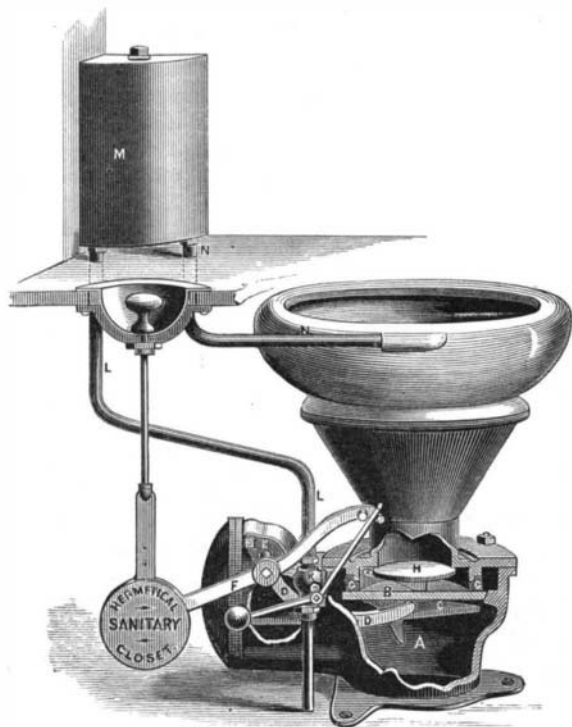


THE HERMETICAL SANITARY CLOSET.

Among the many appliances devised by modern invention to reduce the labor and increase the comfort of our daily life, none can be justly deemed of more importance than the water closet. And yet, of late years, it has become a serious question whether the evils following the introduction of this greatest of household conveniences have not more than balanced its advantages. In many of the fatal cases of diphtheria and typhoid fever, now so alarmingly prevalent, the origin of these maladies has been undeniably traced to the noxious exhalations of sewers and cesspools introduced through the soil pipes of water closets. The S pipe or water trap, on which most of the more expensive closets rely for the increased security claimed for them, has been often shown to be practically as well as scientifically useless.

**THE HERMETICAL SANITARY CLOSET.**

Even when a copious flushing of the pipes has not completely siphoned out the water in the trap, and given free entrance to the deadly effluvia, it has frequently been observed that a slight pressure of wind or tide at the mouth of the sewer is sufficient to force the gases bubbling through the seal; while, in the absence of any pressure, the water in the trap is constantly absorbing the poisonous vapors with which it is in contact, and giving them off into the air above. Nothing but a metal gate which shall hermetically seal the upper end of the soil pipe can answer the demands, not only of sanitary science, but of common sense; and the only problem for an inventor to solve is how to apply this metal seal in such a way as to be at once convenient in operation, simple in construction, sure in its effect, and reasonably inexpensive. All of these ends are attained by the hermetical sanitary closet shown in the illustration.

A is a valve chamber, with a direct and straight opening into the ordinary trap. B is the gate of the valve, which slides on guides, C, and is provided with anti-friction and non-corrosive slides, operated by the lever and cam, D, on the rock shaft, E, through the outside lever and counterweight, F. The gate, B, when closed, forms a hermetically tight joint against the yielding seat, G, and most effectually prevents the possibility of the escape of any foul or noxious gases. In order to prevent the gate of the valve being fouled by any material coming in contact therewith, the plate or apron, H, is hinged upon the lower part of the hopper and rests upon the gate, falling when the gate is opened and forming a perfect shield. When the gate is closed it raises the apron so as to close the bottom of the hopper, but not so as to make a tight joint, as it is desired so have the after wash rest directly upon the gate, B, thus leaving no air space for the collection of foul gases. When the lever, F, is raised to discharge the contents of the closet, it opens the inlet valve, K, which admits water through the inlet pipe, L, into the reservoir, M. The reservoir is provided with an outlet pipe, N, extending nearly to the top, the pipe, N, being open at the top and having also a small opening near the bottom of the reservoir. The reservoir is rapidly filled with water, which flows through the outlet pipe, N, into the bowl in sufficient quantity to thoroughly cleanse it. The lever, F, is then allowed to fall, which closes the gate, B, apron, H, and inlet valve, K. The reservoir is then left full of water up to the level of the outlet pipe, N; this water flows through the small lower opening in the pipe into the bowl to form the after wash. A small vacuum valve on the top of the reservoir admits air and insures the flow of the after wash.

The distinguishing features of this new sanitary closet are: The hermetical sealing of the sewer pipe; the absence of air spaces for the collection of noxious odors; the direct passage from the bowl to the sewer connection, avoiding the indirect and circuitous exits; the absolute certainty with which the proper quantity of water for the after wash is secured by the reservoir; the avoidance of spiral springs or

other attachments liable to be attacked by rust or impaired by use, and the facility with which it may be operated.

These closets are manufactured by Mr. John S. Leng, and can be seen at his office, No. 4 Fletcher street, New York city.

THE TRIAL OF THE "PYX."

The trial of the legal weight and fineness of the gold and silver coinage struck at the British Mint during the twelve months ending June 30 took place on the 10th of July, before a jury summoned for the purpose from the freemen of the Goldsmiths' Company, this company having supplied jurors for "pyx" trials since the reign of James I. Until recent years these trials were held at very uncertain intervals, and a great hardship was consequently put upon successive Masters of the Mint, in their not being able to obtain speedier acquittances for the very responsible work performed by them; but by an act of the present reign it was provided that such trials shall, for the future, be conducted annually, in such a manner as the Queen by order in Council shall direct. Consequent upon this Her Majesty issued an Order in Council, dated Windsor, the 28th of June, 1871, setting out the mode of procedure to be observed at a trial of this nature, and giving authority to the Lords Commissioners of the Treasury, whenever they should deem it expedient, to issue their warrant appointing a day for holding a trial of the pyx.

An interesting account of the ceremony has been given by the London *Times*, from which the following extracts are taken:

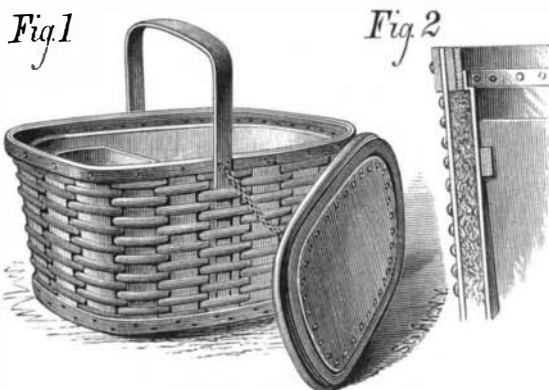
"After all the contents of the pyx have been duly counted the jurors select a few coins of gold and silver to be tested. Each of such coins must be within legal weight. These coins have next to be melted into ingots, and such ingots compared with the pure metals of the standard trial plates, so as to ascertain whether they are within the legal remedy as to fineness. The residue of the gold and silver coins in bulk has also to be weighed, and certain coins taken therefrom and assayed separately. All these processes involve the most minute accuracy and most delicate manipulation by the jurors, who are bound to embody their findings on all these tests in their verdict, which will be published in the next issue of the London *Gazette*."

"The work of the coinage executed at the mint since the previous trial of the pyx took place has not been on a very large scale. £3,246,537 altogether has been struck in gold, out of which 1,579 sovereigns and 3,053 half sovereigns were placed in the pyx. Silver coins to the value of £365,904 were also struck, out of which 626 half crowns, 559 florins, 276 shillings, 290 sixpences, 2 fourpences, 98 threepences, 2 twopences, and 6 pence were placed in the pyx for the purposes of the trial."

"At the hour named by the jurors the Queen's Remembrancer again attended at Goldsmiths' Hall to receive the verdict. In pursuance with the directions of the Order in Council, it was then read aloud publicly and in hearing of the jury, and was authenticated by the signatures of the jurors and the Queen's Remembrancer. The Treasury warrant for the trial being then attached to the verdict, both were taken possession of by the Queen's Remembrancer, to be kept on record in his office. The verdict was, as indeed it invariably has been, most satisfactory, both for the officers of the mint and for the public; and, indeed, shows the most accurate pyx since the new trial plates were made in accordance with the Coinage Act of 1870."

NEW REFRIGERATOR BASKET.

The engraving represents in perspective in Fig. 1, and in section in Fig. 2, a novel refrigerating basket recently patented by Mr. John R. Hare, of 63 W. Fayette street, Balti-

**HARE'S REFRIGERATOR BASKET.**

more, Md. This basket is designed as a receptacle for meat, butter, fish, and other perishable articles, for transporting and preserving them in hot weather. It may also be employed as a winter dinner basket, as it is as effectual in retaining warmth as it is in excluding it.

The basket, which is of a substantial character, has an inner wall or lining of tin, between which and the sides and bottom of the basket there is a packing of boiler felt. The lid is lined and packed in a similar way. At one end of the basket there is a removable ice receptacle, which completes the arrangement and makes it in fact a miniature refrigerator. As a lunch basket for picnics or travelers, or as a fishing basket, it must prove of great utility, as the contents of the basket are not only protected from the heat,

but from dust and rain as well, and nothing can run out to soil the dress of the person carrying it.

For further particulars address the patentee, as above.

A NEW FIREPROOF SHUTTER.

Next in importance to efficient means for extinguishing fires are the devices for checking its spread. It would be impossible to estimate the annual loss in the cities and larger towns from the spread of fires which might have been checked by the employment of proper means. It is not sufficient to provide portable apparatus capable of general application, although it is good in its place; each building should be provided with some protection which would prevent the communication of fire from without.

We illustrate an improved shutter which, if applied to a building otherwise fireproof, would afford the requisite protection.

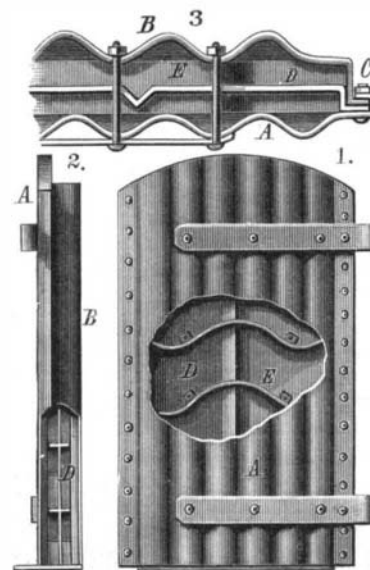
**POLLOCK'S FIREPROOF SHUTTER.**

Fig. 1 is a side elevation, with a portion broken away to show the internal construction; Fig. 2 is an edge view; and Fig. 3 is a horizontal section. A is the outer and B the inner portion of the window shutter, both made of corrugated sheet iron. The inner plate is bent to form a deep flange, C, which is bent outward at right angles. A plain iron plate, D, is interposed between the plates, A and B, as a central partition, dividing the space between them into two equal chambers. It has an edge flange, which is interposed between the flange, C, and the outer plate, A. The edge of the outer plate is bent over the edge of the flange, C, and plate, D, and the three plates are further secured by bolts and rivets. The plate, D, has a central crease parallel with the corrugations in the other plates to allow for expansion by heat. There are upon each side of the central plate, D, several curved strips, E, which maintain the distance between the plates, and prevent them from collapsing.

The corrugations permit the expansion of the plates without injury, and the several compartments formed by the partition and cross strips contain air, which is one of the best non-conductors of heat. This invention was recently patented by Mr. Simon L. Pollock, of St. Paul, Minn., from whom further information may be obtained.

An Odd Craft.

A correspondent, writing from Owen Sound, Ontario, sends us an account of a floating grist mill, or grist-grinding steamboat, now on the stocks at Little Current, Ont. The stern of the craft carries the machinery of an ordinary propeller. The forward part is fitted up as a grist mill, power being supplied by the engine. The intermediate space is to be used for freight, while the upper deck provides accommodations for passengers.

There is a double lack of grist mills and steam communication on and about Manitoulin Island; and the projector of the new craft, Mr. D. Miller, of Little Current, proposes to meet both wants at once. He expects that on receiving due notice of his coming, farmers near the various ports of the island will be ready with their grists; after grinding them he will sail with passengers and freight to the next port, grinding by the way, for his own use, the wheat he has received as tolls. When his steamer is tied up for the winter the capital invested in it will not have to lie idle, for the boat will at once be converted into a grist mill, without change of machinery.

Early Gold Payments.

Since publishing the card of Messrs. Wilcox, Crittenden & Co., relative to their paying their May pay-roll in gold, we have received several communications naming still earlier payments. Mr. J. James, of Pittston, Pa., writes that the Wyoming Valley Knitting Company paid their hands in gold May 15. The Hagerstown (Md.) Agricultural Implement Manufacturing Company give March 18 as the date of their first payment in gold. Mr. Geo. E. Stauffer writes that Messrs. Bennett & Dunk, tanners, of East Stroudsburg, Pa., paid their men in gold on March 15. This is the earliest date, so far as heard from.