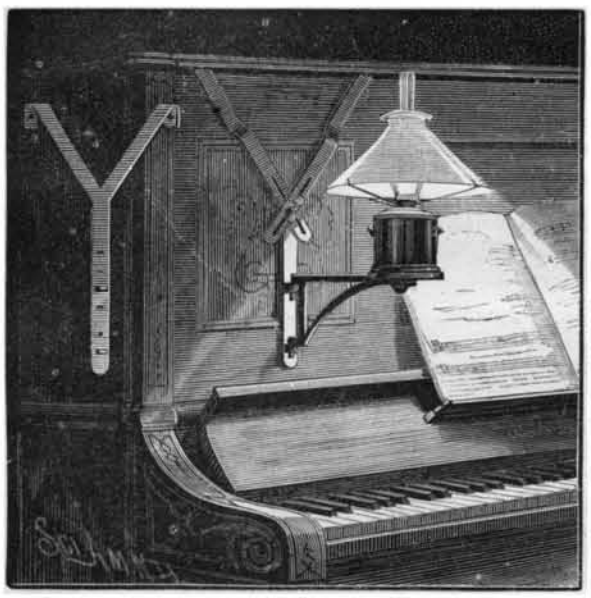
LAMP BRACKET.

The bar forming the body of the bracket is provided with apertured ears to receive the pintles of the lamp-supporting bracket. Two bars, each formed with a hook at the upper end to pass over the upper edge of the front board of an upright piano, are slotted at their lower ends for the passage of a bolt, by which they are held to the main bar. The hooked ends are separated to form a wide bearing, and each hook has a thumb-screw, by means of which it is clamped securely on the back of the piano front. The free end of the bracket holds a lamp in the usual way, and the height of the



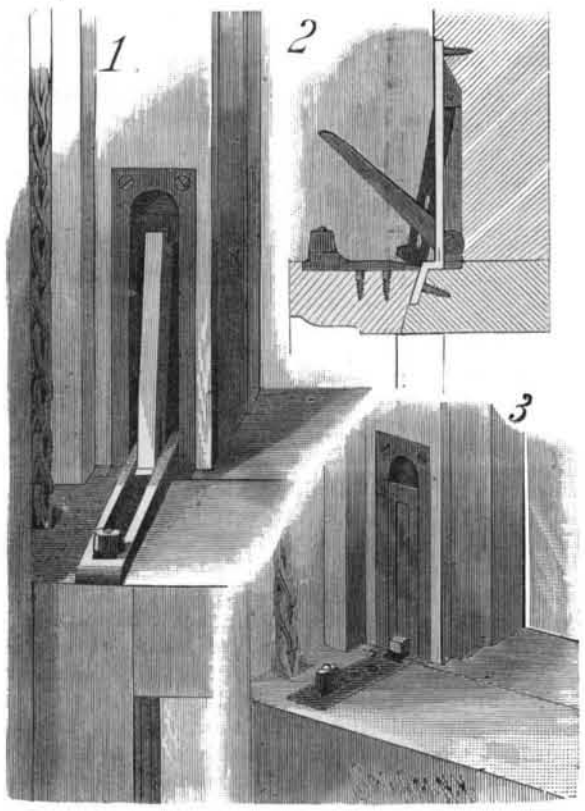
BARNEY'S LAMP BRACKET.

lamp may be adjusted by shifting the position of the bolt in the slots in the bars; it may be still further adjusted by separating the free ends of the bars or bringing them together. The lamp may be supported at any desired position along the piano front, and the rattling of the bracket is prevented by the clamping screws and by a soft button upon the inner surface of the lower end of the vertical bar. The bars may be made in one piece, as shown in the left of the engraving.

This invention has been patented by Mr. James W. Barney, of Junction City, Kan.

IMPROVED SASH FASTENER.

The engraving shows a fastener which may be used either singly, and occupy a central position when the window has a mullion through the center, or in duplicate on either side of it, when the window is a wide one and without a mullion. Secured within the stile or the mullion of the upper sash is a metal frame having a vertical slot and a recess in its face terminating in a finger notch. Pivoted by its upper end in the slot is a locking bar of such length, as when swung slightly outward, its lower end will bear on a plate extending across the top rail of the lower sash, as shown in the vertical section, Fig. 2. This very securely locks both



CARY'S IMPROVED SASH FASTENER.

the upper and lower sash, which can only be released by forcing the bar back into the frame piece. The lower end of a finger piece is pivoted within the frame in such manner as to admit of its being shut closely within the recess, as represented in Fig. 3. This lever has a longitudinal slot in it, to allow the locking bar to work through it. The lever and bar are connected by a pin passing through a slot in the bar. To lock the window, Fig. 1, the lever is pressed downward, its free end passing over a nose formed on the end of the plate on the lower sash, and thereby binding the sashes together laterally. This movement of the lever brings the locking bar forward, and locks the window. Pushing the lever back into its recess releases the sashes. A turn button on the nose prevents the lever from being raised. This fastener presents but little or no opportunity to tamper with it from the outside, and, unlike the ordinary fastener, it cannot be pushed one side by a knife blade inserted between the sashes.

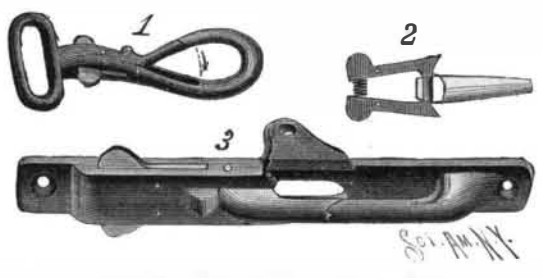
This invention has been patented by Mr. Alanson Cary, of 234 W. 29th St., New York city.

IMPROVED SNAP HOOK.

This snap hook has a rigid tongue, held in place by spring-acted latches, and which does not depend upon the spring to retain it in a closed position. The shank of the hook, Fig. 1, has a chamber, in which is pivoted a tongue beveled at its free end to fit the beveled end of the hook. The inner end of the tongue is widened and formed with transverse slots for receiving the ends of pivoted latches, which are pressed into engagement with the tongue by a spiral spring, as shown in Fig. 2. The inner ends of the latches extend beyond the sides of the shank, so that these ends may be pressed together to release the tongue.

When the tongue is open, the ends of the latches rest upon the sides of the tongue, with the spring compressed, so that the latches are in condition to drop into the slots as the tongue is moved into a closed position.

The form of snap hook shown in Fig. 3 is carried by an angle plate, which fits over the thill, upon either the inside or outside, for receiving the trace loops. In this case the shank of the hook is the plate, and the hook and tongue when closed are axially in line with each other, forming a straight bar, upon which the trace hook is carried. The snap hook is like that above described.



STAHL'S IMPROVED SNAP HOOK.

This invention has been patented by Mr. S. S. Stahl, of Connellsville, Pa.

Treatment of Erysipelas with Creosote.

Dr. H. J. Fox, writing in the *St. Louis Med. Jour.*, May, 1886, claims that creosote may be regarded almost as a specific in the treatment of erysipelas. His manner of application is to keep the parts constantly covered with cloths wet with a solution of 6 to 20 drops to the ounce of water. In ulcers or wounds it may be used in the form of a poultice by stirring ground elm into the solution, the strength to be regulated according to the virulence of the attack. Ordinarily, 10 drops to the ounce is strong enough for the cutaneous form of the disease, and in dressings for wounds or recent injuries. If the inflammation threatens to spread rapidly, it should be increased to 20 or more drops to the ounce of water.

The antiseptic properties of this remedy render it of additional value, as it will certainly destroy the tendency to unhealthy suppuration, and thus prevent septicæmia.

In the treatment of hundreds of cases of erysipelas, according to Dr. Fox, but a single fatal case has occurred, and that one in an old and depraved system. In the less violent attacks no other remedy was used, but where constitutional treatment was indicated, the usual appropriate tonics were prescribed.

Fire from Steam Pipes.

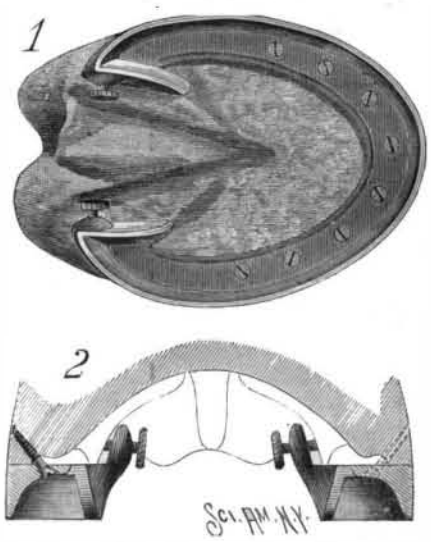
Glaser's Annalen says: After wood has remained a long time in contact with steam, hot water, or hot air pipes, the surface becomes carbonized. During the warm season, the charcoal absorbs moisture. When again heated, the moisture is driven off, leaving a vacuum, into which the fresh air current circulating around the pipe rapidly penetrates, and imparts its oxygen to the charcoal, causing a gradual heating and eventually combustion.

The rusting of the pipes contributes also to this result, inasmuch as the rust formed during the hot season may be reduced by the heat of the pipes to a condition in which it will absorb oxygen to the point of red heat.

The same article also notices that a building was set on fire by pitch distilled out of a pine plank placed nearly three inches above a steam pipe, which dropped on the pipe and took fire.

A HORSESHOE TO FIT THE NATURAL FOOT OF A HORSE.

In the invention herewith illustrated it will be seen, from the cross sectional view shown in Fig. 2, that the shoe has a flat top part, which fits upon the lower edge of the wall or shell of the hoof from its heel portions clear around the front of the shoe, while the lower edge is sharp all around. At the heel the side parts or extremities are bent forward abruptly to form lips, tapering downward to form an edge on a level with the sharp lower edge of the shoe, and thus forming heel calks, their broad upper faces giving support to the bars or braces of the animal's hoof, which are not to be cut away, but preserved to give proper support to the heel of the foot, according to Nature's provision. At the angles of the opposite heel parts are lugs with



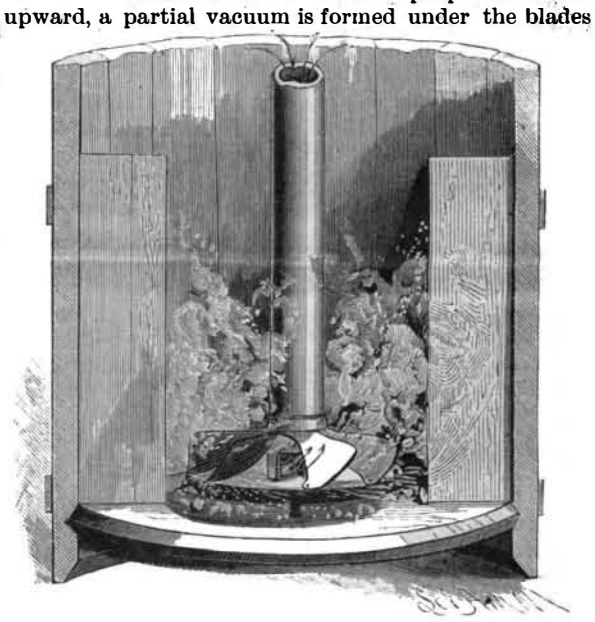
MONROE'S IMPROVED HORSESHOE.

threaded screws, whose ends may be forced against the inner sides of the outer walls of the hoof to prevent or cure contraction of the hoof. The shoe is attached to the hoof by screws passed diagonally outward and upward into the wall or shell of the hoof, as shown in Fig. 2, from which it will be seen that the shoe can be readily put on by an amateur after being properly fitted by an expert, it being the intention to make the shoe of cast malleable iron or cast steel, and fit it to the foot when cold, the shoes to be cast from patterns in graduated [redacted] from impressions taken from horse's feet that are [redacted] formal condition. This shoe is designed to readily clear itself of mud and snow, etc., and to give an excellent foothold to the horse on either pavements, soil, or turf.

This invention has been patented by Mr. Edwin A. Monroe, of No. 370 Broadway, Saratoga Springs, N. Y.

IMPROVED CHURN.

The churn herewith illustrated is the invention of Mr. C. A. Madsen, of Gunnison, Utah. The screw is formed of sheet metal or other suitable material, and is provided with blades, as clearly shown. Both the screw and hollow shaft to which it is attached are secured to a disk. Between the screw and disk is a chamber having outlets between the blades, and in the hollow shaft are openings, thus forming communication between the shaft and chamber. From the center of the under surface of the disk projects a pivot having a bearing in the bottom of the churn. The shaft is rotated by suitable means. To retard the rotation of the cream, there are two vertical ribs extending from the bottom of the churn, about two-thirds way of the side. When the dasher is so turned as to propel the cream upward, a partial vacuum is formed under the blades



MADSEN'S IMPROVED CHURN.

in the chamber, into which air is drawn through the shaft. This air mingles with the cream, and in its upward passage assists in agitating the cream, thereby hastening the separation of the butter. In actual practice, this churn has been found to produce a great saving both in time and labor.

A Great Steel Forging.

The steel forging for the fighting tower of the Italian armorclad Lepanto is 10 feet in outside diameter, 7 feet 11 inches inside diameter, 12½ inches thick, and 4 feet 9 inches high, and is intended to protect the captain of the ship in battle.

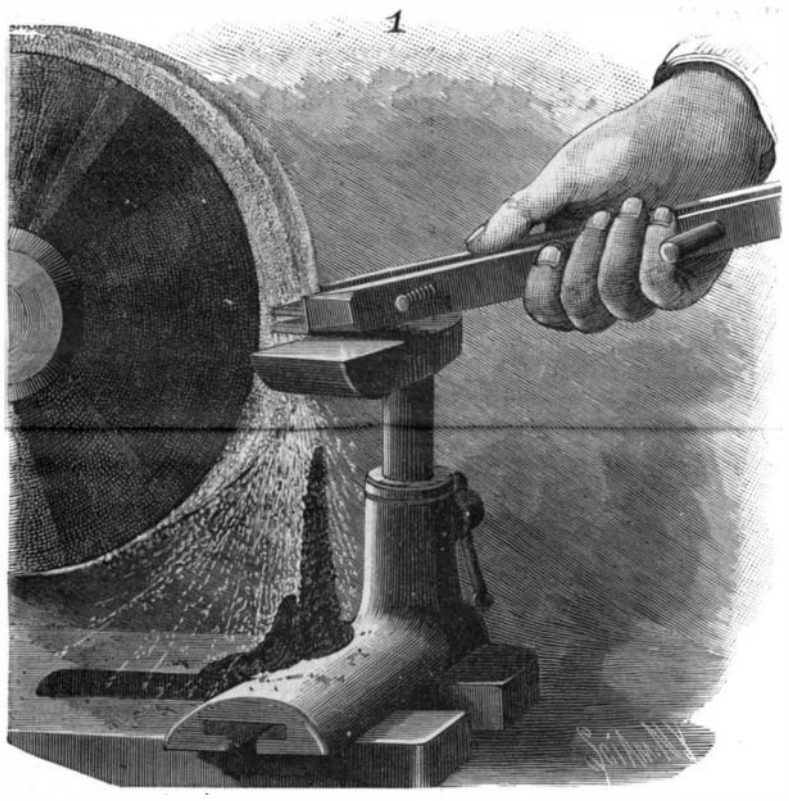
The weight of this huge block of steel is 30 tons, and the rough ingot from which it was forged was 65 tons. It was produced by the firm of Schneider & Cie., of Le Creusot, France. The ingot was worked to a diameter of about 6½ feet, then bored, and then worked by forging on a mandrel to the dimensions given above. It is the first fighting tower that has ever been made in one single piece.

CURIOUS ACCRETION OF EMERY WHEEL DUST.

The particles of material removed from solid bodies by the abrasive action of dry emery wheels are always more or less heated. Dust from metals is often fused, and sometimes dissipated altogether. Fused globules of metal are frequently found in emery wheel dust, but the stalagmitic formation consisting of particles welded together, as shown in our engraving, is not common.

These curious growths are formed almost hourly by a wheel 14 inches in diameter, revolving at the rate of 900 revolutions per minute, employed in shaping some of the steel parts of a sewing machine. The position of the stalagmite relative to the work and the wheel is shown in Fig. 1. Under the microscope the particles do not appear to have been entirely fused, but only sufficiently softened to cause them to stick together.

The mass of the aggregation is quite solid and strong. Except in color, it more nearly resembles a spire of coral than anything else.



CURIOUS STALAGMITIC FORMATION OF EMERY WHEEL DUST.

NEW ELECTRIC ORGAN MOVEMENT.

The introduction of the pneumatic movement for organs was one of the great steps in the development of this instrument. By it the strain of directly opening the pipe valves was removed from the fingers of the performer, and a light acting manual, as easily played upon as a piano keyboard, was placed at his command. In the illustrations accompanying this article we show another improvement, that is as distinct a step in advance as the one just mentioned. By it electricity is called into play, and the pneumatic movement is controlled by the electric current.

In Fig. 1 a section of the mechanism is shown. The details of the pneumatic movement will be at once recognized by those familiar with it. It is controlled by the electric attachment, that forms the subject of this article. Within a wind chest a hollow cored electro-magnet, indicated by B, is mounted in a vertical position. A cylindrical armature, A, plays up and down below it. The armature and core are made of soft iron. The armature fits loosely in a cylindrical chamber directly below the magnet. Its top and bottom are covered with disks of leather.

Below the armature a nozzle communicates with the open air. Thus, when the armature rises, the opening in the magnet core is closed. When it falls, it closes the opening of the nozzle, C. The wind chest is in constant communication with the organ bellows, so that the air within it is maintained at a pressure above that of the atmosphere. Within it is a bellows that is held open normally by a spring. It will be seen that when the armature has fallen the bellows is filled with air from the wind chest. The pressure is carried down through the hollow core and space surrounding the armature and through the passage, W. The bellows, under the circumstances, remains distended and closes the valve, K, and keeps the valve, L, open. This leaves the outer bellows free to remain open or shut. The tracker attached to the arm at M, acted on by the pipe valve, pulls it shut, and no air is admitted to the pipe.

When it is desired to sound the pipe a current of electricity is passed through the wire. This draws up the armature, and closes the opening in the magnetic core, and at the same time opens the nozzle, C. The bellows in the wind chest, having its interior put in communication with the outer air, at once closes under the effect of the air pressure within the box. This opens the valve, K, and closes the valve, L, so that the outer bellows is forced open by the pressure from the wind chest. The tracker is caused thereby to open the pipe valve, and the pipe begins to speak. In Figs. 2, 3, and 4 different modifications of the magnets and armatures are shown.

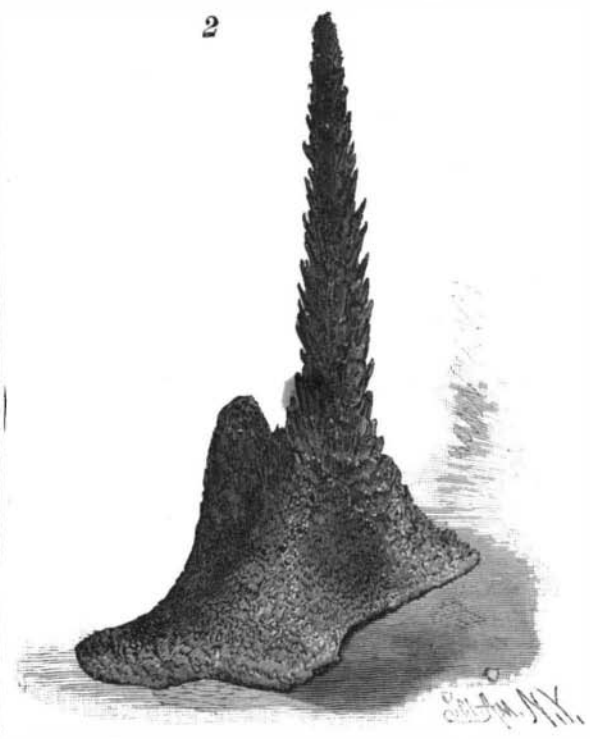
All this is done so quickly that a sensitive pipe can be made to speak six hundred times a minute.

These are the pipe movements, and one such magnet and attachments are supplied for each key in the manual and for each pedal key. For the draw stops a somewhat different apparatus is provided.

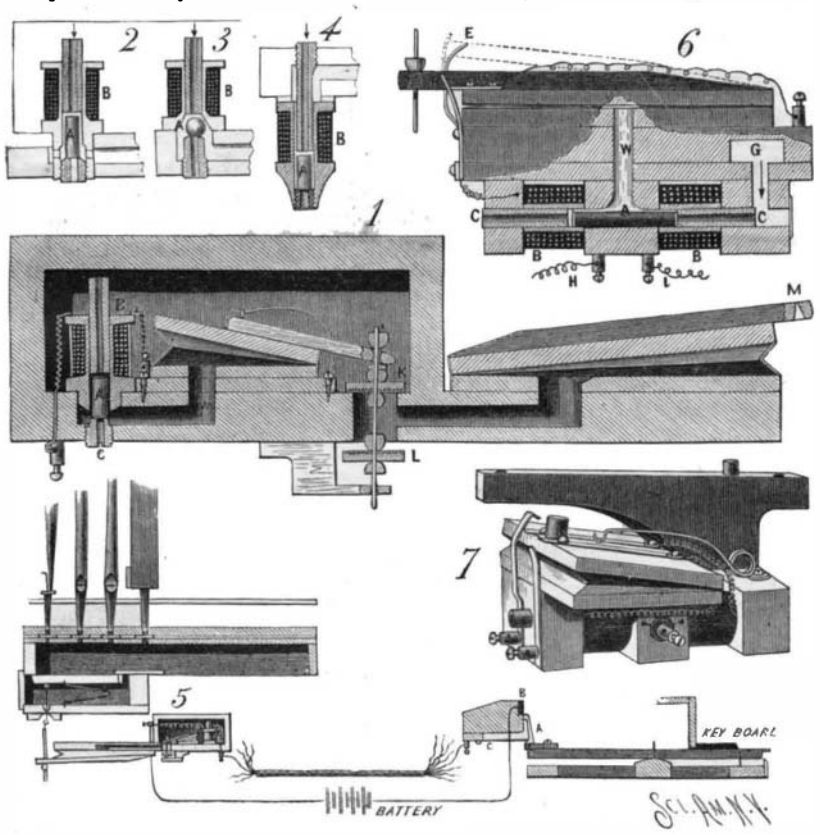
It is clear that what has been described would answer for them, but with the attendant disadvantage that electricity would have to be supplied as long as the stop was kept open. In Figs. 6 and 7 a section and elevation of the draw stop mechanism are given, by which arrangement this difficulty is avoided completely. Referring to the section, two magnets, BB, wound in the same way are shown arranged horizontally, and supplied with a horizontal cylindrical armature, which is permanently magnetized. It is attracted to one or the other of the magnets, according to the one the current is caused to pass through. Air pressure from the organ bellows comes through the passage, G. When the armature, A, is attracted toward the left, as a current passes through the left hand magnet, this air pressure raises the bellows and opens the stop. As the bellows rises, the spring, F, breaks contact with the piece, D. This cuts off the left hand magnet from the line, but the polarization or magnetization of the armature causes it to retain its place. Hence the bellows stays open. But in rising by means of the spring, E, and another contact piece corresponding to it, it throws the right hand magnet into its own circuit. Then, when another pulse of electricity is sent by the opposite movement of the stop handle, it passes through the other magnet, and draws the armature to the right. The bellows under the influence of the spring shown in Fig. 7 collapses, closes the draw stop, and at the same time cuts off the current of electricity. A separate wire is provided for each magnet going from the draw stop handle, but a single return wire acts for both. The horizontal position of the magnets in conjunction with the polarized armature are the distinguishing features of this mechanism. The bellows acts by a tracker directly on the stop valve.

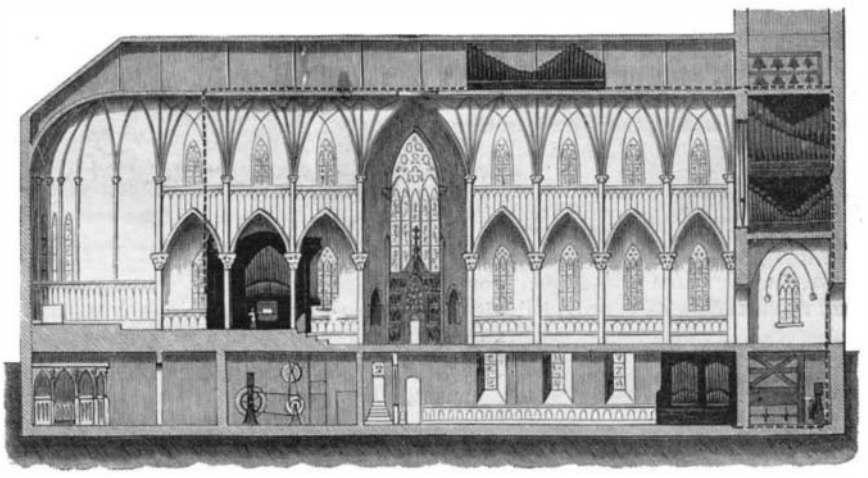
One of these movements is supplied for each stop, and thus the whole range is controlled by electricity. Very little current is required, as the draw stops are worked by a current of a second's duration. The manual consumes but little.

To give some idea of the connection between manual and soundboard, the section shown in Fig. 5 has been given. To the right is a key in its normal position. When depressed by the finger, it makes an electrical connection between the oscillating piece, A, and the contact piece, B. All the magnets connect at one terminal with a single wire, running from them to the contact piece, B, and including in its course the battery. Each of the other terminals of the magnets has its own wire which runs to the manual, each wire being connected by the binding screw and spring, C, to its own key. Hence, when a key is depressed it actuates the magnet connected with it, and makes the corresponding pipe give its note. On the left of the draw-



STALAGMITIC ACCRETION OF EMERY WHEEL DUST.





WACKER'S IMPROVEMENTS IN ELECTRIC ORGANS AS APPLIED IN THE CATHEDRAL, GARDEN CITY.