Improved Flush-Tank.

In those times when so much well-labeled fear exists in regard to the injurious consequences that may be wreaked by seeping sewer-gasses, undermining the health of the inmates of even the best of houses, we think it our duty to call attention to an improved flush tank, which is the invention of a leading English sanitary engineer, Mr. Rogers Field, whose device is free from the objections made to the common tanks, and besides constitutes an improved element of sewage and house drainage.

The essential feature of this tank is a syphon which comes into action automatically when the vessel to which it is attached is filled to a certain height, and which ceases its action when the vessel is emptied. The rest of the apparatus may very considerably, as well as in its detail, according to the circumstances under which it was to be applied. The attached figure gives a vertical section of one of these arrangements when applied for drainage where it is desirable to have an automatic periodical discharge of the accumulating contents of a receptacle of impure liquids, so as to prevent the mass from standing long and accumulating in the sink. B is a grate over a siphoned trap, which prevents large objects from reaching the trap and, by stopping it up, while the curved trap forms a hydraulical seal, preventing the odor from the receptacle A passing freely out of the same. D D is the syphon pump and it is evident that as soon as the receptacle A has become filled, and the liquid, after first reaching the curved trap, is drawn into the syphon of the pump, the suction is excited and the liquid is sucked through the top of the syphon D D, which then at once commences to operate, and keeps in operation until the liquid has been emptied so far as the syphon could let it go. It has reached the grate G, it has reached the grate G, it has reached the grate, and it is evident that the current is sent into the current, and consequently a much more efficient periodical washing out of a dish by a stream than is the case when a mere overflow empties every small quantity of liquid which is added, while with the receptacle full, all sediments are accumulating there, and at best becomes so filled as to necessitate from time to time a wholesale labor of emptying the same. When the syphon goes down nearer to the bottom, and it is lower than is represented in the drawing, it will empty further down than represented.

This system may be applied to the flushing of drains or any other accumulation of a small constant supply of extraneous water, or by retaining the drainings matter itself and shooting it rapidly out for flushing purposes. It will work with any differences of elevation, from 12 inches to any height that is met with in practice. A syphon capable of discharging a barrel of water in less than a minute may be operated by a steam less than one-10th of a gallon in a minute, and this supply may be accumulated for ten minutes or ten hours, or longer; when once the flow has begun the whole is drawn off with a rush. It requires no watching and no regulating, working with the precision of a properly balanced tumbler-tank, and without its friction and jar. Its large water-supply affords ready passage for any material which it may float or carry with it from the sewer. It is of great service for flushing sewers of even the smallest cross-section, and in close to the smaller pipes, and it gives us a command over the questions of size and inclination, which greatly simplifies and cheapens the work.

In ordinary sewage operations a considerable allowance is habitually made for the accumulation of a small, and a certain inclination is indispensable to give to the sewage such an efficient velocity to carry forward its solid matter. With this flash-tank the size of the pipe may be adjusted very closely to its theoretical discharging capacity. It may be so arranged that nearly the whole system of mains will carry no flow whatever except during the rapid discharge of the tanks. It is even possible to lay very small and very long mains nearly level. In a flat country, with distant and inadequate outlets, where every inch in depth is of the greatest value, making even the shallowest tanks for the accumulation of sewage for flushing impracticable, this tank may be used in connection with the constant supply of water from any source which can be delivered a foot or two above the level of the sewer.

The inventor of this tank has recently been engaged in the sewerage of a town in England where the worst conditions presented themselves. The outlet was dis- tant and of little depth, the mains very long, and the town itself entirely flat. Under the usual system provision would have had to be made for hard cleaning from end to end. The stream passing through the low town was controlled by a mill owner, who would make no terms for supplying the water needed for ordinary flushing, there being no means by which the quantity required could be measured, nor any certainty that a heavy draught would not be made on his pond at some time. They are gauged to a flow of 25 gals. an hour, which is a very small flow, and not more than the unassisted waste of a great proportion of ordinary houses. At the end of twelve hours they will have accumulated about a barrel of water, and this will be shot off in a very few seconds into the upper part of the soil-pipe, washing it clean through to the sewer.

The tank here illustrated and described may be had at Jenning's Sanitary Depot, A. G. Myers, manager, 92 Beacon street, New York.

Superior American Iron.

It is reported by the Engineering and Mining Journal that the Horizon Iron Company is engaged in manufacturing at Ticonderoga, N. Y., by a modification of the Cutler forge process, blooms which are expected to equal in uniformity the Swedish and Norway iron. The peculiarities of the process are chiefly: 1. The ore, instead of being thrown cold upon the forge-fire, descends through a shaft or chamber below into which it has been charged, mixed with charcoal. 2. By this time it has reached the bottom of this chamber, and is raked forward into the fire, it is not only thoroughly heated, but also reduced to metallic sponge. The chamber is heated by the flame-products of the forge-fire, and also by the combustion of carbonic acid, generated from the ore and charcoal, and escaping through ports in the wall, to burn in the surrounding floor. 3. The charging of the very fine ore-dust into another chamber, where it is preheated, and then taken on and conveyed and carried through a hollow journal and a small gas-pipe, into the tuyere, which winds into the forge-fire, and deposits it upon the surface of the hearth. In this way a great loss of fine ore is avoided, and a saving of fuel is effected. There is still another peculiarity in these works, affording the subsequent manipulation of the blooms. The bloom is introduced into a 'Sweet's furnace, and thoroughly heated before shipping. In this way, it is claimed, a more complete reduction of the carbon and other impurities is obtained. Certainly the blooms and billets thus treated exhibited great solidification and uniformity under the hammer.

The capacity of the four fires now in operation is about four tons daily, eight loops being taken out of each during the twenty-four hours. The experiment promises to be a success, and the company is now prepared to erect a second and third, increasing the capacity to at least doubled.

The ore now used is the Bessemer magnesite of the Crown Point Iron Company; but the Horiz- on Company possesses extensive deposits of its own, which it can use if necessary.

Labor in Chicago.

The Chicago Tribune lately sent its reporters to investigate the labor market of that city. The foundries, rolling-mills, and manufactories of the city were visited in turn, and inquiries were made regarding the time of the factories, by the number of hours, the lack of wages, applications for work, and other details. Of twenty establishments, employing 5,000 men, ten had all the men they wanted, and five wanted more, but could not get them, while the remaining five had very few applications for work. One employer stated that in his lines there were not a man in Chicago who was not a man in the city, and the reason was that the competition was very severe. Others believed that some industries that wanted work could get it for laborers' wages——$1 to $1.50 per day. Skilled laborers got from $2 to $8 per day, which gave them proper considering the low cost of the necessities of life. The Tribune is convinced that the clamor of "no work" and "hard times" does not come from men who work and want work, but from those who understand street corners waiting for better times and higher prices, a class of men to be found at all times.