



*Machinery used in the Manufacture of Lumber, Staves, &c.*—There is in the Exhibition a very good show of this class of machinery. The lumber interests of our country are indeed among the most important, and the ingenuity of our mechanics has been employed in fostering it, by removing many of the most tedious processes of its manufacture from the routine of manual labor. Time was when the weary laborer with the pit-saw, the jack-plane, and the drawing-knife, performed all these operations; a description of the machinery we have been this week examining will be a suffi-

cient commentary on the change which has taken place.

*Saws and Saw Mills.*—George Page & Co., of Baltimore, Md., exhibit a circular saw-mill in which there are two saws, one directly above the other. These saws are at the side of the carriage, and the log is lodged at the side opposite the saws. We should think this a very good portable saw-mill: it is intended to be propelled either by horse or steam power. By the side of this stands another exhibited by John Stull, of Wellington, Md., having a single saw working above the log. Joseph Harris exhibits a circular saw which is propelled by a friction wheel covered with leather instead of gearing or belting. Charles W. Bemis, of Waltham, Mass., is the manufacturer and exhibitor of a string and a circular saw, which are operated by Parker's method of banding, illustrated and described in the last Volume of the "Scientific American." The string saw is stretched between two working beams, thus dispensing

with guides, and by its arrangements is enabled to turn pretty nearly as short around a corner as the politicians of the present day.—Some pieces of boards sawed by it and hung upon the wall are stared at with wonder by many of the passers by. E. H. & S. E. Parsons, of Wilkesbarre, Pa., exhibit a working model of a saw mill, the chief peculiarity of which consists in the mode of hanging and straining the saw. It is attached at the top and bottom to cross-heads, placed longitudinally with the cut of the saw, the front ends of which run between slides; the saw is strained by the friction of the slides above and the action of the pitman beneath, the notable pin being placed just in front of the line of the teeth, thus straining the saw most at its front edge. We are disposed to think favorably of this arrangement.—There are a few other circular saws, in which we could discover no peculiarities worthy of note.

*Planing Machines.*—John Gibson, of Alba-

ny, N. Y., exhibits one of Woodworth's machines. Our readers are all aware of the litigations to which this patent has given rise, but as it expires in 1856, we shall then have an end of them unless the proprietors succeed in smuggling another extension through Congress. This machine is too well known to need description. It has proved itself a valuable invention, both to the public and its owners. Mr. Gibson also exhibits an excellent wood moulding machine. Dunkin & Van Sicklin, of this city, exhibit one of Barlow's patent planing machines, illustrated in the "Scientific American" Vol. 6, page 372. The knives in this machine are vertical, and have a vertical motion in pairs as the board is drawn through the feed rollers. A drawing cut is thus obtained, which enables the machine to work knotty or wet lumber without difficulty. Barlow & Wellington, 551 Broadway, New York, are the proprietors of the patent; the operation of this machine is well spoken of. George W. Bearslee, of Albany, N. Y., has a fine working

GROUP OF ORNAMENTAL PLATE.



model of his machine, which is fully described, with an engraving, in No. 3, Vol. 7, "Scientific American." One of its chief peculiarities consists in the novel arrangement of a sectional endless platform, which is carried forward by pinions from one end of the machine to the other, and returned, presenting a continuous vertical bed against which the lumber rests as it passes through the machine. It also embraces a yielding stock or cutter kept in its place by a spring, thus enabling the cutter to yield in passing over a knot or other inequality. A large number of these machines are now in successful operation, and are giving abundant proof of the value of the invention. He also exhibits a matcher which is used in connection with the planer. Theodore Titus exhibits one of Wilder's planing machines, illustrated in No. 28 of our last Volume. This machine differs from the others mentioned, in having the knives placed horizontally, and in a reciprocating frame, by the backward motion of which the board is drawn in. While the planes are acting upon it, it is held by clamps to the main bed. There is a table at the rear end of the machine, upon which are knives for matching the lumber if required. A. A. Wilder, of Detroit, Mich., is the patentee and proprietor. We have never witnessed the operation of this machine, but understand it to be excellent.

*Mortising, Tenoning, and Boring Machines.* &c.—Otis & Cottle, of Syracuse, N. Y., exhibit a mortising and boring machine, improved somewhat from the one illustrated in No. 29 of our last volume. It is certainly a well constructed, and we should think a durable and efficient

machine. They also exhibit a hub-mortising apparatus, which is an implement, we think, no wagon-maker can afford to be without. We saw a specimen of its work, and we should judge they might safely challenge any workman to compete with it. M. & J. H. Buck, of Lebanon, N. H., have a mortising and a tenoning machine, but no attendant to exhibit their operations. J. A. Fay & Co., of Keene, N. H., have a foot mortising machine; a tenoning machine with rotary cutters, readily adjustable to any size of tenon, and a sash sticker, all of which perform well. J. Adams & Son, of Amherst, Mass., exhibit a felly machine, illustrated in No. 5, Vol. 6, "Scientific American," having vertical cutters attached to a rotary arm in such a manner that they are easily moved from or towards the center of rotation, in order to cut a felly of any required degree of curvature. They are thus left perfectly smooth and true upon their curved surfaces, requiring no after dressing to fit them for use. The proprietors state that it will cut 60 fellyes per hour.

Allen, Sherwood & Co., of Auburn, N. Y., have in the Exhibition a prismatic lathe for turning bea'stads, table legs, and other similar articles of a hexagonal, octagonal, or other prismatic shape. It was fully illustrated in No. 34, Vol. 7.

Davis' Corner Dovetailing Machine, is the name of a machine for cutting a peculiar kind of dovetail upon the end of a board, preparatory to its being joined with another in the formation of a box, drawer, or other cabinet work. This is also unattended.

There is also a lathe manufactured by Charles Stuart, a lad of this city, fourteen years of age,

which certainly does credit to his skill as a workman. It is a small lathe, for light work.

We now come to a class of machinery that threatens to drive into other employments a numerous class of mechanics, viz., the cooper: we allude to the

*Stave and Barrel Machinery.*—Gwynnes & Sheffield, of Urbana, Ohio, exhibit the Mowry stave machine, it is made entirely of metal, is simple and durable, feeds itself from a bolt of wood (previously steamed), and joints the stave at the same time that it is dressed. There is one objection, however, the same bilge is cut upon a wide stave and a narrow one. Engravings and a full description of this machine was published in No. 30, Vol. 8, "Scientific American." Hawkins' stave dressing machine is illustrated on our first page, this week, so that any remarks here are unnecessary, further than to say that we have seen it at work and it does its duty faithfully.

But while the above are great improvements over the old modes of dressing staves, there are two sets of machinery for performing all the operations of making a barrel except setting up and hooping. W. Trapp & Co., of Elmira, N. Y., are the exhibitors of one of these. The timber is taken in the bolt and presented to the first machine, which saws the staves hollowing to correspond with the size of the board, it is then sawed the proper length, next planed inside and out perfectly smooth (if the timber is good), is next jointed with its proper bilge, is chamfered, howelled, the croze is cut, the head turned, and all is ready to be set up in a barrel.

C. B. Hutchinson's stave and barrel machine-

ry differs considerably from the preceding. Like Mowry's it cuts the stave from steamed bolts, but this is done in a different manner, as the stock moves not only downward, but longitudinally, thus communicating a drawing motion to the knife. The staves are afterward jointed by the action of two circular saws, which are hung in such a manner as to permit the proper bilge to be given the staves, the bilge varying with their width. They have also another machine for crozing and chamfering, and yet others for cutting and turning the head. This machine was illustrated in No. 2, Vol. 5. The inventor's residence is in Syracuse, N. Y.

It would be invidious for us to speak comparatively of these different machines, nor is there any reason why we should; we will only say that when there are so many efficient machines of this kind, those who continue to manufacture barrels entirely by hand are certainly behind the times, and we advise all such to send without delay to some one of the above-named gentlemen and get a machine which will do their work efficiently, in a fraction of the time now required.

We at length have a reliable catalogue of the Exhibition. It contains a full list of the minerals and the pictures. And we will here remark that we find ourselves wholly unable to carry out our plan of giving a description of the statuary and paintings, as we are told the Exhibition will close about the middle of December.

Our engraving this week represents a group of plate, selected from the articles exhibited by Joseph Angell, of London.