

hot blast with a cool tweer face. This consists of a tank, or barrel, behind the forge, filled with water to a level about that of the tweer. Inside this tank is a drum into which the blast enters, and passing through a pipe reaches the fire through the nozzle. This nozzle is a hollow casting, and is filled with water by means of a pipe from the tank already mentioned. Steam is thus generated in the nozzle, which is conveyed back to the tank by another pipe, and condensed. "The water entering the tweer nozzle is kept in a constant state of circulation by means of the steam created by the heat, and the face of the tweer nozzle is kept cool while a hot blast is passing through it. The tweer box is about fourteen inches long, ten wide, and eight deep, giving an ample chamber for the heating of the air before it reaches the fire."

The same journal says the London *Ironmonger* "speaks in very high terms of the actual working of the device;" and "all concur in the statement that the iron can be heated in one-third the time usually required, with a corresponding saving of fuel, and that the heat is softer and more 'suant,' not burning the surface before the interior is reached."

POISONED SHIRTS AND STOCKINGS.

Both in Britain and on the Continent of Europe, shirts and stockings, dyed with a certain red dye, have been found to produce a pustular eruption on the skin, very difficult to cure. In London a committee was being formed to investigate the cause, but scientific men in both Germany and France, state that it is a dye prepared from carbolic acid, being treated with oxalic and sulphuric acid, and afterwards with ammonia. It is advised that its use be discontinued, as, though it does no internal mischief, it causes great irritation. The *Mechanics' Magazine* suggests: "It may be that a new counter-irritant has been discovered which the doctors will appreciate."

CANADIAN BUTTER AND BACON.

The prices of Canadian butter, compared with that of other countries, as quoted in the London *Grocer* of February 26th, were: Canadian, from 101s. to 122s.; Normandy, from 118s. to 126s.; Brittanys, from 119s. to 126s.; Cork, from 104s. to 148s. Canadian sides of bacon, from 65s. to 66s. per cwt.; English, finest sides, from 74s. to 75s.

DANGEROUS STEAM-BOILERS.

There is a Steam-Boiler Inspection Company in Hartford, Conn., the operations of which—judging by its monthly reports—is likely to have a salutary influence on proprietors and managers of steam-boilers, in the prevention of explosions and injury to life and property. Its published statement for February says:—

"During the month of January, 275 visits of inspection were made, and 536 boilers examined—445 externally, and 166 internally—and in addition, 37 have been tested by hydraulic pressure. In these boilers 403 defects were discovered—51 of them being regarded as particularly dangerous. Furnaces out of shape, 21, and 1 dangerous. Fractures, 60, and 12 dangerous. Burned plates, 23, and 2 dangerous. Blistered plates, 48, and 6 dangerous. Cases of incrustation, 68, and 3 dangerous; the scale was so thick in these three cases as to keep the water entirely from the fire sheets, and they were consequently badly burned and weakened, and hence were positively dangerous. Cases of external corrosion, 53, and 6 dangerous. Where boilers are bricked in, we find this latter difficulty frequently, and if the joints of the steam-pipes, running from and over the boiler, are not tight; the leakage dripping down on to and through the brick covering, silently, but surely makes trouble. Internal grooving, 7. Water gauges out of order, 22. Blow-out apparatus out of order, 3. Safety valves over-loaded, 29, and 6 dangerous. Pressure gauges out of order, 70, and 5 dangerous. Boilers without gauges, 27—all of which we regard as dangerous; and one boiler is reported without either safety valve or gauge!"

"The comments made by our various inspectors are as follow:

"One says: 'The dangerous defects noted in my report were two safety valves—one of them the lever was corroded in the socket so fast that it could not be moved without bending or breaking, and the pin could be got out only by drilling. The other valve had, in addition to its own proper weight of 160 pounds, another weight of 90 pounds on the lever. The pressure of steam required to lift this valve would be 140 pounds to the square inch.'

"These safety valves were each put in good working order, and properly weighted. Another defect was a very bad blister over the fire, which was repaired at once; and three mud drums were found so far gone that the inspector could drive his hammer through in various places; these also were put in good order.

"Another inspector writes that, in his territory, he finds a great many low-water indicators out of order and inoperative. And further, that in some places so much reliance is placed upon them that the gauge cocks are seldom used; and in many instances, have become entirely useless from corrosion.

"Now, we most emphatically advise all parties