

**IMPROVED WOODWORKING MACHINERY.**

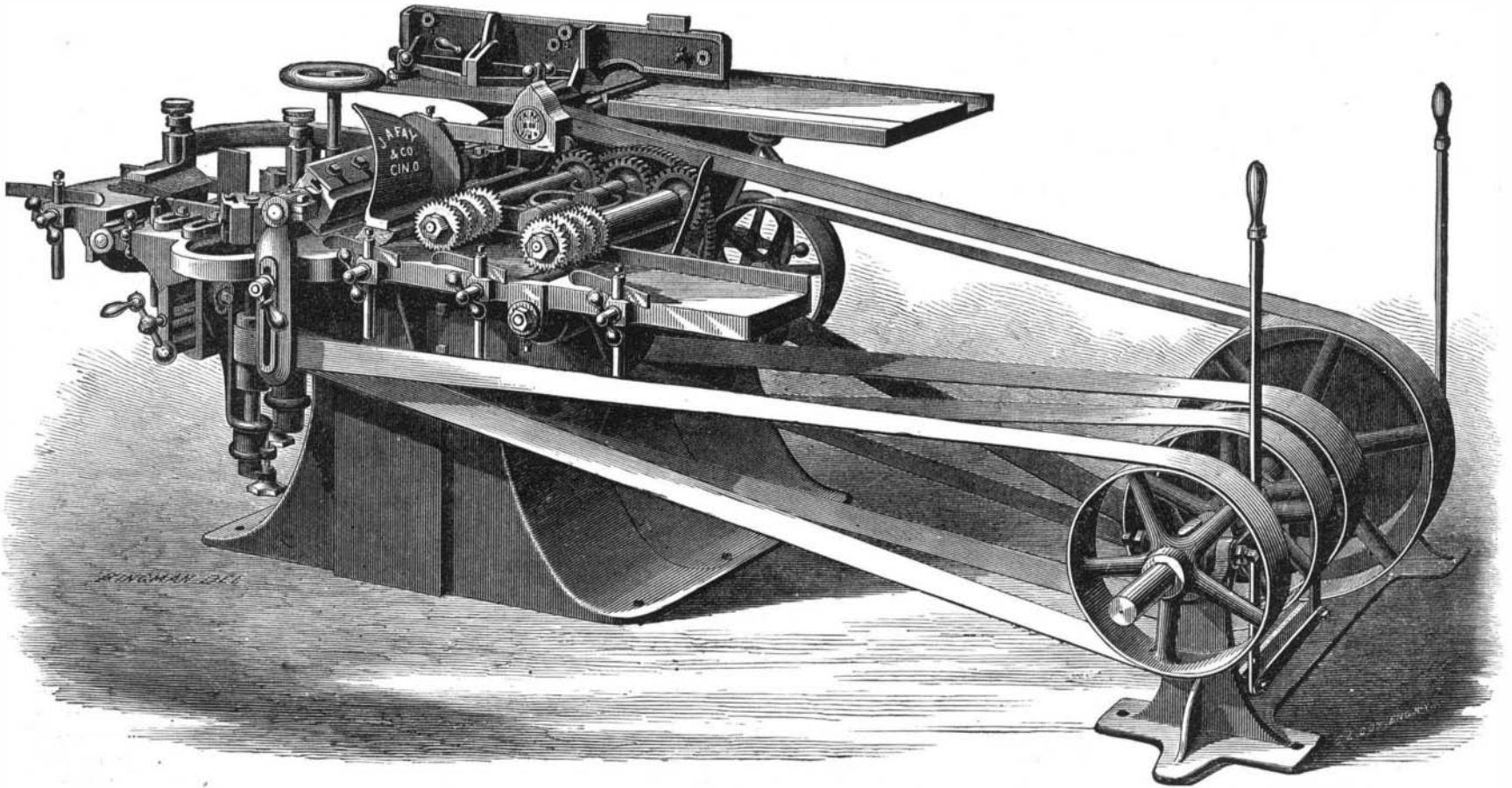
A growing demand is noticed among manufacturers in wood for machines combining the functions of several different tools in one, thereby economizing space in the factory and capital in investment. These machines are, from the great range of work for which they are adapted, known as universal woodworkers.

In the manufacture of builders' material, sashes, doors, etc., as well as in the production of furniture, agricultural

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 manufactur-

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 Build-



**J. A. FAY'S UNIVERSAL WOOD WORKER.**

plements, 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

ers, 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, bevelling, 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

ings, section B 8, columns 61, 62, 63. Any desired information will be furnished on application to the manufacturers, Cincinnati, Ohio.

[This description was published in our issue of August 19, the other engraving being, by an inadvertence, published therewith.—Eds.]

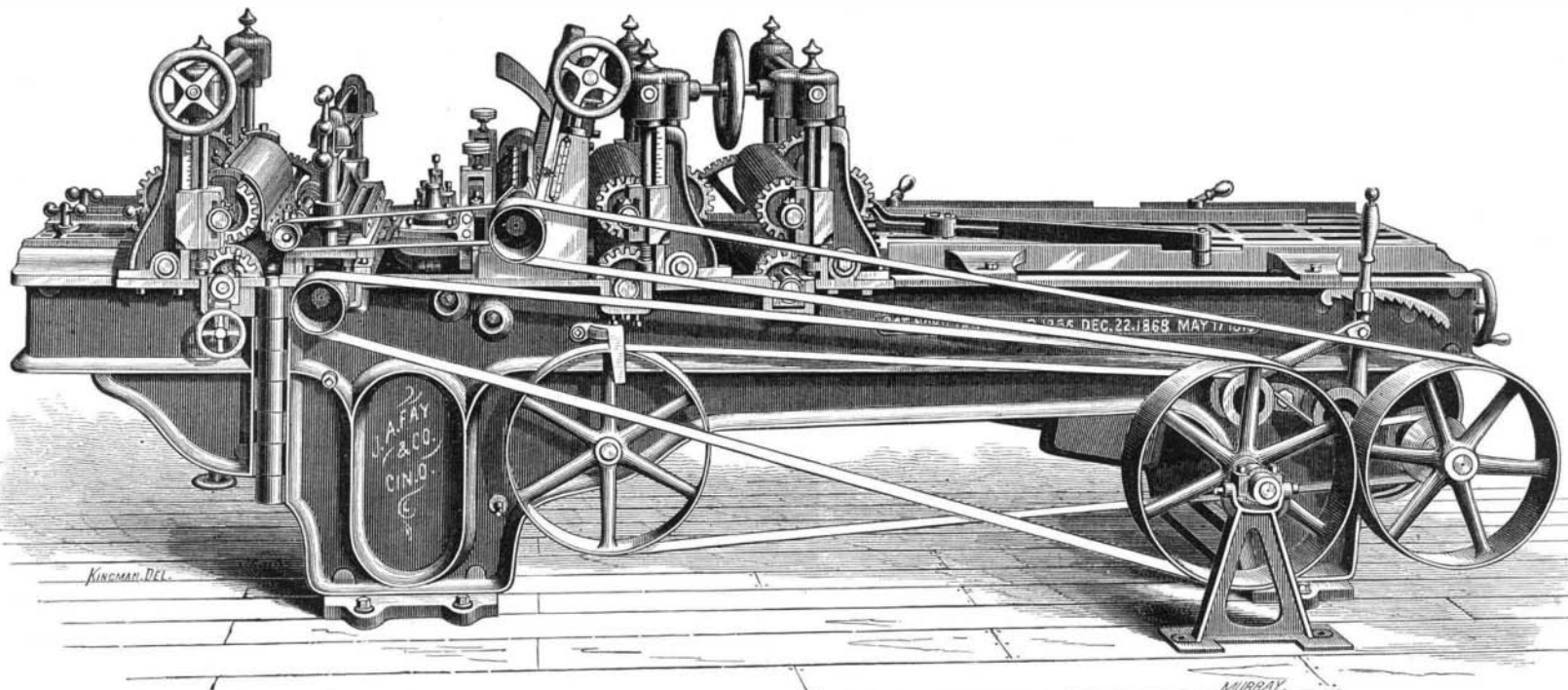
**IMPROVED SIX-ROLL PLANER, MATCHER, AND BENDER.**

Changes in machinery for working wood are so numerous and important in their effect on the trade that we feel justified in giving those who are interested in this class of tools the fullest opportunities of information in regard to any new machines of value which may be produced.

The machine herewith illustrated is manufactured by the well known wood tool builders, J. A. Fay & Co., of Cincinnati, Ohio. There are two cylinders, one for planing the upper surface of the board, and one for the under surface, each having two driving belts and three knives twenty-six inches in length, and being fitted with steel journals, and steel lips for chip breakers.

The two vertical sideheads are of gun metal, each having three cutters, and are adjustable for different widths of lumber to be jointed or tongued and grooved. They are also arranged to drop vertically below the bed to admit of surfacing the full width of the knives without removing the heads from their spindles.

The feeding mechanism consists of six rollers, six inches



**J. A. FAY & CO'S SIX-ROLL PLANER, MATCHER, AND BENDER.**