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Improved Universal Wood Working Machine.

A primitive form of this machine was illustrated on page 79, Vol. XXIII., of this journal. In the machine, as herewith illustrated, the essential and valuable features of the original invention are retained, while its scope is so much enlarged that it probably performs a greater variety of work than any machine now in use, and the character of the work is very perfect, as shown in a large number of specimens sent to this office.

The specimens illustrate the following kinds of work, namely: squaring, planing out of wind, beveling, cornering, rabbeting, gaining and plowing, planing tapered sticks, gaining $4\frac{1}{2}$ inches in width by $3\frac{1}{2}$ inches in depth (done at one cut) gains cut so close to others as to leave only a mere film of wood between them, plowing and gaining with the same cutter head, gaining at different angles, glue joints of newel posts, mitering, tongueing, and grooving, rolling joints, table leaves straight molding (several specimens in hard and soft wood), circular and elliptical molding, raised paneling, (the panel being raised on both sides of the piece at one operation),

journals for agricultural machinery, picket pointing, gaining cuts made in one operation for journal boxing of different shapes, routing for bed post irons, window sash, light molding, etc.

The machine differs from the one illustrated in our issue of August 6, 1870, in the following particulars:

The present machine is made entirely of iron and steel. It has a "sticker" attachment to plane one, two, three, or four sides at one operation, so that, as now made, it may be run with five heads, one of them on the front side, for the same purpose as stated in our former article, and four on the sticker side for the various purposes to which a "sticker," or molding, machine is applicable.

The feed of the machine is made stronger than formerly, and is improved in other respects, making it now, it is claimed, the best parallel feed in use.

The position of the outer side head is so changed that the belt pulls against the boxes, and not against the cap, as is generally the case with other stickers, by which means the side head is held steady and makes a smoother cut.

The drop of the sticker bed has been much increased, having now a depth of eighteen inches.

We may add, to what we have said above, with reference to the variety of work done by this machine, that our enumeration does not comprise all that is done by it. There is scarcely a shape in which it is desirable to form wood in carriage making, car building, or furniture manufacturing, which is beyond the limits of its capacity.

Referring now to the engravings, Figs. 1 and 2 show obverse sides of the machine. We must of necessity omit many of the details, but will point out some of the principal features of construction.

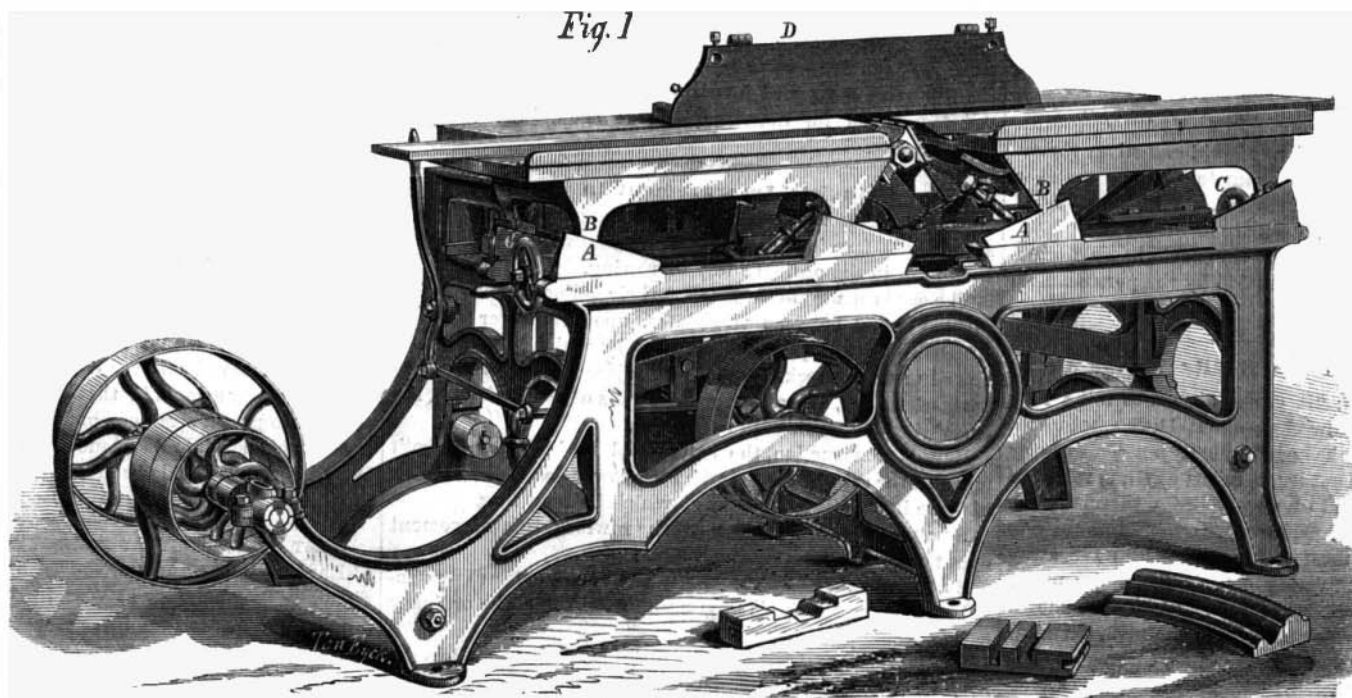
In Fig. 1 the vertical adjustment of the tables is shown, this being accomplished through the action of inclined planes, A, simultaneously and equally moved by handscrews,

C. Upon these planes rest the inclines, B, which support the table. D is the fence made of iron, and capable of adjustment to any angle with the table. It will be seen in Fig. 1 that there are two independent tables, one on each side of the cutter head, so that the piece to be planed rests on a solid surface on each side of the cutter bits, and is thus planed out of wind. By adjusting the fence properly, any bevel may be planed.

The sticker side of the machine, shown in Fig. 2, is pro-

operation, and the economy of bench work it accomplishes.

By changing the heads of the machine, it is readily adapted to the kind of work required, thus obviating the necessity of carrying the material to different parts of the shop to be worked. The machine is covered by several patents, all obtained through the Scientific American Patent Agency. For purchase of rights or machines, address McBeth, Bentel & Margedant, manufacturers, Hamilton, Ohio.



McBETH, BENTEL & MARGEDANT'S UNIVERSAL WOOD WORKING MACHINE.

vided with boring, routing, and other attachments for performing the various kinds of work above specified.

The manufacturers also make an universal wood worker with boring and routing attachment, without the sticker attachment.

The machine herewith represented has been used with great satisfaction in some of the best shops in the country, some manufacturers having purchased several machines for the same shop, after a trial of one. Among a large number of testimonials submitted to us, is one from the Barney & Smith Manufacturing Company, of Dayton, Ohio, an extensive car building firm, in which they say they consider that any one of the three machines they have purchased (the first in 1868, the second in 1869, and the third in 1870) paid for itself in the first four months of its use. The machines are

18 carat wire, and kept in motion till the liquid begins to sink; then they are taken out and dipped in aquafortis pickle. The color will rise again, and then another dip, and sometimes two, is necessary to give the proper color. The wet color process is a much inferior method, except for gold of lower standard, and then not below 15 carat, as the alloy would suffer so seriously from the coloring. The fact is, coloring is no more than taking from the surface the inferior metals, leaving a thin coating of pure gold.

Breadstuffs and Cotton Imported into Great Britain.

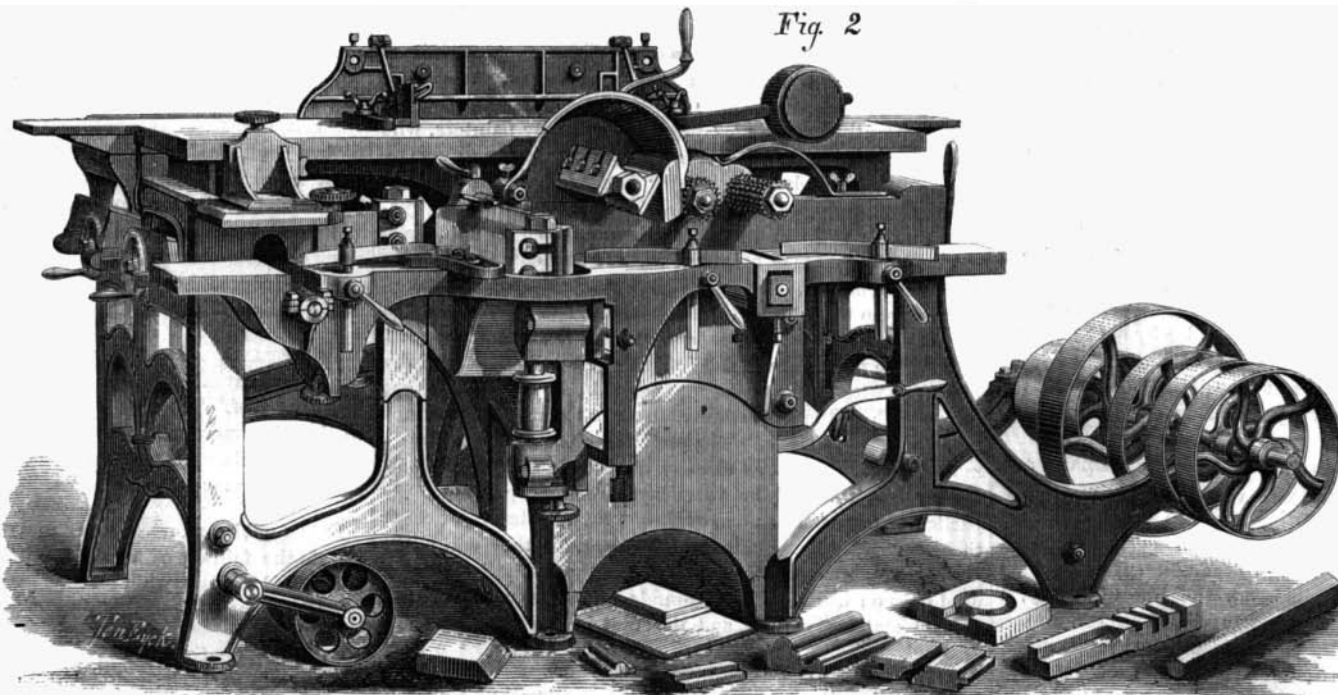
The breadstuffs received by Great Britain during the half year ending June 30, 1871, were of the value of £16,170,861, being an increase of about 12½ per cent over the corresponding

period of last year. The importations were derived as follows: From Russia, 40 per cent; America, 38 per cent; Germany, 9 per cent; Canada, 5 per cent; Turkey, 4 per cent; Austria, 1 per cent; Chili, 1 per cent, and other countries, 2 per cent. Compared with the first half of each of the preceding two years, Russia and Canada figure for a large increase, while Germany shows a decrease. The United States show a decrease from last year, but a large increase of 1869.

The importations of cotton for the first half of the present year have amounted to 9,708,245 cwts, at a cost of £33,506,876 while in the corre-

sponding half of last year they were only 5,895,116 cwts, at a cost of £30,695,672. Thus an additional 65 per cent of material has been received at an additional cost of only 9½ per cent. Of the entire total, 73 per cent has been contributed by the United States, 13 per cent by India, 9 per cent by Egypt, 4 per cent by Brazil, and 1 per cent by other countries.

PREFER loss before unjust gain, for that brings grief but once, this forever.



used extensively in furniture and cabinet factories, car building, carriage and wagon manufacturing establishments, etc.

The advantages claimed for this machine are the great variety of work it will perform, the ease with which it can be adjusted, the accuracy of its performance, its strength, durability, and simplicity, its capacity to take the place of several distinct machines (while costing far less than the several machines whose place it fills), its power to plane light or heavy stuff out of wind and finish it at the same