

HEELS FOR BOOTS AND SHOES.

The object of this invention is to provide a comparatively inexpensive heel, so made and fitted with an adjustable metallic wear plate that uneven wear of the heel or sole of the boot will be prevented, and the durability of the foot wear will be materially increased. Fitted in a suitable recess in the body of the heel is an upwardly projecting flange, formed on an annular metal plate having a downwardly projecting flange, which at its outer face stands about flush with the round back portion of the heel, and also fits against the rear concavity of the front lift. Within the heel plate is fitted a leather lift, through which nails or screws are driven, to hold both the lift and plate securely to the heel, while the plate may be rotated by applying a knife or hook to any one of a series of notches made in its outer flange. In this flange is formed a series of spurs or teeth, shown in the right hand view, which may be brought to the outer side portion of the heel by turning the plate, to prevent the slipping of the boot on icy pavements. As the flange is exposed clear around the back of the heel, quick wear is prevented; and as one part wears a little, the plate may be turned, more or less, to present a new edge surface of its flange. Hence, the heel will always be kept comparatively true and flat, to prevent running over of the foot of the wearer at the counter of the sole, and insure an even wear of the sole, and thereby increase its durability. The method of securing the plate prevents rattling, and deadens very largely the sharp click, incident to contact with pavements, of metallic wear plates of this character.

This invention has been patented by Mr. John P. Gray, Simcoe, Ontario, Canada, who will furnish all further information.

NOTEBOOK HOLDER AND INDICATOR.

This simple device is for supporting a notebook or copy in position for convenient reading by a type writer or type setter, and for indicating the successive lines of copy, to facilitate correct reproduction. Across the bottom of the bed or platen is a flange to support the book or copy, the upper end of which is held by clips. At the opposite ends of the left hand side the bed has fixed lugs, in which is journaled a screw carrying a ratchet wheel at its lower end. The ratchet is engaged by a rack bar supported in suitable bearings fixed to the bed, and connected at one end to a spring which acts normally to draw the bar toward the right-hand edge of the bed, the teeth of the bar then slipping over those of the ratchet; but when the bar is moved in the opposite direction, by the operator grasping its knob or handle, the ratchet wheel and its screw are turned.

By means of a collar held by a set screw on the bar, it is possible to regulate the extent of movement of the rod, for turning the screw more or less to shift the line indicator a greater or less distance, as required by the space between the lines of copy. Held in the outer ends of the lugs, parallel with the screw, is a rod, on which the head piece of the indicator is fitted to slide and turn. The base of the head is formed with half threads, held in engagement with the screw by a properly arranged spring. The indicator may be re-

**MERRILL'S NOTEBOOK HOLDER AND INDICATOR.**

leased from the screw to allow it to be quickly shifted to proper position over the copy. Held to the center of the back of the bed is a hollow arm, in which slides a rod connected to an extension arm by a tongue and groove joint, allowing the bed to be swung in a horizontal plane to any required angle, thereby enabling the operator to use the copy to the best advantage. The distance of the copy from the type writer may be adjusted by shifting the rod in or out, and by turning the rod the copy may be held at any desired inclination. At the outer end of the curved extension arm is

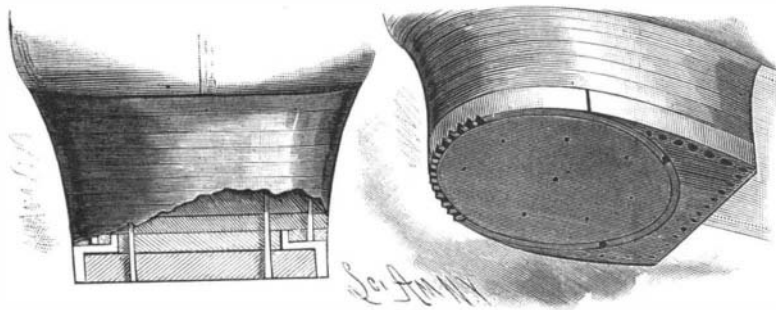
a clamp for holding the copy holder to the type writer. The hollow arm is so held to the bed as to permit of the edgewise adjustment of the latter.

After the copy holder has been adjusted to suit the convenience of the operator, the indicator is moved to the upper line or place of beginning the work. When the first line has been written, the rack rod is moved to turn the ratchet wheel and screw, which will draw the indicator downward to the next line of copy; and when the bar is released, the spring will draw it back to its first position, ready for another movement. When the page of copy has been written, the indicator is raised to admit another sheet, and then moved to the top again.

This invention has been patented by Mr. A. H. Merrill, of Sanford, Fla.

Edison may still Hear Beecher's Voice.

In the house of Thomas A. Edison, at Llewellyn Park,

**GRAY'S HEELS FOR BOOTS AND SHOES.**

is a remarkable memento of Beecher. The inventor's phonograph for impressing on a soft metal sheet the utterances of the human voice, and then emitting it again by the turning of a crank, has never been put to any very valuable use, and Edison has only gained from it a few thousand dollars in royalties from exhibitors. But he utilized it to make a collection of famous voices. Since he became famous, his visitors have included hundreds of celebrities. Instead of asking them for their autographs or photographs, he has, in two or three hundred instances, requested them to speak a few sentences into a phonograph. He has kept the plates in a cabinet, and occasionally he runs some of them through the machine, which sends out the words exactly as uttered. Edison is probably the only man who can revive the silenced voice of the great preacher. —*Philadelphia Times*.

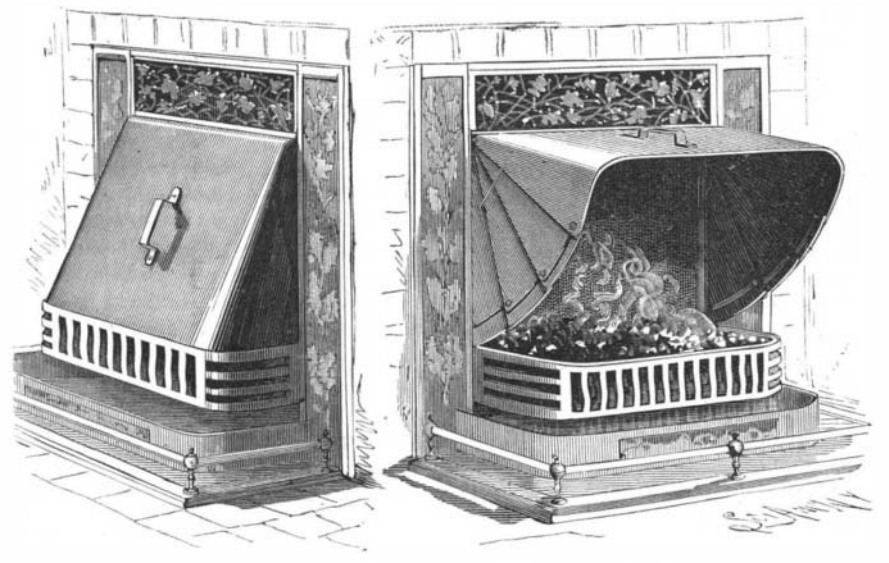
The instrument above referred to, the speaking phonograph, was fully described in the SCIENTIFIC AMERICAN SUPPLEMENT, No. 115, as long ago as March 16, 1878. It was subsequently illustrated by working drawings, half size of the machine, in SUPPLEMENT, No. 133. Persons who may like to see engravings of this curious appliance, which can reproduce the voice of the dead, can do so by referring to the volume of 1878, or have the two numbers mailed to them from this office for 20 cents.

IMPROVED GRATE-FIRE BLOWER.

The accompanying engraving represents a very simple and effective device that may be used as an ordinary blower to be applied to grate fires, or it may be adapted to serve as a deflector for carrying the dust up the chimney during the raking of the fire, and especially while taking up the ashes from under the grate. The blower is composed of four triangular sections, pivoted together at their acute angles, to permit of their being folded one upon the other. When folded, the apparatus presents the same appearance, and may be used in precisely the same way, as the common blower, as shown in the left hand view. But when the parts are extended, as represented in the right hand view, the blower forms a hood or shield, beneath which there is ample room to manipulate the fire, and which so increases the draught that all the dust will be drawn up the chimney, thereby relieving the apartment of the layer of dirt that usually accompanies every attention paid to a grate fire. The blower is held in an extended position by two rods hinged one upon each side of the outer section, and the free ends of which enter holes in the inner section.

This invention has been patented by Mr. Chas. D. Thompson, of No. 240 Fifth Avenue, New York City.

A NEW copper mine has been discovered near Coquimbo, in Chili.

**THOMPSON'S IMPROVED GRATE-FIRE BLOWER.**

usually less safe than those below, as the narrower joists give little room for the boxing of the hearth. It also adds that grates should be examined carefully to determine whether the back of the flue is simply a four inch wall, which is always dangerous at the back of a grate in a frame house. This can be determined by measuring the distance the breast extends out from the wall; sometimes the breast runs through flush with face of wall in next room; if so, calculate accordingly. Proper attention paid to flues and all connections therewith would prevent many fires.

Metallization of Organic Matter.

However cleverly the artist may exercise his powers of imitation, nature can always excel him, and hence it is that especial interest attaches to all processes for preserving natural objects for artistic and decorative purposes. Among the most recent efforts in this direction may be mentioned the improvements in the preparation of organic matter for metallization by galvanic deposit recently introduced by La Societe anonyme de Metallisation artistique des Animaux, Vegetaux, ou autre corps, of Paris, described in the *Industrial Review*. This process consists in the employment of an albuminous liquid, with which the different substances in question are treated to prepare them for metallization, and may be thus obtained: A quantity of snails or slugs are first washed in ordinary water to free them from all earthy or calcareous matter; they are then placed in a vessel containing distilled water, and are left here sufficient time to give off slowly their albuminous matter.

The albumen thus obtained is now filtered and boiled for about an hour. After the boiling is added a quantity of distilled water sufficient to replace that lost by the boiling, and about 3 per cent of nitrate of silver. This liquid is then placed in bottles hermetically closed and kept in the dark. It will thus keep without any alteration. To use this liquid for the preparation of the objects, about 30 grammes of it is dissolved in about 100 grammes of distilled water. In this solution the objects are submerged for a few moments; they are then placed in a bath consisting of distilled water with about 20 per cent of nitrate of silver in solution,

and afterward submitted to the action of hydro-sulphuric gas to reduce the nitrate of silver adhering to the albumen-covered surface of the object.

Thus treated, all organic matter is rendered fit to receive a galvanic deposit; and the galvanic products obtained by this process are far superior in fineness and neatness to those obtained by any other known process. Even the finest and most minute fibers and veins, the smallest unevenness of surfaces, and hairs scarcely visible to the naked eye are clearly discernible, and come out with striking neatness, the metallic deposit being of perfectly uniform thickness and adherence.

Professional Fatigue.

Medical and other professional men often break down from their inability to keep a regular time for meals. An eminent doctor says:

"Being often out for many hours, and becoming too exhausted to digest a full meal when at length able to get it, I conceived a plan which answered admirably well, and which other doctors have gladly adopted. I provided myself with a small bottle of lime water, which I add to a glass of milk when passing a dairy shop; or I put a small flask of the mixture in my pocket. A water biscuit with this will keep a man harmless on a long fast, and enable him to digest a meal when he can obtain it."

Fire and Water, formerly *The Fireman's Journal*, of this city, suggests that grates in second stories are