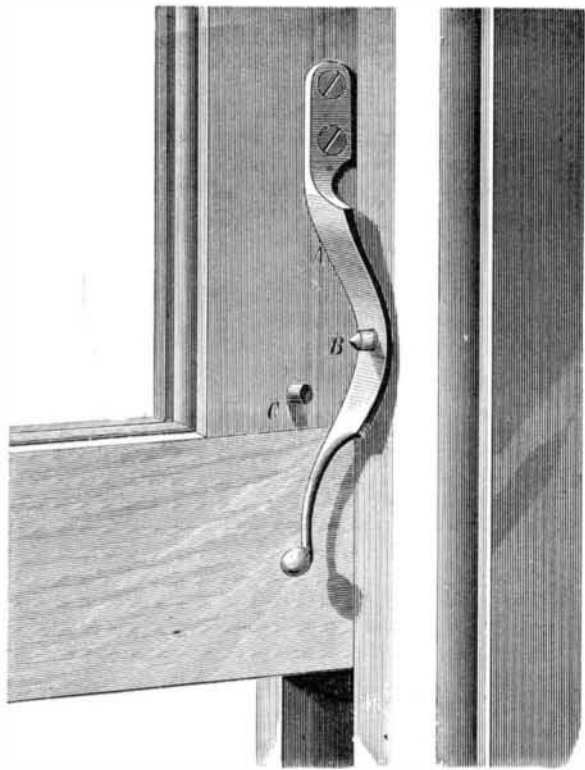


**IMPROVED SASH FASTENER.**

We illustrate, in the annexed engraving, a new and simple sash fastener, which, when secured, prevents the opening of sashes from the outside, and also their rattling by the wind. A spring band or latch, A, is screwed at its flattened upper end to the sash frame. Its middle portion is bent toward the window frame, and its lower part is carried outward to serve as a handle. In the middle part is a perforation which locks, by the spring action of the latch, on pins arranged along the frame, and one of which is shown at B. By releasing the latch, the sash may be raised or lowered; and by catching the former over the pin, it is retained securely in the required position. A stop pin, C, placed on the sash, back of the spring latch, defines the rearward motion of the



latter, so that it clears the pin on being released without being thrown back too far and thus impairing the efficiency of its spring.

Patented through the Scientific American Patent Agency, June 22, 1875. For further particulars, and for samples of the device, address the inventor, Mr. Peter Meyer, P. O. Box 1,221, Iowa City, Iowa.

**IMPROVED SEWER GAS TRAP.**

We have so frequently pointed out the dangers of sewer gas, when the same is allowed to escape into a dwelling through defective plumbing work, that it is hardly necessary again to draw the reader's attention to the great importance of means for preventing its entrance. It is very probable that a large proportion of such diseases as diphtheria, small pox, and typhoid fever, which rage in large cities, are directly owing to this cause. Nor do these effluvia arise solely in the tenements and rookeries of the city. It is a well known fact that epidemics of disease have suddenly appeared in buildings in some of the finest localities, from the neighborhood of which, to all appearances, filth is entirely absent. Only recently, and the circumstance seems to have escaped the notice of the daily journals, one of the largest and most costly edifices, devoted to French flats or suites of apartments in New York, was visited by diphtheria in violent form, hardly a family in the building escaping the visitation; and the cause was plainly traced to defective sewer connections.

The object of the invention here illustrated is to interpose an effective barrier to the entrance of sewer gas to any portion of the house pipes; and to this end, the apparatus is located at the point where the sewer connection enters the building, just inside the wall of the latter, so that all refuse must pass through it before reaching the street drain. It consists of an iron box, having a central diaphragm, A, which is bent down to form a slide, as shown, the lower edge of the bent part not reaching the bottom. B is the main drain pipe of the house, which terminates in the left hand chamber, which thus forms a trap. After entering the latter, the sewage runs over the slide and into the right hand chamber (which is thus another trap), and finally escapes by the pipe, C. This pipe, it will be observed, terminates under the slide, so that its end is really in a separate compartment, entirely cut off, airtight, from the rest of the box by the water seal. To carry off the emanations arising from the open end, the pipe, D, which passes through the diaphragm, leads directly up to the roof of the house, and to the pipe, E, a smaller bent tube, is connected, so as to lead off into the same conduit such gases as may arise from the material outside the slide, and to prevent siphon-

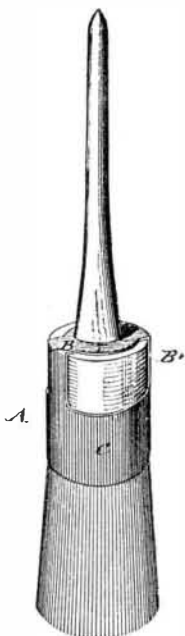
ing between the traps. In case the main drain pipe, B, does not communicate with the roof, as is almost always the case, a crosspipe may be led therefrom to the pipe, D, so as to prevent any siphoning which might take place in the first trap of the apparatus through said main pipe. The sliding doors shown above are for giving easy access to the interior.

The inventor, who is a practical plumber, claims that this device shuts out completely all sewer emanations from the house which it guards. He points out that it is practically impossible for the gases, even under any pressure which might be generated in the drain pipes, to make their way back through two constantly sealed traps, especially when the convenient outlet offered by the roof pipe, D, is already open to them. No alteration of the plumbing arrangements of the building is required for its insertion, that operation being performed as quickly and as easily as that of placing an ordinary trap in the cellar drain. The pipe, F, serves as an efficient mode of clearing the first chamber in case any sediment should accumulate. It is provided with a valve as shown.

For further particulars address the inventor, Mr. J. T. Campbell, 1,284 Broadway, New York city.

**IMPROVED BRUSH BINDER.**

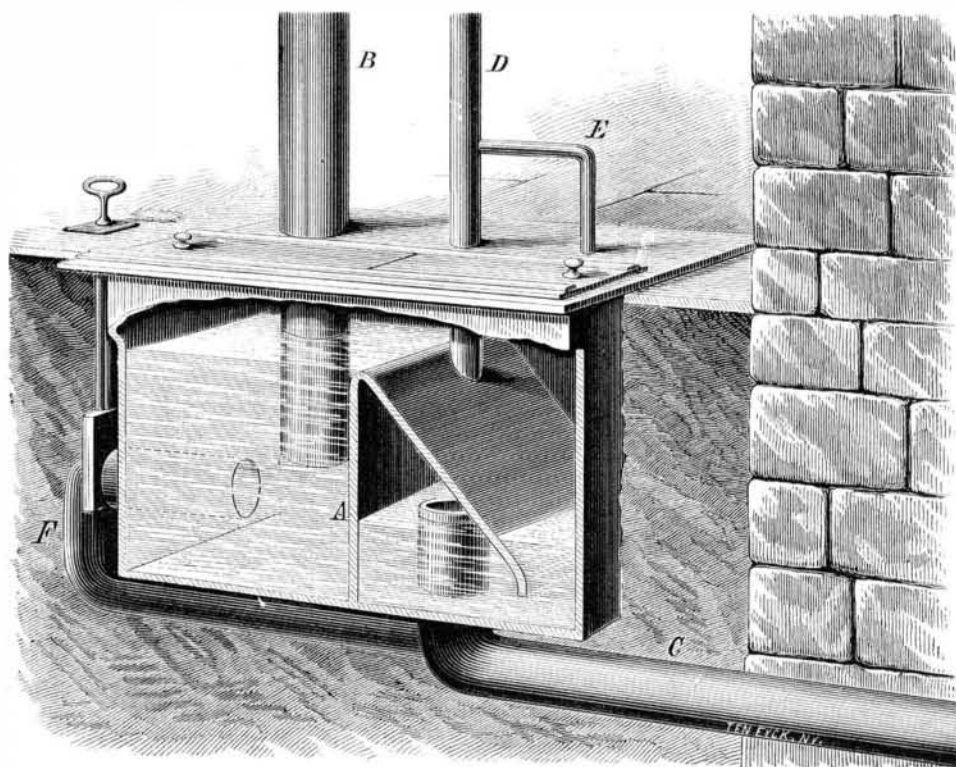
Mr. John Blair, of Boston, Mass., has recently patented a new binder for the bristles of paint and other brushes, which, he claims, is tightly fitting and quickly adjustable, and holds the bristles firmly together where they are in connection with the ferrule. It consists of a continuous piece of soft rubber, which is attached by a cylindrical band in the bristles below the ferrule, and by connecting the perforated yoke part to the ferrule and handle. The ferrule has side openings, which allow the head of the brush to be grasped.



In the engraving, A represents the improved brush handle or binder, which is slipped over the brush handle by its centrally perforated yoke part, B, until it is seated at the base of the same on the bristle ferrule. The yoke, B, connects by its side pieces, B', over the ferrule to the cylindrical main part, C, of the handle, which is made in one continuous piece therewith, fitting tightly around the bristles below the ferrule, and binding firmly, yet yielding thereon, so as to prevent the paint from rising to the upper part of the bristles. The binder is used with the brush until the bristles are worn down, preserving, in the meantime, the upper part of the bristles in their original condition.

**Discovery of an Ancient City.**

It is related in Russian journals that, during the recent military survey of the steppes, east of the Caspian Sea, the soldiers discovered the ruins of an ancient city, the existence of which has been utterly unknown in modern times. Judging from the ruins, the city must have had a large and fixed



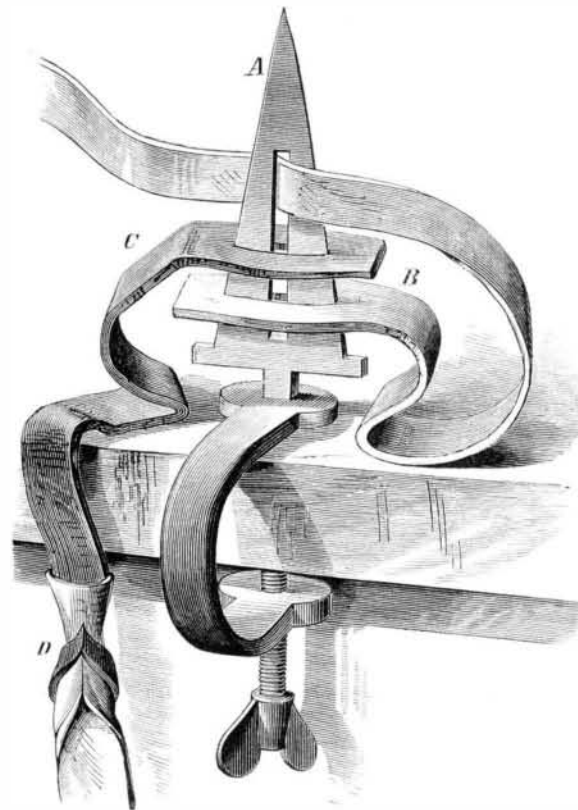
**CAMPBELL'S SEWER GAS TRAP.**

population. Several Arabesque minarets are still well preserved, and bear evidence of the skill of their builders. Remains of extensive aqueducts were also found, some of them still flowing with good drinking water. A number of inscriptions were copied by the officers of the expedition, and brought to St. Petersburg. According to a tradition of the Turcomans, the country was once very fruitful, and was watered by means of a canal.

**IMPROVED CARPET RAG LOOPER.**

A new and simple device for securing together the ends of the strips of rags used in weaving carpets is illustrated in the engraving herewith given. It affords a very quick and easy way of performing the operation, and at the same time is so constructed that the rags cannot become caught or tangled so as to necessitate delay to remove them from the apparatus. It seems to be an implement which will greatly facilitate the labor in hand carpet weaving.

A is a triangular slotted blade, having a reduced shank, which is suitably attached to a V-shaped clamp, by which the device is easily and firmly secured to the edge of a table. At the heel of the blade are formed short projecting arms, to keep the strips from slipping under the blade. The



mode of attaching the strips consists in passing the shorter of the two strips, B, over the blade first; then the second or longer strip, C, is forced over, and, finally, the end of B is brought through the slot in the blade. Both strips are then simultaneously lifted off the blade, causing the strip, B, to be drawn by a loop through the slits in both strips, thus forming a weaver's knot, as shown at D. The end of strip, B, is then pulled out of the slot.

Patented November 23, 1875. For further particulars, relative to proposals for manufacture, address the inventor, Mr. W. H. H. Wyckoff, Lesser Cross Roads, Somerset county, N. J.

**Bacteria found in the Perspiration of Man.**

Dr. Eberth, of Zurich, Switzerland, has found, says the *Medical Record*, by the aid of the microscope, in the sweat of the face some corpuscles which he considered as bacteria. This view became confirmed when he examined the axilla, breast, and inner side of the thigh of several persons in a state of perspiration. The sweat of these parts contained nearly always enormous numbers of bacteria. In most cases they originated from minute bodies found upon the hairs in the mentioned regions, forming little nodules on them, and giving them a grayish or a brick color. They were recognized by the author as accumulations of micrococci. They may rapidly increase in number, are smaller than the diphtherial micrococci, and are nearly indifferent to reagents (concentrated acids, alkalis, alcohol, ether, chloroform). Iodine colors them yellow. The vegetation of bacteria on the hairs may be observed in cases where they are changed already, beginning in places which have clefts between their cells. The vegetation occupies large spaces, especially in the direction of the longest diameter of the hair. Dr. Eberth observed a mycelium and micrococci, and thinks that the latter are the fruits of the former. Other investigators observed colored sweat, red and blue, which contained micrococci. It was difficult to decide in these cases if the coloring matter was adherent to the micrococci, or if it was a product of the vegetation.

**ORGANIC ELEMENTS AS ELECTRO-MOTORS.**—It appears, from the author's researches, that the interior of a muscle is negative, which indicates that there is oxidation in the interior and reduction at the exterior, and that all organized bodies appear formed of—so to say—an infinite number of electro-motors, which intervene probably in the phenomena of nutrition.—*Becquerel*.