

**IMPROVED WOODWORKING MACHINERY.**

A growing demand is noticed among manufacturers in wood for machines combining the functions of several different tools in one, thereby economizing space in the factory and capital in investment. These machines are, from the great range of work for which they are adapted, known as universal woodworkers.

In the manufacture of builders' material, sashes, doors, etc., as well as in the production of furniture, agricultural implements, railroad cars, patterns, etc., such machines are almost invaluable. Their true value, however, is based upon the ease with which they can be adjusted, and the facility with which the changes can be made for the different kinds of work.

The apparatus illustrated herewith combines all the features of the variety woodworkers and hand planers of the same manufacturers, with a complete molding and flooring machine. The essential features of the original Climer & Riley patent on woodworkers are all included, together with many novel and important improvements and labor-saving devices, originated by the makers.

The two sides of the machine are driven from one countershaft, which is so arranged as to convey the power to both sides simultaneously or separately, as the operator may desire. The double friction pulley on the countershaft is caused to come in contact with the driving pulleys for the cutterheads by means of two levers, one for each operator, by which he sets in motion or stops his side of the machine as he may desire. This method of obtaining independence of the combination is new and effective, as two operators can perform their work, one on each side, without either interfering with the duties of the other.

Upon the molding side, the moldings can be worked to eight inches in width, also narrow surfacing and flooring to eight inches in width. This side is furnished with a pair of powerfully geared and heavily weighted feed rollers, the motion of which can be instantly started or stopped, or given a quick or slow motion, as may be required. The inside and outside cutterheads can be swung to an angle, and have a vertical adjustment with the table to which they are attached. The under cutterhead is adjustable for different thicknesses of cut, and can be used for forming moldings on the under side of the stuff. This molding side is provided with the same features and adjustments for making accurate moldings as the molding machines of the same manufacturers, and is convenient of adjustment and adapted for simple or complicated moldings up to eight inches wide.

The primary design of the woodworker side is for dressing out of wind, and for trying up and squaring lumber. By the addition of various heads and fixtures necessary to each operation, it is rendered capable of rabbeting, jointing, beveling, gaining, chamfering, plowing, making glue joints, beading, raising panels, ripping, cross-cutting, tenoning, making circular, waved, and serpentine molding, and a great variety of work, practically limited only by the ingenuity of the operator.

The whole machine has for its support a heavy iron column, upon which all the tables are planed and gibbed to move vertically, each having a separate adjustment. The woodworker tables have a horizontal adjustment for the accommodation of different sizes of heads and cutters, the vertical adjustment being used to graduate the depth of cut for grooving, gaining, panel raising, surfacing, etc.

One of the spindle bearings on the woodworker side is cast solidly to the column, the other being movable in a planed seat, and retained in its place by a screw. This outside bearing is readily removable to allow interchange of cutterheads on the spindle, and gives the spindle a steadiness not to be acquired where the head overhangs the framing of the machine.

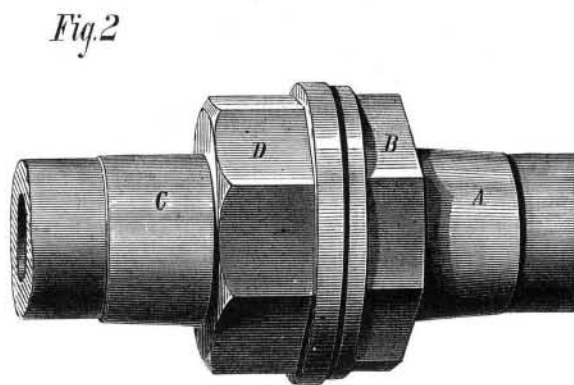
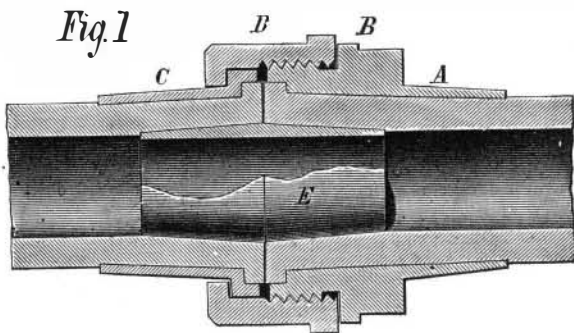
The tables are furnished with grooves for receiving the gaining frame slide and other attachments, and for making a continuous table by fitting in slides of the proper form. The fence is attached to and moves with the forward table, can be adjusted to an angle of 45°, and is arranged to receive

stud springs for holding down the lumber, and for bolting the panel-raising attachment.

The machine is very complete in all particulars, and the desirability of the combination can hardly be called in question. This machine can be seen in daily operation at the space of J. A. Fay & Co., Machinery Hall, Centennial Buildings, section B, 8, columns 61, 62, 63. Any desired information will be furnished on application to the manufacturers, Cincinnati, Ohio

**LELAND'S PIPE COUPLER.**

We took occasion some time ago to bring to the notice of our readers a remarkable case of bad plumbing which came under our immediate observation. The instance was that of a wiped joint of the ordinary type used to connect lead water pipes, but through which, by blundering workmanship, the solder had been squeezed so as nearly to fill the bore of the tubes joined. The result was that great trouble was incurred in overhauling all the water pipes of the building to



find why the water refused to run in the upper stories, and finally, only after large expense was incurred, the source of the difficulty was discovered. We have repeatedly expressed our opinion that wiped joints are at best badly contrived affairs, and that there is a good opportunity for inventors to devise a new method of connection for pipes which will not require fire, and solder, and skill combined to render it available. There are so many uses for such a coupling that, for one that is really cheap, simple, and capable of easy application by any one, without the aid of a plumber, a wide demand is a reasonable certainty.

In the annexed engraving is represented a device which seems to meet all the requirements as above stated, and which we can commend very highly to our readers. Its construction will be understood from the sectional view, Fig. 1, its exterior appearance from Fig. 2. It is applied as follows: A is a ferrule of brass or other suitable metal, tapered within and also having an interior shoulder. There is also an exterior collar at B, and a threaded portion adjoining. The ferrule is slipped over the end of the pipe, into the mouth of which a steel or iron shouldered tamp pin is inserted. A few blows of a hammer on the latter distends the metal of the pipe to the taper of the ferrule, and the shoulder of the tamp pin forms a facing of the pipe on the shoulder of the ferrule. On the other extremity of the pipe is applied, in pre-

cisely the same way, the ferrule, C, retained by a shoulder on which is the female union, D. A double thimble, E, of brass or iron, is then inserted in the mouth of one part of the pipe; the other end is brought over it, and the thread of the union engages with the threaded portion on the ferrule, A. By a few turns of the wrench the parts are drawn tightly together, the distended metal of the pipe itself meeting and forming the joint. The thimble simply fills up the enlargement of the bore produced by tapering the ends, and of course aids in strengthening the connection.

We have seen this coupler attached to lead pipe and secured inside of a minute and a half, and we are assured that it may be applied with nearly equal facility to the connecting of lead to iron and copper to copper, and parts of hose. It is excellently suited for use on plumbing work in houses, especially at points where both strength and a neat appearance are required. It will be found valuable in proximity to ranges or furnaces, where the heat frequently melts the solder, and will probably find an extended application on locomotives. It also is well suited to supersede the somewhat clumsy wire binding used in connecting Westinghouse brake tubes. It may be applied to attach pipes to corporation mains, without turning off the flow of water. It is extremely strong, and has been tested under the severest pressures.

Patented by E. A. Leland, February 8, 1876. For further information address the Leland Coupler Company, 36 John street, New York city.

**Eating Bread and Milk with Lime Water.**

Milk and lime water are now frequently prescribed by physicians in cases of dyspepsia and weakness of the stomach, and in some cases, to our knowledge, the diet has proved very beneficial. Many persons who think good bread and milk a great luxury frequently hesitate to eat it, for the reason that the milk will not digest readily. Sourness of the stomach will often follow. But the experience of many will testify that lime water and milk is not only food and medicine at an early period of life, but also at a later, when, as in the case of infants, the functions of digestion and assimilation have been seriously impaired. A stomach taxed by gluttony, irritated by improper food, inflamed by alcohol, enfeebled by disease, or otherwise unfitted for its duties, as is shown by the various symptoms attendant upon indigestion, dyspepsia, diarrhoea, dysentery, and fever, will resume its work and do it energetically on an exclusive diet of bread and milk and lime water. A goblet of cow's milk, to which four tablespoonfuls of lime water have been added, will agree with almost any person, will be agreeable to the stomach when other food is oppressive, and will be digested when all else fails to afford nourishment.

The way to make lime water is to procure a few lumps of unslaked lime, put the lime in a stone jar, add water until the lime is slaked and is about the consistence of thin cream. The lime will soon settle and leave a clear and pure liquid at the top, which is lime water. As the water is taken out more should be added, and the lime should be frequently stirred up and allowed to settle.

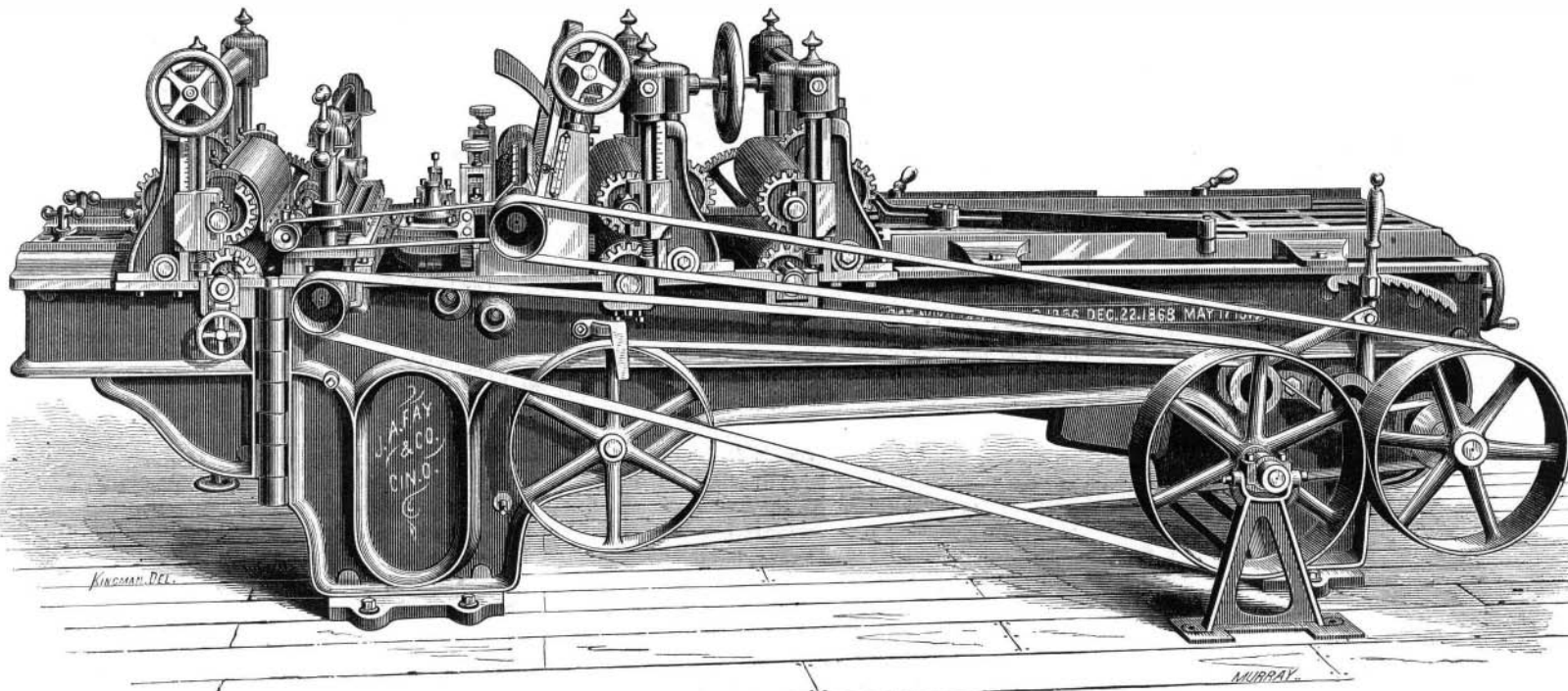
**Colors for Confectionery and Food.**

The police of Paris have directed that the following substances be employed for coloring articles of food or confectionery: Blue: Indigo and its derivatives, Prussian blue. Red: Cochineal, carmine, Brazil wood lake, orchil. Yellow: Saffron, Avignon yellow berry, quercitron, fustic, turmeric. Green: Mixture of Prussian blue and logwood (Campeachy wood). Violet: Mixture of carmine and Prussian blue.

The use of the following pigments is prohibited: Oxide of copper, blue copper salts, red lead, vermilion, chrome yellow, gamboge, white lead, Schweinfurt and Scheele's green (Paris green).

For coloring drinks they recommend Curaçoa logwood; for absinthe, soluble indigo blue with saffron; for blue liquids, soluble indigo blue, Prussian blue, and ultramarine.

We notice that, singularly enough, aniline colors are omitted from the list of prohibited colors.



J. A. FAY & CO'S UNIVERSAL WOOD WORKER.