

and powder up from the cup, E, into the Bunsen flame, whence it is ignited with a flash.

The lamp shown in Fig. 2 operates on the same principle, but the central tube is connected by a metal tube, C, to the reservoir, A, holding a supply of magnesium powder. The gas enters at E, and the flame burns just above D. F is a reflector. The rubber pipe and bulb is attached at B. The hole for admitting the powder

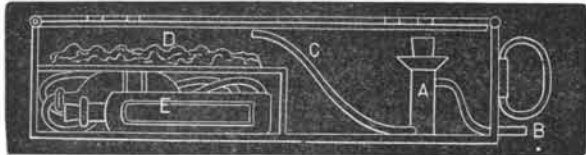


Fig. 1.

to this reservoir, A, is stopped with a cork. The gas may be kept burning all the time. As the air is forced into A, by compressing the bulb, a quantity of the powder is forced upward into the gas flame and ignited with a flash. It is only necessary to make successive compressions of the bulb to produce successive flashes, until the powder in the reservoir, A, is exhausted.

We have tried insect powder devices for forcing out the magnesium powder, but they do not prove effective unless the conical expelling tube is packed with the powder, that it may act as a piston, so that with a sudden compression of the bulb the whole of the powder will be ejected at one impulse. If space is allowed for the air to pass by, the powder will

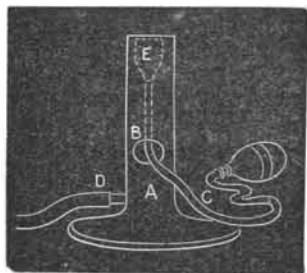


Fig. 2.

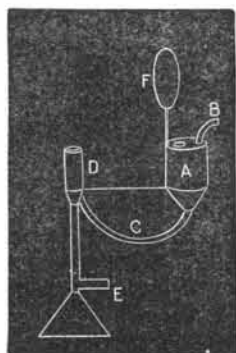


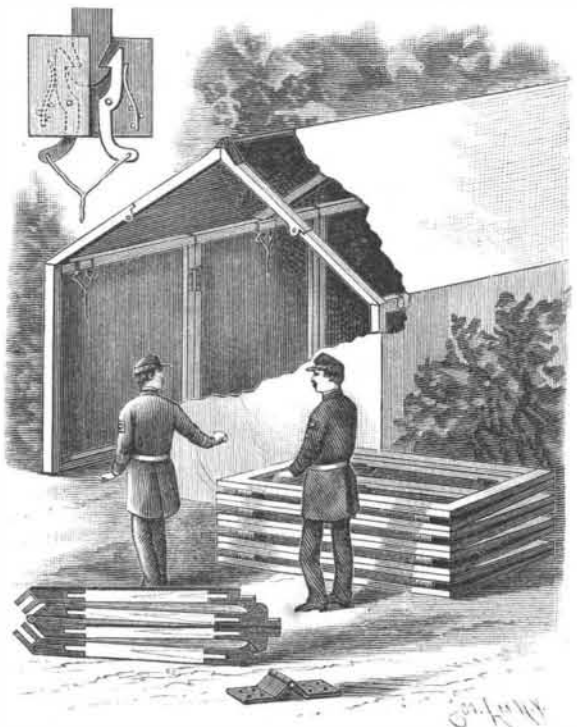
Fig. 3.

not be evenly discharged. The mouth of the jet in Fig. 1 should be about one-eighth of an inch in diameter.

It seems certain that the value of the flash light is now fully established as a means of obtaining photographs at night. Hence there is a field open to inventors for devising more effective devices, whereby the full power of the magnesium powder may be utilized.

**AN IMPROVED FOLDING TENT OR LODGE.**

An invention providing a folding tent or pavilion, which can be folded in small compass for transportation, has been patented by Mr. Laurence F. Ryan, of No. 172 East 112th Street, New York City, and is illustrated herewith. The body of the support is made of a series of rectangular frames, as shown folded in the illustration, the contiguous sides of the frames constituting the angles when the body is set up, being connected at top and bottom by a bracket hinge, the frames designed to be in alignment when the tent is set up having their contiguous sides united by a different form of hinge, and a locking device being provided for attach-



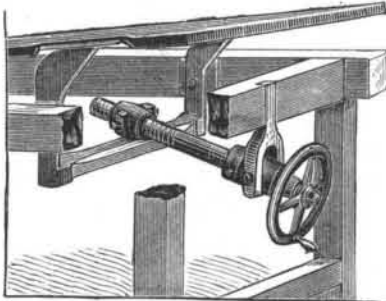
RYAN'S FOLDING TENT.

ment to the inner faces of the upper ends of the frames. The rafters are made to fold in sections, as shown, and when the tent is set up, are held in engagement by the locking device. A canvas covering is then thrown over the structure and made fast in any approved man-

ner, making a tent or pavilion which is firm and commodious, and which may be quickly and easily struck, or set up with little labor.

**FARWELL'S SAW TABLE ADJUSTER.**

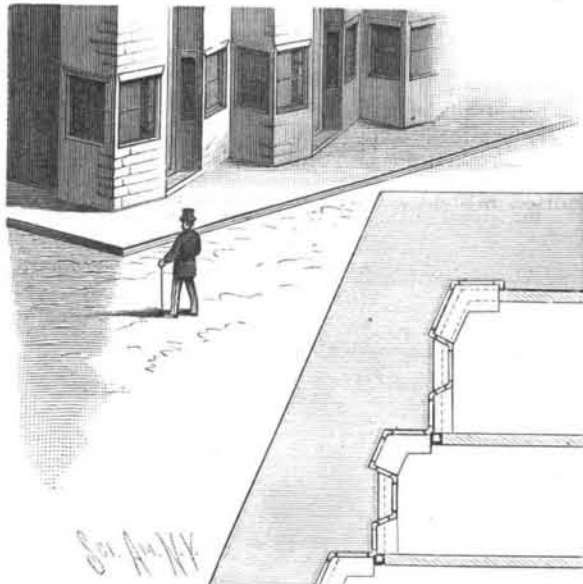
This adjuster, as shown in accompanying cut, consists of an arm each side of the frame, pivoted to an iron plate screwed to the frame. Connecting the arms at the bottom is a cross piece, in the center of which is an iron stand, for the reception of a pivoted nut, threaded to a screw extending to a bracket at front of frame, passing through a pivoted collar to a hand wheel, by which the arms are raised and lowered alike, and at the same time securing a solid bearing for each corner of the bench top, by means of a grooved track, in which the arms work, thus preventing any side motion, and enabling the operator to adjust the top to any height required very quickly. The cross piece at bottom of arms is of wood, thus easily adjusted to any bench.



The Rollstone Machine Co., 48 Water Street, Fitchburg, Mass., the well known manufacturers of all kinds of wood working machinery, are the sole manufacturers, and will be pleased to furnish any additional information.

**BUILDING FRONTS ON DIAGONAL STREETS.**

An invention relating to the construction of buildings on the line of a diagonal street, providing a design according to which the front of one building will not interfere with the view of another, and the front entrance will be at right angles, while there will be advantageous show window space, is illustrated herewith, and has been patented by Mr. Addison Smith, of



SMITH'S IMPROVED CONSTRUCTION OF BUILDINGS.

the Elliott House, New Haven, Conn. Each side wall has a window reaching to the building line, and from such windows are built diagonal front windows on the building line, reaching nearly to a central door entrance. At the left of the doorway is built a window set somewhat back of the building line, and parallel with the doorway, as shown in the plan view.

**The French Navy.**

According to a recent report, the French navy consists of 386 vessels of all kinds, made up as follows: 18 first class ironclads, 19 armored cruisers, 1 ironclad floating battery, 9 battery cruisers, 9 first class cruisers, 11 second class cruisers, 15 third class cruisers, 15 first class dispatch boats, 31 second class dispatch boats, 16 dispatch boats also available as transports, 8 dispatch boats available as torpedo vessels, 16 unarmored gun boats, 12 launches, each carrying a gun, 11 steam launches, 10 sea-going torpedo boats, 62 first class torpedo boats, 41 second class torpedo boats, 7 vedette torpedo boats, 10 first class transports, 10 second class transports, 4 third class transports, 13 sailing ships, 29 ships used for fishery protection, and 3 training ships.

A WRITER in the *Sanitary News* suggests the following simple mode of thawing our water pipes:

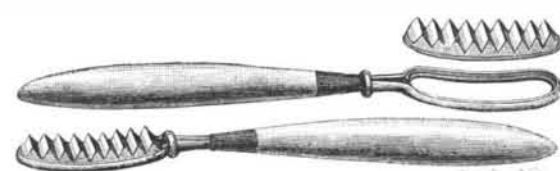
When I think there is a possibility that the pipes leading to the boiler might be frozen, as soon as I start the fire I pour a little alcohol into an old spoon and burn it under and along the hot water pipe from the stove to the boiler until it is warm. This loosens any ice that may have formed, and makes a vent that will prevent any explosion. If the cold water pipe was thawed instead, it might freeze up again before circulation started to keep it open.

**A NOVELTY IN TOOTH BRUSHES.**

It is obviously the intention of nature to supply every member of the human family with a good set of teeth. Strangely enough, the value of these very necessary organs is not appreciated by a large proportion of the people until decay is indicated by pain of the most uncomfortable sort. Then the sufferer resorts to the dentist, who perhaps succeeds in repairing the masticating apparatus so that it still serves its purpose. But a lesson has been learned, and it becomes a question as to preserving the teeth from further decay, thus avoiding pain, discomfort, and the dentist.

A tooth brush, tooth powders, and rubber bands or silk floss are the usual preventives of dental troubles. The utility of the first of these, in its common form, has been questioned by authorities in these matters. The bristles of tooth brushes are extremely harsh and unpleasant, producing unnecessary friction and wear upon the enamel, and inducing diseases of the gums. The bristles tooth brush has been used for so many years as to render it difficult to realize that anything better could be provided for the same purpose, still we here present a cut of a brush which, although of recent invention, has come into extensive use, and is favorably known wherever introduced. It is a tooth brush, or polisher, formed of felt and adapted to be used in connection with a suitable holder, as shown in the engraving.

This brush conforms to all the surfaces of the teeth,



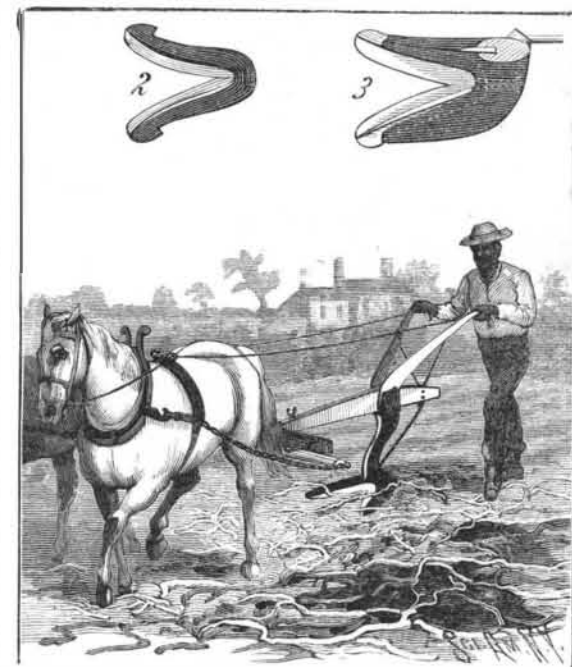
A NOVEL TOOTH BRUSH.

thoroughly cleansing and polishing them without undue friction, and without in any way injuring the gums. When one of the serrated felt tablets becomes worn, it may be instantly replaced by a new one at slight expense.

This novel article is being extensively manufactured by the Horsey Manufacturing Co., of Utica, N. Y.

**AN IMPROVED GRUBBER.**

A device specially adapted to remove from the surface of the ground the "saw palmetto," by cutting the roots which the stem sends out from its under surface into the ground, has been patented by Mr. Austin E. Lyman, and is represented herewith. To a beam similar to a plow beam is attached a standard having a bifurcated integral base or shoe, the opening being to the front, the bottom of the shoe being of a shape to run readily along the surface of the ground, and the standard and shoe being steadied by an inclined brace from the rear of the beam. The inner front edge of the body of the shoe is adapted to hold a knife or knives attached thereto, whereby an acute angle is formed at the back of the frame, as shown in Fig. 2, permitting nothing entering the open forward end of the carrier and traveling backward to escape uncut. A colter or vertical blade is affixed in the front edge of the standard, as shown in the sectional view, Fig. 3, to cut any transverse roots or vines that might come in the path of the shoe, and the grubber is made both right and left handed. By means of the handle the shoe may be



LYMAN'S GRUBBER.

given a motion from side to side as the team moves forward, rendering it easier for the team in working and facilitating the cutting of the roots.

For further particulars relating to this invention address Mr. John R. Lyman, Melbourne, Fla.