IMITATION GROUND GLASS THAT STEAM WILL NOT DESTROY.

Put a piece of putty in muslin, twist the fabric tight, and tie it into the shape of a pad ; well clean the glass first, and then putty it all over. The putty will exude sufficiently through the muslin to render the stain opaque. Let it dry hard, and then varnish. If a pattern is required, cut it out in paper as a stencil ; place it so as not to slip, and proceed as above, removing the stencil when finished. If there should be any objection to the existence of the clear spaces, cover with slightly opaque varnish. In this way very neat and cheap signs may be painted on glass doors.

Sanitary Items.

ANECDOTES CONNECTED WITH VENTILATING AND HEATING ARRANGEMENTS.—A writer in a recent number of the *Sanitary Engineer* says ; A large public institute near New York was heated with a hot-water apparatus, which proved quite satisfactory until one very wintry day word was sent to the contractor that the inmates were freezing. He came, and after listening to the trustees' complaints at the apparent failure of the apparatus explained that the heat from the boilers was neutralized by the enormous windows on the north side of the building, reaching from the ground to the roof and covering some hundred square feet of surface. The casings of these windows were so loose that the keen wintry blasts were forced into the rooms and then down the registers, so that the hot-air was blown out of the cold-air supply box into the yard, melting the snow, and as an actual fact the inmates gathered around this out-door opening to warm themselves. The contractor said that if the trustees wanted more heating service they could have it, but more fuel would be needed. He thought the simpler mode of remedying the difficulty was to put shutters on the windows. This was finally done, and no trouble has since been experienced. Here is another illustration of popular ignorance. A gentleman while attending church one evening found that his feet were icy cold, so that he had to raise them from off the floor. Calling the attention of the sexton to the fact, the latter said with some perplexity, "Yes, we have a good many complaints of cold feet from others ; but I can't understand the reason why we can't keep the church warm ; we surely have fires enough." So saying, he pointed to a register in the floor directly behind the gentleman in the adjoining pew. Looking around, the latter could see that there was a hot fire in the furnace beneath, and yet no heat came up. When a handkerchief was placed over the register it scarcely stirred. The visitor asked the sexton. "Have you any means of ventilation ?" "No, sir" "Are there no windows open ?" "None whatever" "How, then, can you expect the air to come in here if it can't get out somewhere ?" There was no response ; the man was nonplussed. "Did you ever try to blow into a bottle ?" continued the inquirer. "No sir." "Do you think, if you did, that you could force any more air into a bottle than was in it before ?" He couldn't say ; never had thought of it. "Well," continued the gentleman, "you would soon find, if you tried, that it was impossible ; and neither can you force air into this church through a register if you don't open a window or some other orifice." But, the sexton demurred, "opening a window would let in the cold air, wouldn't it ?" "You just try it," was the response ; "Raise ome of the windows on the leeward side of the church, and see what will happen." It was done, and instantly the handkerchief lying on the register rose half-way to the ceiling with the force of the ascending current. The sexton stood and stared in astonishment. "Now what you want to do," explained the visitor who was a ventilating engineer, "is to keep your windows open, or to put in ventilators." He further offered to plan the latter free of charge to the church, and left his card for the trustees to call on him, but, of course, they never came near him, and I suppose cold feet are still the main attraction to the faithful attendants of this church, in spite of the red-hot theology preached there.

RANSOME'S HYDRAULIC CEMENT.—*Engineering*, in an issue of recent date, speaks highly of Ransome's hydraulic cement, which is shown by actual tests to be superior to good Portland cement. Mr. Ransome's first efforts were directed to overcoming the objections to using Portland cement for decorative purposes, for which it is unfitted on account of its color. He obtained a beautiful white cement, capable of receiving a polish resembling Carrara marble, by burning a mixture of kaolin, chalk, and soluble silica which he obtained from New England. After burning, the mixture was composed of 60 parts of lime, 12 parts of alumina, and 22 parts of silica. This product, though valuable for special purposes was too expensive to compete with ordinary cement, and Mr. Ransome, therefore, began the use of blast-furnace cinder, granulated by Wood's patent apparatus. This slag sand, made at the Tees Iron Works, Middlesborough, was found to contain :—

Silica	38.25
Alumina	22.19
Lime	31.56
Magnesia	4.14
Sulphide of lime	2.95
Oxide of iron	0.91

The use of slag for cement is by no means new, large quantities having been turned out for years by Lurmann, at the Osnabrueck works in Germany ; but it would seem that Mr. Ransome's method is capable of producing exceptional results. He reduces the slag to a fine powder, and after mixing it intimately with one or two parts of powdered chalk or limestone, burns it at a moderate temperature.

ACTION OF SEWER GAS ON LEAD, ETC.—The sanitary inspector of Dundee, Mr. T. Kinnear, has watched the effects of the gas on portions of the zinc eaves of buildings, where it was striking on the under part, and found in the course of a couple of years or so, pretty large holes eaten completely through, showing that material could not long withstand the effects of the gas. Lead is, of course, more durable than zinc, but the difference is only a question of degree, as shown by the fact in not a few of the water-closets repaired by the officers of the department during the year, small apertures were found in the main vertical lead pipe, and in the cross or horizontal one leading from it to the trap of the closets various perforations were found on the top, indicating clearly the operation of foul air from the drain. Lead traps and soil pipes from water-closets, baths and fixed basins are all subject to wear and tear ; but the traps being hardened with the additional strain of barring the passage of sewer gas, do their work less efficiently, and for a much shorter period than they are generally credited with, hence the necessity for proper ventilation and occasional inspection.

EFFECT OF SANITARY OPERATIONS.—The Registrar-General, in the last quarterly report, gives an example of how a district may be improved by the adoption of a proper system of sanitation. He instances the town of Llandudno, which at one time had a high death-rate, and which, of course, necessitated something being done to lower it. A scheme of sewerage was designed by Mr. Baldwin Latham, and carried out, at a cost of £30,000 with great success. The death-rate is now nominal, being only 8.4 per 1.000, and during the three months in question not a single death from zymotic disease took place, In order to value the change which has occurred, we may point to the neighborhood of the town—the rural district outside, which is not sewered, where the mortality was 38.6 per 1.000, with a zymotic death-rate of 4.3 per 1,000. The Registrar gives great praise to the town for its enterprise, and when the new works for a water supply are completed, no doubt the death-rate will be further lowered.—*The London Metropolitan.*

SANITAS.—Russian turpentine and water are placed in huge earthenware jars, surrounded by hot water. Air is driven through the mixture in the jars continually for 300 hours, the result being a decomposition of the turpentine and the formation of the watery solution of the substance, to which Dr. Kingsett, the discoverer, has given the name of "Sanitas." After evaporation the substance, as sold in tin cans, is a light brown powder, of a very pleasant taste and odor, and capable in a very remarkable degree of preventing or arresting putrefactive changes. This new desinfectant has been in use for some time in England, and is highly spoken of. It is said to have a pleasant odor, is not poisonous, and does not injure clothing, furniture, etc. For household uses it would seem well adapted.

GUTTA PERCHA.—M. Vogel states that gutta percha dissolved in sulphuret of carbon in all proportions, and without the aid of heat, when placed on the surface of any object, the carburet of sulphur evaporating with great rapidity, leaves a thin layer of gutta percha, which acts as a preservative against the influence of water and air. From this he is led to infer that the solution offers a great advantage for fixing pencil, chalk or charcoal drawings in the paper in such a manner that it is impossible to injure them by friction. Sorel's patent *substitute for gutta percha* consists of colophony (brown resin), 2 parts ; pitch or bitumen, 2 parts ; resin oil, 8 parts ; hydrated lime 6 parts ; gutta percha, 12 parts ; water, 3 parts ; pipeclay or other argillaceous earth, 10 parts. Well mix and dissolve together.