back of a chair, the top will move very easily backward or forward, or to either side, or at any angle upon the ball, to accommodate the position of the head of the person sitting on the chair.

Further particulars concerning this invention may be obtained from Messrs. Bustard & Snapp, of Stephen-ville, Texas.

## CHIMNEY COWL.

This chimney cowl is designed to prevent the downward draught and increase the upward draught in a chimney. Supported by standards above the chimney is a conical cap, from the center of which a tube projects downward. This tube forms a bearing for a spindle whose lower end is secured to a cowl shield shaped as clearly shown in the engraving. The weight of the spindle is carried by a ball bearing placed at the top of the conical cap. The upper end of the spindle carries an arm, to which is attached a vane. With this construction, the wind blowing across the chimney top so directs the cowl shield as to produce a partial vacuum under it and in the chimney top, thereby increasing the up-



CLIFFORD'S CHIMNEY COWL.

ward draught. An aperture in the flange of the cowl shield allows a jet of air to pass under the shield to further increase the draught. It will be observed that the bearings are removed from the chimney, so they will not be affected by the acids contained in the smoke. This arrangement insures the free movement of the vane, and renders the bearing surfaces very durable.

This invention has been patented by Mr. Neal Clifford, of 419 Franklin Street, St. Joseph, Missouri.