

IMPROVED COUNTERSINK FOR BORING TOOLS.

Mr. Richard J. Welles, of Kenosha, Wis., has recently patented an improvement in countersinks to boring tools, which is illustrated in our engravings. Fig. 1 is a side elevation of a boring bit with the countersink attachment. Fig. 2 is a side elevation of the attachment without the bit; and Fig. 3 is an end elevation. A and B represent the two pieces forming the countersink, said pieces being clamped on the bit shank, C, by screws, D, and having dowels, E, to aid the

Fig. 1

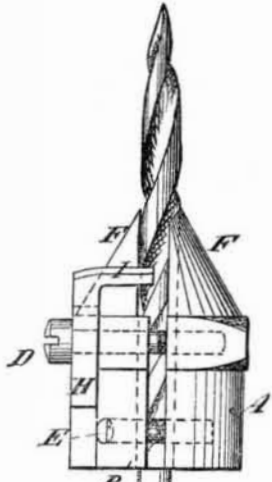
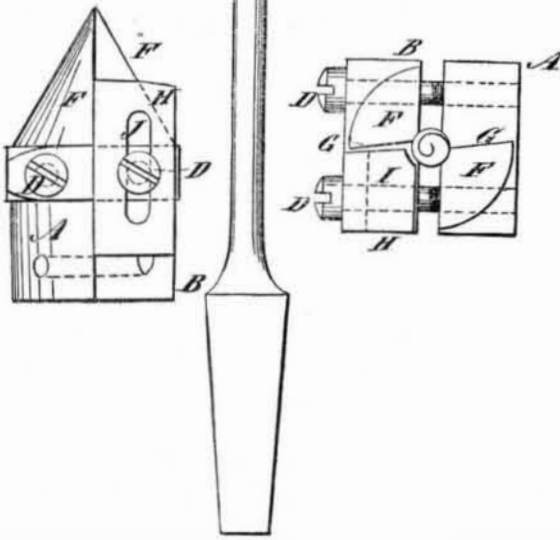


Fig. 2

Fig. 3

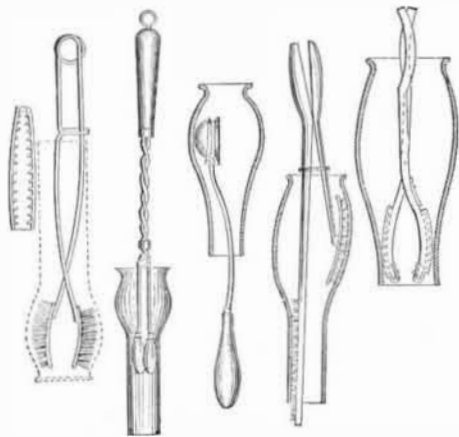


screws in keeping them in position. F represents the cutting points or bits of the countersink. They are in form about a quarter section of a cone, and arranged with their cutting edges, G, parallel to the clamping screws, D, so that they work alike, whether clamped to a large or small shank, C; and ample clearance is provided between the heel of one and the cutting edge of the other. H is the gage or stop for regulating the depth of the countersink. It is a small bar, with a foot, I, at the lower end, clamped to one of the pieces of the countersink by one of the clamp screws by which the two pieces are clamped to the bit, the screw passing through a slot, J, in the bar, to allow the latter to be shifted up and down, according to the required depth of the countersink. The pieces, A and B, are rounded at the upper end, to render the attachment capable of turning on the surface of the stuff without catching and binding on any irregularities thereof.

HOUSEHOLD DEVICES, GATES, AND HINGES.

Continuing our extracts from Knight's "Mechanical Dictionary,"* we select, this week, a number of interesting illustrations of devices pertaining to the dwelling, and also a

Fig. 1.



Lamp-Chimney Cleaners.

series of engravings showing a variety of forms of gates and hinges.

In Fig. 1 are represented several kinds of

LAMP CHIMNEY CLEANERS.

Beginning on the left, the first is simply a pair of brushes

*Published in numbers by Messrs. Hurd & Houghton, New York city.

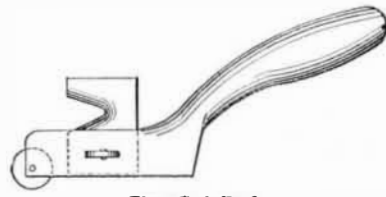
attached to the end of bent wire springs, which hold the brushes out against the interior of the chimney. The second device is essentially the same, a handle being added and pads substituted for brushes. The third is a single pad without springs. The fourth has brushes of different shapes adapted to the straight and curved portions of the chimney. The brushes in this case are pressed outward against the chimney by bringing the handles of the implement together. In the fifth device, curved pads replace the brushes, and there is a modification in the shape of the handles.

In order to facilitate the somewhat difficult operation of cutting oil cloth, a

FLOOR CLOTH KNIFE,

represented in Fig. 2, has been devised. In this the blade is

Fig. 2.



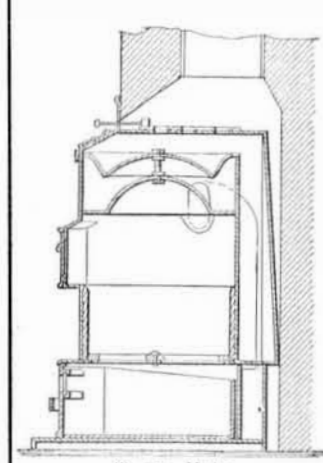
Floor-Cloth Knife.

notched and secured vertically in the lower portion of the handle; the latter is held above the floor by a caster. The edge of the cloth being placed in the notch, and its adjacent portion held, the knife, when pushed forward, makes a neat division, much more easily and accurately than it is possible to perform the same by hand, knife, or shears. The

FIREPLACE HEATER

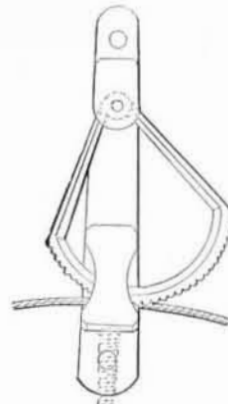
shown in Fig. 3, is set within the fireplace, and serves to warm the room, the pipes discharging into the chimney. The

Fig. 3.



Fireplace-Heater.

Fig. 4.



Clothes-Line Holder.

kind here especially represented is known as the Latrobe, and is base-burning. The pipe passes up the brick flue to heat the air which circulates between pipe and flue to the rooms above, into which it escapes through suitable registers.

Fig. 4 is a simple form of

CLOTHES LINE HOLDER,

designed to secure the line without necessitating the tying of the latter about its supports. It consists of a hook cast upon the main plate, and in a lug of the latter a serrated swinging segment is pivoted. The line is jammed between the serrated portion of the segment and the hook. The

GATES,

shown in Figs. 5 and 6, are as follows: a is a gate with adjustable hinges operating on rings on the post, the fastening consisting of a movable latch and staple. b shows a mode of setting up the gate, when the outer end sags, by means of the diagonal strut. c is another form of setting up the outer end, by means of a tie slat. d is a gate, whose top bar is pivoted on the post, the whole device being counterweighted by a box of stone on the extended bar. e slides longitudinally, its slats traversing on rollers. f is also a sliding gate, which has rollers to keep it level, whether open or shut. g is a gate which slides half its length and then rotates on a bar at its mid-length. h is a gate of pivoted bars, on the principle of the lazy tongs. i is a gate having a set of pivoted slats which assume a vertical position when the counterweighted top slat is allowed to oscillate. j is a suspended gate which swings upward, broadside, in a vertical plane. k is a gate suspended from pulleys and counterweighted. l and m are gates operated by equestrians or persons in vehicles by means of ropes.

The ancient Egyptian

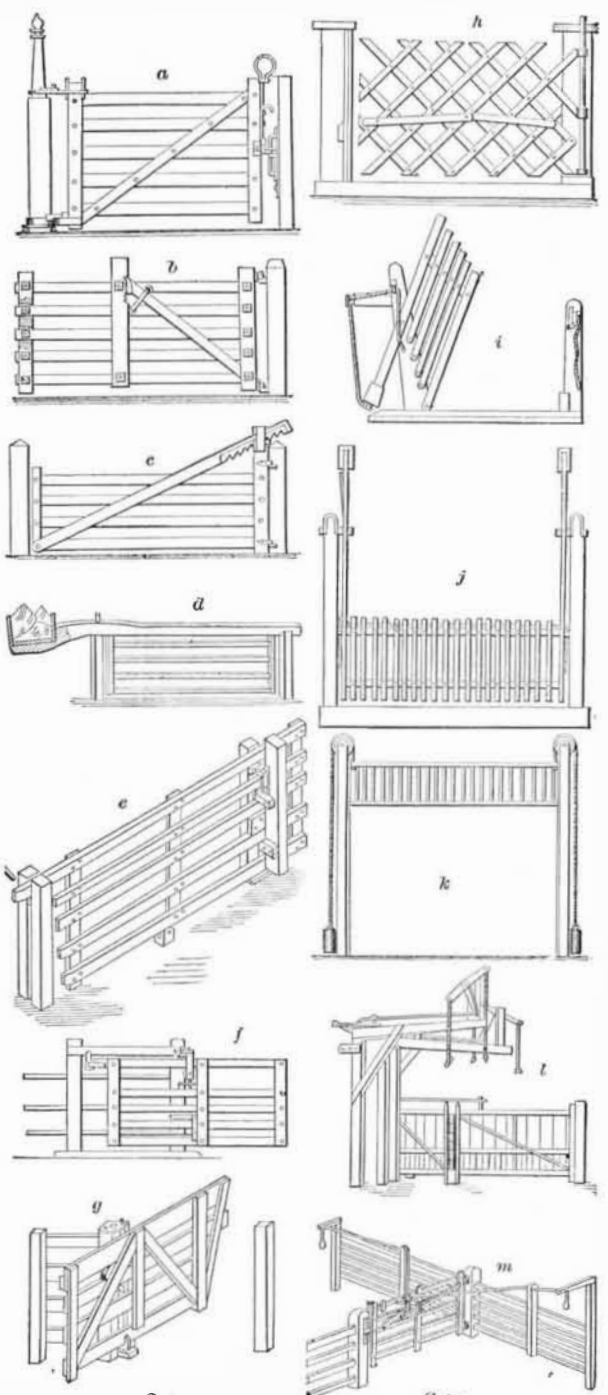
HINGES,

which are probably the oldest devices of the kind now known, were crude affairs, and were very similar in construction to those made in our early Western log cabins. A pin projecting from the upper edge of the door was socketed in a vertical hole made in a bracket attached to the wall, and a similar pin on the lower edge of the door was stepped into a socket in the floor or threshold. The illustration, a, Fig. 7, is from a model house, found in Egypt by Mr. Salt, and now in the British Museum. The doors of Egypt were either single or double, and were secured by bars and bolts, as seen in the figure. The hinge pieces were usually made of bronze. b and c show the upper and lower door pins and the sockets, in which the edge of the door is received and in which it is secured by bronze pins. The projection on the upper piece was to keep the door from striking against the wall. o shows the general form of a door in remains of

stone, marble, wood, and bronze. p is a bronze hinge in the Egyptian collection of the British Museum. q is the plan of the threshold of an ancient temple with the arrangement of the folding doors. r and s are four Roman hinges of bronze now in the British Museum.

Fig. 5.

Fig. 6.

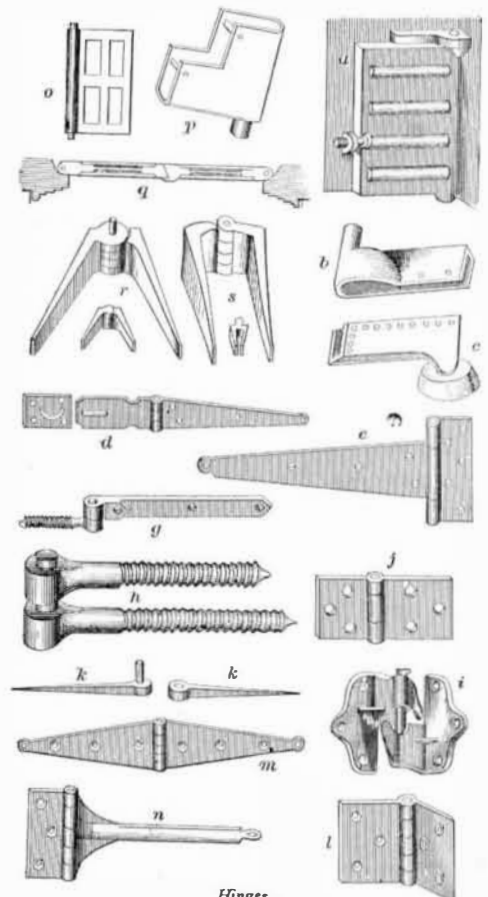


Gates.

Gates.

The other hinges shown in Fig. 7 are designated according to the purposes to which they are applied, or with reference to some structural peculiarity of shape. Thus i is a loose joint or self-shutting or blind hinge; g is a screw and strap

Fig. 7.



Hinges.

or gate hinge; h is a screw hook and eye or gate hinge; k is simply a hook and eye; l is a butt hinge; d, a hasp hinge; e, a T hinge; j, a table hinge; m, a strap hinge; and n, cross garnet hinge.

Abstract from the Congressional Annual Report of the Hon. R. H. Buell, Commissioner of Patents, for the Year Ending December 31, 1875.

Table with 2 columns: Item, Amount. Includes Money received by the Patent Office during the year 1875, Expenditures during the year, Balance to credit of Patent Fund, etc.

Statement of the business of the Office for the year 1875. Table with 2 columns: Item, Number. Includes Number of applications for patents during the year 1875, Number of patents issued, etc.

Of the patents granted there were to— Citizens of the United States, Subjects of Great Britain, Subjects of France, etc.

Comparative statement of the business of the Office from 1837 to 1875, inclusive.

Table with 6 columns: Year, Applications, Patents issued, Cash received, Cash expended. Shows data from 1837 to 1875.

THE CENTENNIAL.

The Patent Office is to be represented at the Centennial exhibition, and a space of 10,000 square feet has been assigned for the exhibition of models of American inventions...

MANUFACTURES OF AGRICULTURAL IMPLEMENTS.

In referring to the census, under the head of "manufactories in operation in 1870, exclusively for agricultural implements," it is found that—

Table with 2 columns: Item, Number. Includes Number of establishments in operation, Horse power, Number of water wheels at work, etc.

The census shows an increase of \$34,578,825 in the value of agricultural implements manufactured over the amount reported in 1860, and of \$45,224,174 over the amount reported in 1850...

The following are the products of agricultural implements of the manufactories first above referred to, being the articles manufactured and number made:

Table with 3 columns: Item, Number, Value. Lists various agricultural implements like Cane mills, Horse rakes, Mowers, etc.

PATENTS FOR AGRICULTURAL IMPLEMENTS.

For the articles above enumerated, there have been granted between the years 1790 and 1873, inclusive—that is to say, since the organization of this Office (1790)—the following patents:

Table with 3 columns: Item, Number, Value. Lists patents for various agricultural implements like Canemills, Horse rakes, Mowers, etc.

MISCELLANEOUS AMERICAN PATENTS.

These indicate the scope and versatility of the inventive genius of our country, and all enter more or less into the "mechanical and manufacturing industries" that have been referred to. They are as follows:

Table with 3 columns: Item, Number, Value. Lists miscellaneous patents like Bee hives, Bending machines, Pavements, etc.

Summary statistics: Total number of patents issued since 1836, Total number of reissues, Total number of designs, etc.

In presenting this annual report, the Commissioner makes several suggestions and recommendations for the improvement of business facilities at the Patent Office.

- 1. To the corps of one hundred examiners now employed, he asks for an addition of twelve more examiners.
2. He suggests that all decisions of the courts shall be published in the Official Gazette...
3. The publication of the back patents—those granted between 1836 and 1871—is urgently called for...
4. The improvement of the Patent Office library, by an annual appropriation of \$5,000, is suggested.
5. The necessity of enlarging the Patent Office is conclusively shown.

DECISIONS OF THE COURTS.

Supreme Court of the United States.

THE GREEN CORN PATENTS.—RUFUS K. SEWELL, ADMINISTRATOR OF HENRY CLARK, DECEASED, APPELLANT, vs. JOHN WINSLOW JONES et al.—APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE DISTRICT OF MAINE.—OCTOBER, 1875.

To entitle a plaintiff to recover for the violation of a patent, he must be the original inventor, not only in relation to the United States, but to other parts of the world. Even if the plaintiff did not know that the discovery had been made before, still he cannot recover if it has been in use or described in public prints, and if he be not, in truth, the original inventor.

When a party has invented some mode of carrying into effect a law of nature, or a rule of practice, it is the application of that law or rule which constitutes the peculiar feature of the invention. He is entitled to protect himself from all other modes of making the same application, and every question of infringement will present the question whether the different mode, be it better or worse, is, in substance, an application of the same principle.

The patent first mentioned is for an article of manufacture—a result. The second one is for a process by which a result is obtained. The first is the more full, and embraces all that is contained in the second.

The first objection made to the patents is the want of novelty. It is contended that the nature of the invention was known to the public by the Durand patent of 1810; also by the patent of Gunther, of 1841, and by that of Wertheimer, of 1842.

1. "I place the said food or articles in bottles of glass, pottery, tin, or other metals or fit materials, and I close the aperture so as completely to cut off or exclude all communication with the external air," and he describes the various means of effecting that purpose.

2. "When the vessels are thus charged and well closed, I place them in a boiler, each separately surrounded with straw or wrapped in a coarse cloth, or otherwise defended from striking against each other. I fill the boiler so as to cover the vessels with cold water, which I gradually heat to boiling, and continue the ebullition for a certain time, which must depend upon the nature of the substances included in the vessels, and the size of the vessels, and other obnoxious circumstances, which will be readily apprehended by the operator."

3. The articles thus to be preserved are to be placed in tin or other vessels, so arranged as to exclude communication with the external air.
4. The vessels, thus prepared, are placed in a boiler filled with cold water, which is heated to a boiling point, which boiling shall be continued for such time as shall be required by the substances contained in the vessels.

5. Although a water bath is preferred, the inventor declares he avails himself of heat through an oven, stove, steam bath, or any other situation fit for gradually raising the temperature and suffering it to cool again.
6. Vegetables are to be put into the vessels in a raw or crude state; animal substances, raw or partly cooked.

7. The invention is general in its terms, embracing all vegetables and all animal substances capable of being thus dealt with. Winslow's patent of April 8, 1862, No. 34,928, is declared to be for an improvement in preserving Indian corn in the green state.

Let us now state the points embraced in this the plaintiff's patent, and compare them with the points heretofore stated as included in the Durand patent.

1. Winslow's declared object is the preservation of Indian corn in the green state. Durand's is for preserving Indian corn not only, but all vegetable substances in their raw or crude state.

2. Winslow recommends removing the kernels from the cob before the process of preservation is commenced, placing the kernels in cans, sealing them, and exposing them to heat. Durand, not limiting himself to the article of corn, provides that the articles to be preserved shall be placed in cans, and subjected to heat in the same manner.

3. Winslow directs that the kernels shall be subjected to the heat for a period of about one and a half hours before puncturing, and for about two and a half hours after the puncturing. Durand directs that the boiling shall continue for such length of time as shall be required by the particular substances contained in the vessel.

To infringe a patent it is not necessary that the thing patented should be adopted in every particular. If the patent is adopted substantially by the defendants they are guilty of infringement. (Koot vs. Ball, 4 McLean, 177; Alden vs. Denny, 1 Story, C. C. R., 336.)

Other grave questions are presented by the record before us. We are satisfied, however, to place our decision upon the ground that the want of novelty in the patents of Winslow is fatal to the plaintiff's right of recovery.

NEW BOOKS AND PUBLICATIONS.

REPORT ON THE COMPRESSIVE STRENGTH, SPECIFIC GRAVITY, AND RATIO OF ABSORPTION OF THE BUILDING STONES IN THE UNITED STATES. By O. A. Gilmore, Lieutenant-Colonel of the Corps of Engineers, Author of "A Treatise on Limes, Cements, etc."

THE SCIENCE OF ENGINEERING. A series of tests which were partly reported on to the end of July, 1874. The present volume carries the investigation one year further, and gives some very valuable and interesting facts and information, which, taking into consideration the rapid growth of the use of artificial stone, is of the highest practical importance.

DIGEST OF OPINIONS OF THE JUDGE ADVOCATE GENERAL OF THE ARMY, containing a Selection of Official Opinions furnished between September, 1862, and July, 1868. Edited by Major W. Winthrop, Judge Advocate. Washington, D. C.: Government Printing Office.

REPORT ON THE HYGIENE OF THE UNITED STATES ARMY, with Descriptions of Military Posts. Washington, D. C.: Government Printing Office.

JAMES W. TUFTS' CATALOGUE OF SODA WATER APPARATUS. Boston, Mass.

DYNAMOMETER EXPERIMENTS ON SPINNING FLAX. By E. Cornut, Chief Engineer of the Association of Steam Power Proprietors of Northern France. Lille, France: L. Danel.

Recent American and Foreign Patents.

NEW MECHANICAL AND ENGINEERING INVENTIONS. IMPROVED STOPPING MECHANISM FOR SPINNING JACKS. William W. Sinclair and Edward Galvin, Mottville, N. Y.—This invention consists of automatic mechanism for throwing off the driving belt of a spinning jack in case the squaring band breaks or fails to act.

IMPROVED WIND POWER. Timothy C. Guthery, Freedom, Ind.—This invention relates to an improvement upon the wind wheel covered by patent No. 91,457, and consists in mounting the wheel upon a shaft having its bearings in a rotating bar, to whose upper end a vane is rigidly attached.

IMPROVED AUTOMATIC WASTE PIPE CLOSING ATTACHMENT. F. Philip Bourne, Brooklyn, N. Y.—The object of this invention is to furnish an improved attachment for waste pipes, so constructed as to prevent the escape of gases, odors, etc.; and it consists in the combination of a valve chamber or box, bottom plate, chambered top plate, pipes, pivoted valve, pivoted valve plate, and weight with each other, so arranged as, when the waste water is admitted into the pipe in sufficient quantity to overbalance the downward pressure of the weight, the valve will be lowered into an inclined position, allowing the wastewater to flow into the pipe.