

desiring to prejudge the importance of such applications, it was none the less interesting to remark how new needs may sometimes direct the researches of inventors toward old machines that were about condemned in the early history of the steam engine, but which, thanks to the progress in tools and to the application of science to industry, are to-day becoming practical.

Cold Winters.

The following statistics of the good old winters are curious: In 401, the Black Sea was entirely frozen over. In 768, not only the Black Sea, but the Straits of the Dardanelles, were frozen over; the snow in some places rose fifty feet high. In 822, the great rivers of Europe—the Danube, the Elbe, etc.—were so hard frozen as to bear heavy wagons for a month. In 860, the Adriatic was frozen. In 991, everything was frozen; the crops totally failed, and famine and pestilence closed the year. In 1067, the most of the travelers in Germany were frozen to death on the roads. In 1133, the Po was frozen from Cremona to the sea; the wine casks were burst, and even the trees split by the action of the frost with immense noise. In 1236, the Danube was frozen to the bottom, and remained long in that state. In 1316, the crops wholly failed in Germany; wheat, which some years before sold in England at six shillings the quarter, rose to two pounds. In 1339, the crops failed in Scotland, and such a famine ensued that the poor were reduced to feed on grass, and many perished miserably in the fields. The successive winters of 1432-33-34 were uncommonly severe. It once snowed forty days without interruption. In 1468, the wine distributed to the soldiers in Flanders was cut with hatchets. In 1684, the winter was excessively cold. Most of the hollies were killed. Coaches drove along the Thames, the ice of which was eleven inches thick. In 1709 occurred the cold winter. The frosts penetrated three yards into the ground. In 1716, booths were erected and fairs held on the Thames. In 1744 and 1745 the strongest ale in England, exposed to the air, was covered in less than fifteen minutes with ice an eighth of an inch thick. In 1809, and again in 1812, the winters were remarkably cold. In 1814 there was a fair on the frozen Thames.

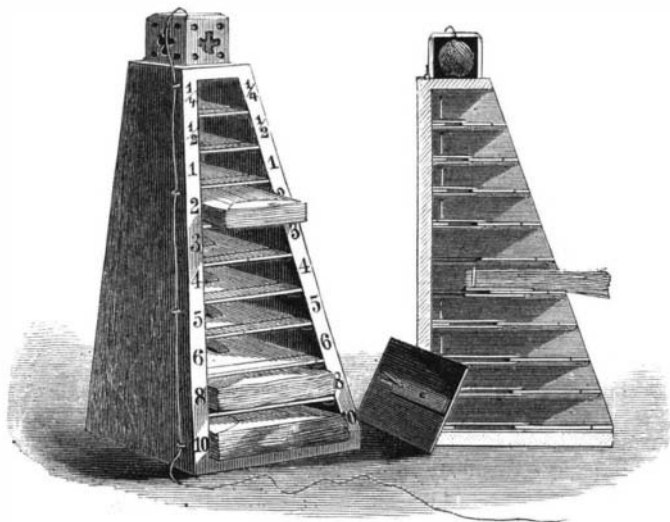
PAPER-BAG HOLDER.

We give herewith perspective and sectional views of a very convenient holder for paper bags, recently patented by Mr. Richard M. Shaffer, of Cranberry, W. Va.

This device is for receiving and holding paper bags in assorted sizes in convenient position for easy access and removal. It is designed for the use of merchants and others who use paper bags for wrapping up merchandise.

The principal feature of the invention is the means for preventing the withdrawal of the bag adjacent to the one being pulled out whenever the bags tend to stick together. The bag holder is provided with a twine holder, making a convenient and compact device that can be placed almost anywhere on the counter without being in the way.

The back wall of the outer case is perpendicular, and the side walls and front incline inwardly at the top. The case contains a series of horizontal shelves, which constantly diminish in size from the bottom to the top, forming compartments for the bags. The compartments are marked with



SHAFFER'S PAPER-BAG HOLDER.

the size of bags which they are designed to contain. The shelves are made detachable, and rest upon cleats or guides on the side walls, and each shelf is provided, near its back end, with an upwardly-pointing pin, while the front end rests against a strip which forms a stop to hold the shelf in and prevent it from being pulled out when the bags are withdrawn. The pins pierce the edges of the bags near their mouths and hold the bags in place, so that only the bag which is taken in the fingers is removed, the others being held by the pin. As each bag is pulled out it is torn loose from the pin. To accommodate bags of different lengths the pins are mounted upon a sliding base, which moves in a slot in the back portion of each shelf.

Further information in regard to this useful invention may be obtained by addressing the inventor as above.

IMPROVEMENT IN RAZORS.

The engraving shows a razor of new design, recently patented by Mr. W. H. De Pew, of New York city. The invention consists specially in the shape or configuration of the shank or handle of the blade, which is made in the form of a reverse curve or in the form of an elongated S. The curve or bend next to the heel of the blade extends above the back of the blade, so as to increase the depth of the thumb rest. The reverse curve extends to the end of the shank of the handle. This is a marked improvement on the old-fashioned razor, making it a really scientific instrument, much better adapted to its use than any of its predecessors.

The tang is of unusual length, and is attached to a perfectly



DE PEW'S IMPROVED RAZOR.

formed blade of new design. It is pivoted with the handle in such manner as to give the whole a perfect balance in the hand, and gives a complete control of the razor and a firm and steady grasp. This renders shaving easy without slip or fatigue. Further information in regard to this useful invention may be obtained by addressing Mr. W. H. De Pew, P. O. Box 3018, New York city.

Professor Esmarch on the Case of President Garfield.

Professor Esmarch delivered a lecture on the treatment of President Garfield's wound before the Physiological Society of Kiel, in February last. This lecture he has now printed and circulated, and it is impossible that the views of a surgeon so accomplished and so worthy of expressing an opinion on such a case should not be canvassed. The facts of the case are first of all clearly and fairly stated from Dr. Bliss's own published accounts of the progress of the case and of the *post mortem* examination. Professor Esmarch's conclusions are: (1) that the wound was not in itself absolutely fatal; (2) that the bullet was not the cause of the septic suppurative in the wound which led to the fatal result; (3) that the cause of the septic suppurative was introduced from

without, and that as contributing directly or indirectly to this were the following errors in the treatment: the repeated probing and examination of the wound with instruments and fingers not rendered aseptic, the failure to dress the wound aseptically, the syringing out of the wound with fluids not sufficiently antiseptic, and the failure to give a complete vent to the "bagging" pus; (4) there was no true pyæmia, but only metastatic inflammation of the parotid gland; (5) the cause of death was hemorrhage, moderate in amount, but occurring in one whose strength was undermined by septic fever, decubitus, bronchial catarrh, and hypostatic pneumonia; (6) although the splenic artery may have been injured primarily by the bullet, or by a splinter of bone, this would not have led to the formation of a false aneurism, except for the establishment of putrid suppurative.

In conclusion, Professor Esmarch refers to the popular superstition that the bullet is the cause of all danger in a gunshot wound, and that to extract the bullet should be the chief aim of the surgeon. He asserts that most of the secondary dangers arise rather from the fingers of those who explore the wound, and that the American surgeons committed the error of doing too much rather than of doing too little, as they have been freely accused of at home. Finally, he surmises that if no search had been made for the ball, and the wound had been dressed aseptically, the unfortunate patient would have been alive now.

Valuable as is Professor Esmarch's opinion on such a point, we regret that this lecture has been published, at any rate so soon. It would not have lost in value by being kept back until the acrimonious discussions of the conduct of the

attending surgeons had died out on the other side of the Atlantic. It is proverbially easy to be wise after the event, and it is an ungracious task to criticise adversely the conduct of men who, under very trying circumstances, were suddenly called upon to act in a grave emergency. We are willing to admit that mistakes may have been committed, but it is a case in which the golden rule is eminently applicable: "Let him that is without sin first cast a stone."—*Lancet*.

Dangers of Steam Street Pipes.

An illustration of the possible dangers of the system of public steam supply which is now rapidly coming into vogue, is furnished by a recent accident at Lynn, Mass. In that town steam has been supplied for some time to customers by means of pipes laid in the streets, and on a recent Monday morning one of the street mains blew up with a loud explosion, hurling stones and gravel in every direction to a distance of forty or fifty feet. Nearly every window was broken in the neighboring buildings, and some of these received other injuries, while a woman who happened to be passing by was seriously hurt. The accident is explained by the daily papers, in their usual satisfactory manner, as having been due "to accumulation of water in the pipes." It seems that this is the third explosion of the same kind which has taken place in Lynn within two weeks. After the first one an engineer was discharged on the ground that his carelessness in "allowing water to stand in the pipes" had caused the accident, but he appears to deny his guilt, and says that "the system of pipe-laying is not correct."

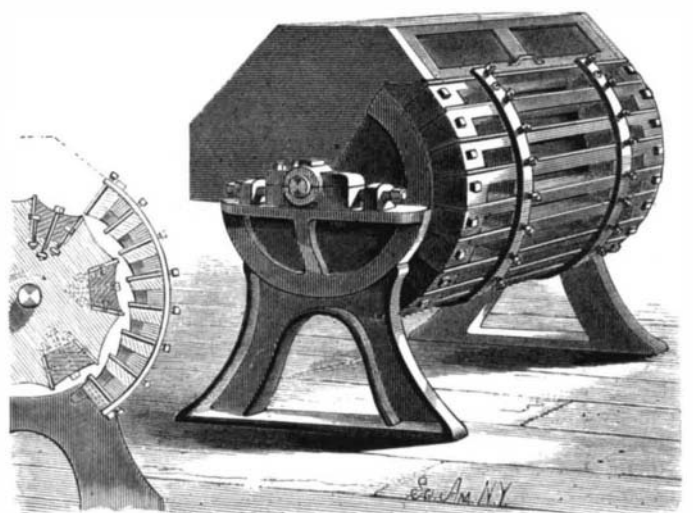
If we were not afraid, says the *American Architect*, of hurting the feelings of the stockholders of the Citizens' Steam Company, we should say that both these explanations were simply ridiculous, and that the obvious cause of the explosion was the inability of the pipes to resist the strain upon them. Whose fault this may have been we do not care to inquire, but we may suggest that it would not be very difficult to ascertain in case of need. Meanwhile, we trust that the engineers of the new steam heating companies in other cities are laying pipes which they are sure will not burst out of resentment at being improperly laid, or because of water being allowed to stand in them. An explosion in Broadway, for instance, would be a serious matter, even if it amounted only to the hurling of a few hundred paving stones over the passers-by, and through the plate glass show windows which line the street.

NEW COTTON SEED HULLER.

We give an engraving of a new cotton seed huller recently patented by Mr. Hugh S. Walsh, of Argenta, Kansas. This machine is provided with adjustable knives in the concave, and with a series of knives placed in the cylinder which revolves in close proximity to the concave, as shown in the sectional view.

The revolving cylinder is fluted longitudinally, and every other concave or flute is a removable segment held in place by screws. To compensate for the wear of the knives on the cylinder, screws are provided in the bottoms of the sockets in which they are placed, so that by removing one of the segments between the knives the latter may set out.

At the top of the machine there is a hopper for receiving the cotton seed. When the machine is revolved in the proper direction, the seeds being carried by the concave flutes of



WALSH'S MACHINE FOR HULLING COTTON SEEDS.

the cylinder into the space between the cylinder and the enclosing case, the knives rapidly remove the hulls.

This machine is easily operated and very readily adjusted. This machine has a great capacity, and does its work thoroughly. The daily increasing use to which cotton seed and cotton seed oil are applied give value to a practical machine of this kind.

A Floating Telephone Station.

Experiments have been made at Havre, France, to test a system of telephony between the Roads and the city. They have been so successful that it has been proposed to form a pontoon structure at a distance from the land, on board of which public telephones should be placed for use by the shipping in communicating with the land.