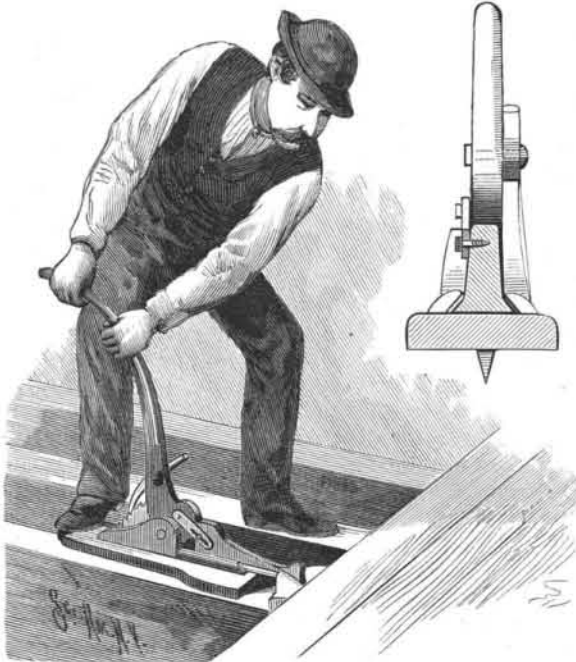


panying illustration, and forms the subject of a patent issued to Mr. Thomas Sheehan, of No. 374 East Main Street, Louisville, Ky. The relative position of the burners beneath the shade is indicated in the drawing, it being considered that the best effects will be obtained in ordinary practice when the two ignited jets overlap about a quarter of an inch, this being effected by turning the gas on or off until the ignited jets are of the re-

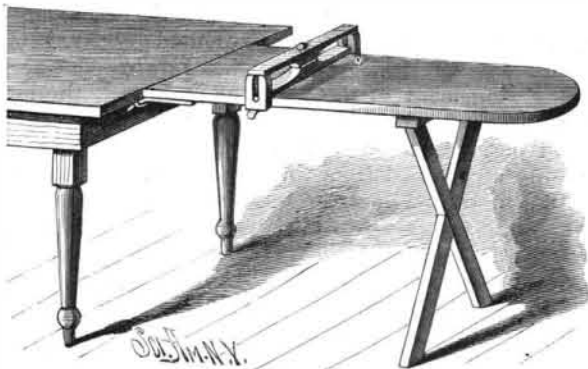


BAYER'S FLOOR CRAMP.

quired size. These burners are designed to prevent the production of any smoke or the giving off of any unconsumed particles, thereby yielding more light for a given amount of gas consumed.

#### AN IMPROVED IRONING BOARD.

A simple form of ironing board, having a readily adjustable clamp, whereby shirts or other articles may be firmly held while being ironed, is shown in the accompanying illustration. The board has a cleat or cross bar on its under side, near one end, to which are hinged crossed legs, while at the other end are two bent prongs or bars that may be readily inserted in apertures formed on the under side of one end of a table of



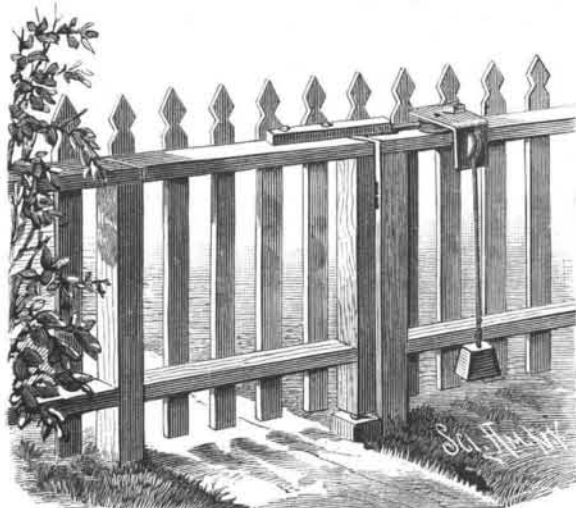
McCORMICK'S IRONING BOARD.

any ordinary form, in connection with which the ironing board may be set up. The clamp consists of slotted end blocks and upper and lower spring bars, extensions of which ride in the slots of the end blocks, turn buttons being secured to the lower faces of the end blocks. When the clamp is placed upon the article to be ironed, the turn buttons are moved so that one end of each button will extend beneath the table, and the article will be firmly held.

This invention has been patented by Mr. Robert E. McCormick, of New London, Huron County, Ohio.

#### AN IMPROVED DEVICE FOR CLOSING GATES.

The accompanying illustration represents an exceedingly simple and readily applicable device for closing



RIGG'S DEVICE FOR CLOSING GATES.

gates, which has been patented by Mr. James W. Rigg, of Mount Carmel, Ill. Upon the inner or hinged end of the top of the gate frame is fastened a bar, which projects beyond the gate, over the top horizontal beam of the fence. At the rear of this bar an angular frame is secured upon the top beam of the fence, and in this frame are journaled two pulleys, one in a horizontal and the other in a vertical position, the latter projecting through a slot in the frame. A cord attached to the end of the bar upon the gate passes around the horizontal pulley and then over the vertical pulley, through the slot in the frame, a weight being attached to the other end of the cord, near the ground. It will be seen that, when the gate is opened, the bar projecting beyond its hinged end operates as a lever, raising the weight, and when the gate is not held open, the weight will automatically close it.

#### A FLOOR CRAMP FOR CARPENTERS, JOINERS, ETC.

The manner of operating a simple, handy, and inexpensive implement for tightly closing up the joints of flooring boards and deck planks, prior to nailing or otherwise securing them, is shown in the accompanying illustration, the small figure being a vertical cross section of the tool. The device consists of an elongated bed plate having backwardly projecting spurs on its bottom, and an upright hand lever carrying a pawl at the base of its arm. This lever is made with a cam head embraced by and turning between a toothed rack and a supporting flange rising from the bed plate, a push bar sliding in parallel bearings on the bed plate, made with a cross head and connected by a slotted link to the cam of the lever. The tool is very powerful, and is designed to cramp from eight to ten boards at a time if desired, the pawl engaging the rack teeth to hold the boards tightly in position when the hand is removed from the operating lever. The device may also be used for cramping the wainscoting of a room, for clamping doors together, and for a variety of similar work.

This invention has been patented by Mr. Alexander S. Bayer, and further information relative thereto may be obtained of Mr. Charles F. Mott, No. 90 Argyle Street, Halifax, N. S., Canada.

#### AN IMPROVED SURGICAL INSTRUMENT HOLDER.

An improved device, whereby various implements, such as scissors, hooks, saws, lancets, or various forms of blades, may be readily and quickly inserted alternately in one handle, and held firmly therein, is shown in the accompanying illustration. It has been recently patented by Mr. Leonhard Schwab, of No. 102 Graham Avenue, Brooklyn, E. D., N. Y. The handle has a vertically slotted head, with a recess on one side of the base of the slot, in which a thumb wheel is held upon a threaded pin projecting through the handle from side to side. In one edge of the handle is a concave surface whereby the milled periphery of the thumb wheel may be readily engaged by the operator, and projecting through the handle above the thumb wheel is a rivet. The shank of the instrument, as shown in the detail views, is made flat, of a width equal to that of the handle; it has a central longitudinal slot, and aligning semicircular recesses on each side. When the shank of the instrument is inserted in the handle, the slot in the shank passes over the rivet and the threaded pin, the shank coming in contact with and resting upon the bottom of the handle slot, when a slight turn of the thumb wheel fixes the tool firmly in the handle. With this construction one handle will answer for a great many tools.

#### AN IMPROVED METHOD OF RAISING BREAD, ETC.

An invention which has for its object the protecting of dough, etc., from currents of air while being prepared for baking, keeping its surface in a moist condition, and retaining the heat of fermentation, is illustrated herewith. It forms the subject of a patent recently issued to Mr. Joseph D. Cox, of Rochester, N. Y. One of the figures shows a convenient form of vessel to serve both purposes of mixing and raising, and the other is a more desirable form of chamber for the second raising, when the dough is made into loaves, and placed in pans or tins, according to the course ordinarily followed by housekeepers.

In both cases the down-projecting rim of the cover sits into an annular channel or trough, filled with water or other liquid, preventing the inward passage of air, but permitting the escape through the water of gases and vapors generated by the fermentation within. The length of time the dough is left in the two vessels varies according to the temperature, but the periods are about the same as ordinarily occupied, the mixing pan, for instance, being employed to keep the dough in over night, and the other vessel, placed in a warm situation, for the second raising during an hour or two in the morning. By thus keeping the surface of the dough moist, while facilitating the escape of the gases of fermentation, it is sought to prevent the forming of a tough, hard upper crust, while making the bread more palatable and digestible.

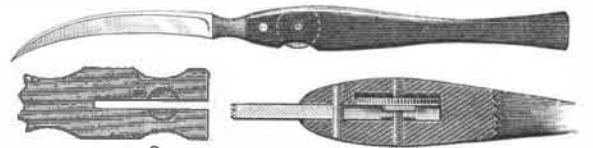
#### AN IMPROVED SCAFFOLD BRACKET.

A bracket designed to be cheap, durable and efficient, and that is adapted to serve a variety of uses, is shown in the accompanying illustration. It forms the subject of a patent issued to Mr. William H. Higgins, of Forest City, Pa. The parts are so made that the platform-supporting arms of the bracket may be adjusted to a horizontal plane, and the bracket may be attached to



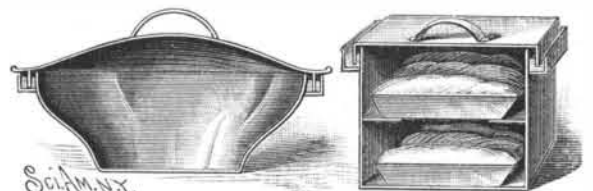
HIGGINS' SCAFFOLD BRACKET.

a roof or to the upper or under side of a ladder. In connection with a ladder the bracket may be used as an entirety, or may be separated into three distinct parts, which, with the aid of double hooks, may each be secured to the ladder. The side bars used in this bracket are formed with peculiar shaped, flattened, hooked ends, the ends of the hooks extending outward at an angle from the bars, and having spurs extending



SCHWAB'S SURGICAL BLADE AND HANDLE.

outward from the hooks, the bars having elongated slots in connection with these hooked ends, in which are pivotally mounted S hooks, the latter carrying adjustable leaves, with sleeves rigidly fixed thereto to slide on the hooks. The illustration shows only a few of the many uses to which this bracket may be applied, the small figure indicating the form of a slotted extension for a foot for the bottom of the ladder, to secure

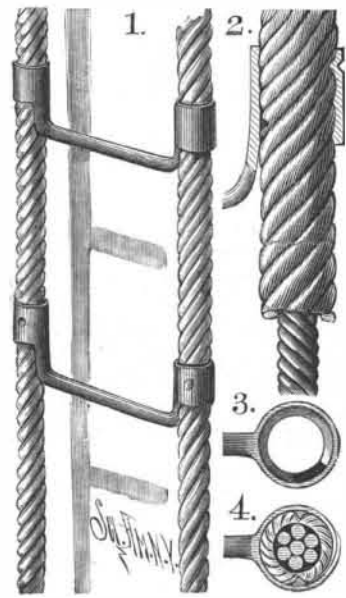


COX'S BREAD RAISER.

a firm and even foothold for the ladder upon uneven ground.

#### AN IMPROVED ROPE LADDER.

A rope ladder with peculiarly constructed rungs, and ropes of metallic cable covered with fibrous strands, making an article especially adapted for fire escapes, is shown in the accompanying illustration, and has been patented by Mr. Harlow French, of No. 340 West Fortieth Street, New York City. The rungs



FRENCH'S ROPE LADDER.

are each made of a single piece of metal, having at each end an ear adapted to inclose the rope. These ears may be formed like a split ring, having on their inner surface a spiral projection which embeds itself in the fibrous strands, as shown in Figs. 2 and 4. The ears may also be made in the shape of a fork, with projections or lugs which embed themselves in the fibrous strands when the prongs are closed around the rope. The form of the rung equalizes the strain on both ropes when carrying a weight, and their shape prevents slipping of the foot of the person ascending or descending the ladder, while permitting a firm grip with the hand. Such a rope ladder is very strong and still quite flexible, while the burning or singeing of the fibrous covering of the cables will not destroy its utility.

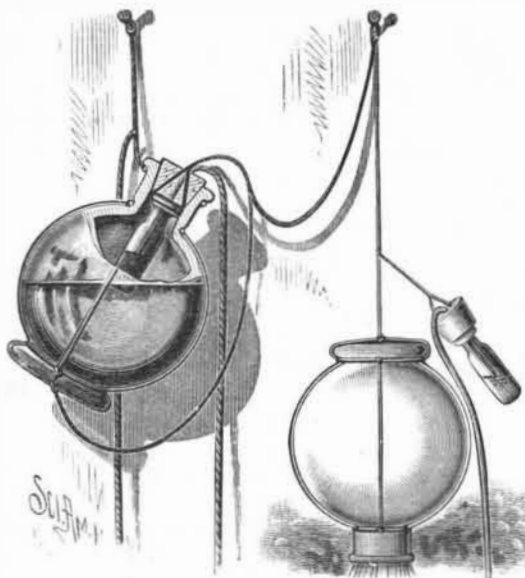
#### Carbonate of Lime for Cancer.

Nearly twenty years ago Dr. Peter Hood published a communication on the value of carbonate of lime in the form of calcined oyster shells as a means of arresting the growth of cancerous tumors. In the *Lancet* for May 7, 1887, he publishes a second communication on the same subject, in which he states that although his opportunities for employing it in suitable cases have not been large, the results which he has attained through its use have been extremely satisfactory. He refers to several cases in which a persevering use of the calcined shell powder arrested the growth and pain in tumors undoubtedly of a cancerous character. Dr. Hood urges the persistent and fair trial of this remedy in cases of cancer where the nature of the affection is early recognized. It can do no possible harm, it need not interfere with other remedies for the relief of pain, its action can be referred to an intelligible and probable hypothesis, and it has been of utility in a sufficient number of cases for warranting us in reposing some confidence in its use.

An advantage of the treatment is that it may be readily prepared at home by baking oyster shells in an oven, and then scraping off the calcined white lining of the concave shell. The substance thus obtained is to be reduced to a powder, and as much as will lie on a silver quarter taken once or twice a day in a little warm water or tea.—*Therapeutic Gazette*.

#### AN IMPROVED FIRE GRENADE.

A simple device for extinguishing fires at an early stage, by means of a grenade containing an extinguishing liquid, is illustrated herewith, and has been patented by Mr. Silas H. Van Houten, of Patriot, Ind. To the stopper is attached one end of a wire, the opposite end of which is secured to a fixed support, just over the spot where there may be supposed to exist special danger of a fire starting. Another wire is fastened to this one, just outside the stopper, and also attached to the flanged bottom of the bottle, which is hung up by a readily combustible cord from a nail or other support. A fuse extends through the stopper and into a small bottle within the larger one, the small bottle containing powder. A fire starting near the grenade thus suspended would quickly burn off the light cord by which it is held up, when the dropping of the grenade would cause its cork to be withdrawn and the grenade



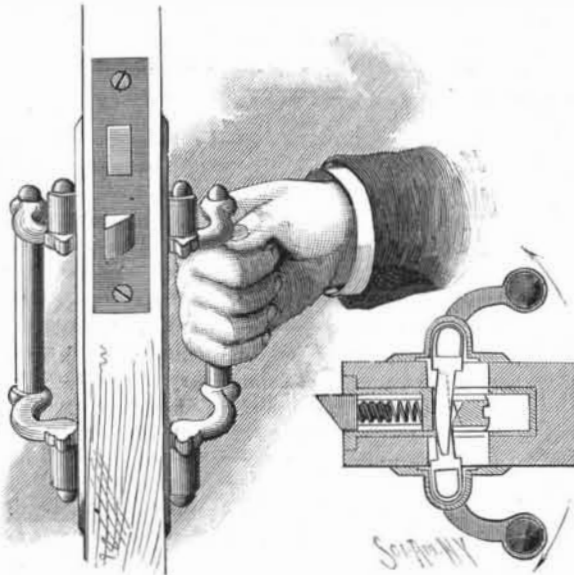
VAN HOUTEN'S FIRE GRENADE.

to be overturned, in the position shown at the right in the picture, thus discharging its contents. Should the stopper stick in the neck of the bottle, or the small supporting cord not be burned off, then the ignited fuse would explode the powder in the small interior bottle, and thus scatter the contents of the grenade. An additional cord is arranged by which the grenade may be detached from its support and inverted, if desired.

SOME queer things are seen in the Veterinary Hospital of Philadelphia. Among others are a pig's easy chair, a padded cell for a lunatic horse, a Turkish bath, and a swinging harness in which a horse may live or die without bearing any weight on his legs.

#### AN IMPROVED DOOR LATCH AND HANDLE.

A door latch and handle, in which the direction of the pull required to throw the latch is the same as that needed to open the door, so that the latch is almost automatic in its working, while being cheap and simple in construction, and not liable to get out of order, is shown in the accompanying illustration, one view being of a portion of the door with the latch applied and the other a sectional plan on the line of the bolt. The invention has been patented by Mr. Thomas Bason, of Englewood, Ill. The bolt is held normally extended beyond the lock piece by a spring, and the rear walls of the central recess of the bolt are divided into sections that are inversely inclined. The handle is carried by two arms, which have projections fitting within boxes



BASON'S DOOR LATCH.

at either end, the projection of the upper arm being fitted to a lever arm working within the lock case, and these lever arms from opposite sides of the door being made to overlap just in advance of the inclined faces of the rear walls of the bolt recess. With this construction each handle may be operated irrespective of the other, and in closing the door the latch bolt works independently of the handle. Upon the projection from the lower arm of the handle there is formed a downwardly extending spur, fitting within an apertured plate fixed to a spiral spring mounted within the box. When the handles have been moved in the direction of the arrows, forcing the latch bolt back within the casing, these springs are put under tension, so that when the handles are released they will be returned to their normal position. The only strain upon the latch bolt spring is that necessary to keep the bolt projected forward, consequently this spring may be light and flexible, so that the latch will work easily. The latch may be easily fitted for any thickness of door by varying the length of the lever arm, and can be used on either right or left hand doors without alteration.

#### Amyl Varnish.

This compound ether has recently come into use for manufacturing purposes without attracting any scientific attention. Its value depends on the excellent solvent power for pyroxylin which it possesses. Good soluble gun cotton will dissolve in it until a jelly is formed and the vessel may be inverted. On this account it has become valuable to the manufacturer of celluloid and to the manufacturer of certain kinds of lacquer for coating brass and copper. These two industries are consuming enormous quantities of this solvent, and the probabilities are that the use of it has not fairly commenced.

The employment of acetate of amyl, or pear oil, in the manufacture of artificial fruit essences has long been known, and for this purpose it has commanded a high price, so high indeed as to exclude the possibility of its general use as a solvent; but for the above mentioned industries it can be made commercially pure to answer the purpose as well as the highly purified and more agreeably smelling compound. Two patents have been taken out in England during the past three years bearing on this subject—one on account of its property of dissolving gun cotton, the other on a method of manufacture. In the former the inventors claimed the solution to be valuable for the making of varnishes, and that "when 200 parts nitro-cellulose are mixed with 600 parts acetate of amyl, a mass of doughy consistency is obtained, which can be used for any purpose for which celluloid is used. With the addition of castor oil, china clay, and a small proportion of certain essential oils, a compound suitable for the production of artificial leather may be produced."

Several methods of manufacture have been proposed, but the one most common in the United States consists in heating in a lead or glass retort a mixture of acetate of sodium or calcium, sulphuric acid, and fusel oil.

The ether distills at 137° C., has a specific gravity at 15° of 0.876, and is almost absolutely insoluble in water. Its solvent action is not confined to gun cotton, for it

readily dissolves tannin, fixed and volatile oils, resins, and camphors, and may become a valuable solvent in pharmacy, in addition to the several uses it already possesses.—*Amer. Jour. Pharmacy*.

#### Engraving with Mercury and its Salts.

It is known that when mercury is deposited on a metal, fatty lithographic ink will not "take" upon it when an inking roller is passed over it, and that the black adheres to the untouched parts of the metal. If a well polished and clean plate of zinc is taken, and a design is traced thereon with mercury, the design will appear in brilliant white upon the gray background of the zinc. After tracing the design, an intaglio plate can be obtained by plunging the plate without being coated with varnish into a bath containing 100 parts of water and two parts at least of nitric acid. The action of the acid is very rapid, and for a long time only attacks the parts touched by the mercury. When deep enough, it can be used for lithographic work. If, instead of nitric, hydrochloric acid is used, the contrary effect takes place. The unaffected zinc is strongly attacked, and the traces of the mercury give a relief plate which can be used for ordinary typographical work.

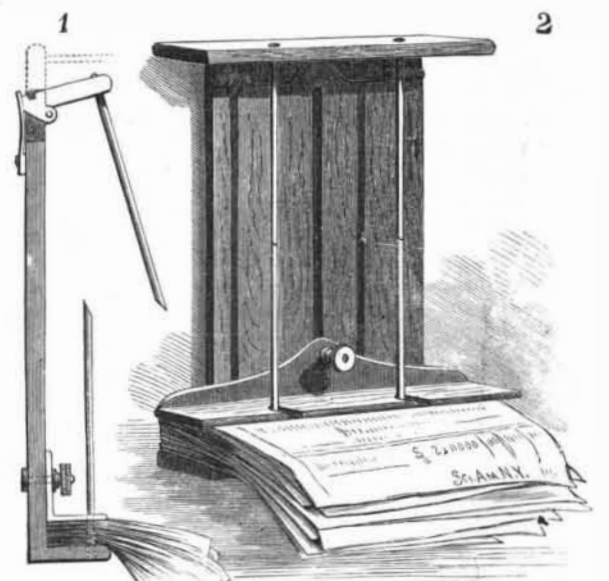
If the operator does not wish to draw upon zinc, the design can be traced upon paper with a salt of mercury. The sheet of paper being then applied for two hours to a plate of zinc, the drawing is sharply reproduced in white lines of amalgam, on the gray surface of the metal, just as if it had been traced directly.

The same result is obtained if the design is traced upon paper with a sticky substance (ink containing gum or sugar), and if it is dusted over with a mercury salt in fine powder. On dusting off the surplus and applying the sheet containing the design to a plate of metal, the same result is obtained. The same result is obtained if a newly printed proof is used, and is dusted with mercury salt while the ink is still wet and sticky. All the lines thus reproduced are chemically engraved, as has been described above. The same results are obtained by dusting with mercury salts a photographic carbon print containing a gummy substance, and the effect of half tints is even secured.

Binioidide of mercury is the salt to use.—*Memorial Industrielle*.

#### AN IMPROVED LETTER AND BILL FILE.

A ready reference file for retaining letters, bills, papers, and other documents, whereby they will be securely held, and from which all or any of them may be readily removed, is shown in the accompanying illustration, and has been patented by Mr. Wm. Hanford King, of Little Silver, New Jersey. The general arrangement of the back and foot piece, the latter with its fixed vertical file wires, and of the hinged head piece, also carrying file wires or pins, will be readily understood from the illustration, Fig. 1 indicating in dotted lines the position of the head piece when it is swung up to place papers on the file. The retainer, which holds the papers snugly together on the file wires, is fitted loosely with a threaded bolt and set screw, whereby it may be readily adjusted any-



KING'S LETTER AND BILL FILE.

where along the back piece. Bills and papers filed in this way are likewise readily removed in order for binding, the binding cord being passed through the holes made by the file wires, and then tied at the back. This may be more readily effected by having the top pins hollow, or by having eyes near their points.

THE celebrated Lily of the Valley perfume is said to be made as follows:

Extract of jasmine.....	100.0
Extract of ylang-ylang.....	15.0
Cardamom seeds.....	5.0
Oil of orris flower.....	10 drops

The cardamom odor, if predominating, must be neutralized with jasmine.