

warehouses, carriages, fences, agricultural implements, and household furniture. The millions require it in fashioning the implements of toil; three-fourths of the products of the earth, and of all human industry, are inclosed in wood for preservation or transportation; the masses, in all countries, warm their dwellings and cook their food by its combustion, and the whole vast commerce of the world still rides on every ocean and sea in vehicles of wood.

The new process is equally applicable to wood in all its uses except for fuel. But we have no data from which a reliable estimate can be made of the immense saving which would result from its universal adoption.

In the engravings accompanying this lengthy article on preserving wood, the same letters of reference indicate the same parts as are referred to Mr. Robbins's patent, the specification of which we publish entire.

To any of our readers who may like to know Mr. Louis S. Robbins's address, we would state that he has an office at No. 68 Broadway, New York.

#### FARMER'S CLUB.

The Farmers' Club of the American Institute held its regular weekly meeting at its rooms at the Cooper Institute, on Tuesday afternoon, Jan. 30th, the President in the chair.

#### THE WAY TO RAISE PEACHES IN COLD CLIMATES.

W. H. Sanborn, of Vandalia, Ill., sent a communication describing his method of raising peaches in latitudes too high for their successful culture in the usual manner. He had tried his plan for several years in New Hampshire with success. On setting out his young trees he cuts off the trunk one foot above the ground, and paints the wound with a stiff water-proof paste, made by dissolving gum shellac in alcohol. He then trains the branches out horizontally like the spokes of a wheel, and the vertical branches that rise from these he cuts back one-half in midsummer. During the winter he keeps his trees covered with straw or bog hay, allowing the covering to remain till the buds begin to swell.

#### TO KEEP MILK SWEET.

Mr. Kavanah, in reply to a question by a correspondent, said that milk may be kept sweet by keeping it in a clean room in company with fresh water. In some places it is customary to set tubs of water along the middle of the cellar, cave, or milk house, with an arrangement of pipes by which the water can be readily changed twice a day. It is found that this arrangement prevents the milk from being soured even by lightning.

#### THE BEST WAY TO MAKE A HOT BED.

Mr. Quinn described at length the latest and most approved plan among market gardeners of constructing hot beds. Some horse manure is moistened and piled up to heat about the 1st of January, and the hot bed is formed in the month of February, from the 15th to the 20th. A site is selected with a southeast exposure, and a trench is dug 3 feet in depth, 6 feet in width, and of any length desired. This trench is filled with horse manure—first, 18 inches in depth of cold manure, then 18 inches of hot, then 8 inches of cold, next a thin layer of hot, and finally a thin layer of cold; the whole being thoroughly trodden down, and just about filling the trench. A frame of rough boards is made of the same width and length as the trench, 2 feet in height on the northerly side and 15 inches on the southerly side. This is set into the trench before the filling is completed, so as to bring the top of the frame just above the level of the ground. Fine, rich, mellow soil is filled into the frame on top of the manure to the depth of 8 inches, the seed is sown on the surface of this soil, and is covered by sifting fine earth upon it through a sieve. The frames are crossed at intervals of 3 feet by bars to support the sash—the bars having raised pieces in the middle, between which the sash slides up and down. The bars for the glass are laid in only one direction—across the frames—the glass being laid in the manner of shingles. Formerly 8x10 glass was used, but now the preference is given to 4x6—the sash bars being placed only 4 inches apart. The speaker thought it well to have the glass cut with the lower end rounded, in order to lead the dripping water to the middle of the panes. Tomatoes, cabbage and lettuce, requiring about the same temperature, and germinating in about the same time—from 48 to 60 hours—may be planted in the same frames; but peppers and egg plants demand more heat, and take some ten days to sprout; they must, therefore, be placed in different frames.

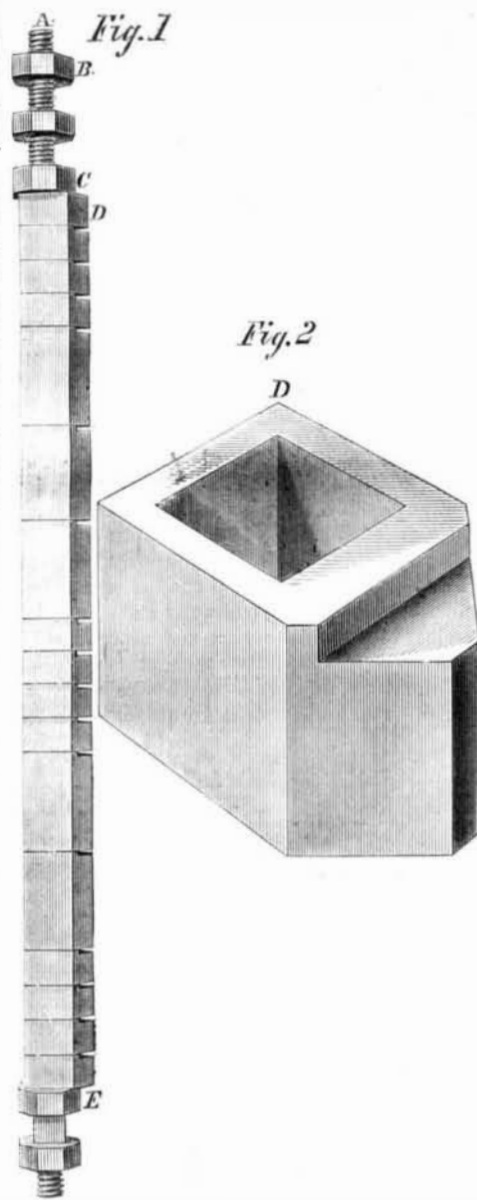
Mr. Bergen remarked that in his neighborhood it was not the practice to mix hot and cold manures, but to build up hot beds with one kind of manure.

Mr. Quinn, in reply, said that by using hot manure, and by transplanting three or four times, they were able to get tomatoes two weeks earlier than they could by using cold manure and by one transplanting. This is very important, as the earliest tomatoes bring \$3 and \$4 per basket, while he had sold thousands of baskets later in the season at from 10 to 18 cents per basket. Last year he sent to market 10,000 baskets of tomatoes.

#### TACEY'S IMPROVED GANG SAW GAGE.

Much time and care have been expended in the accurate adjustment of gang saws. Every change in the thickness of the lumber requires a new arrangement.

This invention is intended to facilitate the opera-



tion of setting. With the gage holders once fixed in line in the saw frame, a number of changes can be readily made by any workman in a few minutes.

A reference to the engraving will show the simplicity and utility of the apparatus. It is claimed that two-thirds of the time of the mill and of the workmen is gained over the old methods.

The inventor uses eight gage bars with movable gages of different lengths for each; four to be in use at a time, and four to be prepared in advance for a change of saws. A proper combination of the various sized gages enables the operator to saw any thickness from one inch upward, varying by one-quarter of an inch.

Fig. 1 is a perspective view of a gage bar with nuts and gages. A is the bar, one inch square.

B B B are nuts by which the bar is fastened in the saw frame. C is a nut which holds the gages firmly against the collar E. F is a collar fast to the bar, resting firmly against the gage holder in the saw frame. When the gage holders are once fixed in line, the collars, being of uniform thickness, will keep all the gages in line also. D is one of the movable gages which, sliding upon the bar, hold the saws in the gains in their beveled edges.

Fig. 2 is a perspective view of a movable gage for sawing inch boards, drawn full size.

For further particulars address James Tracey, Brewer Village, Penobscot Co., Maine.

#### Burning Smoke.

An apparatus for the consumption of smoke has been applied to the furnaces of the North British Rubber Works by a Huddersfield firm. The apparatus is easily managed; it consists of two sets of doors; the outer or closed door is in two halves, and opens from the center; the inner door, which works on the same hinge, is perforated with hexagon-shaped holes, and is meant to break-up the volume of air going into the furnace into a sort of blast. This blast is counteracted upon by an opening for air underneath the furnace dyke, the door of which is regulated by a check rod. When the fire is charged with coal the outer door and the one under the fore dyke are left open, while the inner door is kept shut until the coals are well kindled, when the outer and under doors are closed, and the furnace goes on burning as if no apparatus were there. A pipe about one inch diameter, and perforated with holes, passes along the front of the ash pit, from which small jets of steam spread along the under part of the furnace bars, supposed to generate air and keep the bars from overheating. The introduction of the apparatus causes little or no alteration in the ordinary furnace, except the taking away of the usual doors, and the putting in others of the construction described. This apparatus, as applied to the fire openings of one great furnace at the Rubber Works, proves its efficiency in burning the smoke; though, as in all cases, the efficiency depends on the apparatus being worked properly by the person in charge of the furnaces.—*London Mining Journal*.

[The idea of generating air from steam jets is absurd.—Eds. SCI. AM.]

#### Official Report of the Cattle Plague.

The return published by the Veterinary Department of the British Privy Council, for the week ending Dec. 30th, gives an account of the loss of stock by the disease, from its commencement in June to the end of the year 1865, as reported by the local inspectors. In England 48,964 animals were attacked during the whole period, and of them 11,142 were killed as a preventive measure, 27,177 absolutely died of the disease, 3,655 recovered from the attack, and 6,990 diseased animals were remaining on Dec. 30th, whose fate will be recorded in subsequent returns.

In Wales the disease was confined to the two counties of Denbigh and Flint, and the total number attacked was 2,287; of these 93 were killed, 1,565 died, 218 recovered, and 411 remained under observation.

In Scotland 22,298 animals were attacked; 2,998 of these were killed, 12,749 died, 3,172 recovered, and 6,381 cases were undetermined.

In Great Britain, therefore, the aggregate numbers stands thus—attacked, 73,549; killed, 13,931; died, 41,491; recovered, 7,045; and 11,082 (or 15 per cent of the attacks) are brought forward into the account for 1866.

AN INVENTION WANTED.—The *London Times*' Paris correspondent says:—"A discovery has been made at Toulon, where the iron-plated frigate *Provence* is undergoing repairs, which shows the danger that menaces the entire iron-coated fleet of France. The *Provence* was fitted out for sea only 15 months since, and already a great number of her plates are nearly consumed with rust. The Director of Naval Architecture is of opinion that if a composition be not discovered to prevent the action of rust, the iron-plated fleet must be renewed every five years.

THE FIRST STEP.—In the House of Representatives, on the 5th inst., Mr. Allison introduced a bill fixing a standard of weights and measures corresponding with the French decimal system.