TAYLOR MANUFACTURING CO.'S PATENT SAW MILL.

(*Continued from first page.*)

ning in self-oiling boxes, and carrying heavy 8-inch wheels or rollers, which run on continuous T-rails. The extensions on each end of the carriage, which are 8 feet long in this size mill, are so arranged that they cannot spring out of gear, thus preventing stripping the feed pinion, and also allowing the sawing of lumber eight feet longer than the carriage. This is very convenient for backing the carriage to receive the log. It is an improvement that any one familiar with saw mills will appreciate. (See Fig. 3, page 259, vol. xlvii., SCI. AM.)

The log beam is moved by a lever with a simple ratchet arrangement for moving elbows of head blocks, or, as shown in cut, by crank wheel. The advantage of the crank wheel over lever is that no motion is lost, and that the log beam recedes continuously or goes forward, as is desired, is rapid, and easily handled. The gauge roller is a simple and ingenious device recently patented, and is so constructed that all wear or lost motion is provided for, and can be set to saw a thirty-second full, or a thirty-second scant, if desired. By it the log is pressed against the log beam, and as the carriage moves up to the saw, the log passing between the gauge roller and beam, it will be seen that lumber must be sawed true. By this mode of holding the log at the end next to the saw no dogging is required, the dog at the rear end being the only one necessary to hold the log to its place. We are informed that this gauge roller can easily be applied to other mills if desired.

The frame of this mill is very heavy, and is made in girder style, and so arranged as to set the carriage on either the right or left hand of the saw frame; the feed is a friction feed, with face 7 inches in width; feed belt is also wide, carrying a 5-inch belt. The main mandrel is made long (9 feet), so as to use the drive pulley on the outside of frame. It is of the best hammered steel, 3½ inches in diameter, and runs in three adjustable bearings, each 12 inches in width. The frame is made to take a saw up to 72 inches in diameter. The top frame is made very stiff and heavy with adjustments, by which the top saw can be lined to suit the bottom saw. It carries a saw up to 36 inches. It has an adjustable belt tightener to drive top saw when desired, and can be used while the machinery is running. This mill, with 48 feet of carriage, one dogging block, and four log beam blocks, weighs 12,000 pounds.

The company manufacture four smaller size mills—Nos. 2, 3, 4, and 5. Nos. 3, 4, and 5 mills have no top saw. Their No. 5 Plantation saw mill was illustrated in the SCIENTIFIC AMERICAN of December 16, 1882. This company also build cut-off stationary engines of various styles, from 12 to 250 horse power; also dry steam portable engines, from 8 to 40 horse power; and vertical engines, from 5 to 10 horse power.

For further particulars address Taylor Manufacturing Company, Chambersburg, Pa.

Weak Electric Currents.

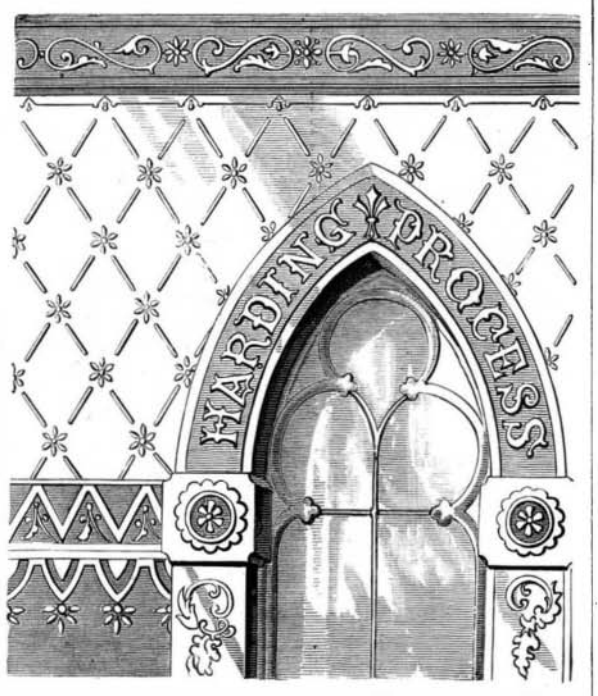
Dr. Hertz lately described and exhibited before the Physical Society, Berlin, an apparatus he had constructed for demonstration of such weak electric currents as change their direction very often, several thousand times in a second. He called attention to the defects of the electro-dynamometers previously employed for the purpose, and showed that the electric heat effect could most fitly be used in this case. The new dynamometer consists of an extremely thin horizontally stretched silver wire, the extension of which by heat, produced by the alternating currents, is observed. To this end the wire is, at its middle, wound round a vertical cylinder of steel capable of rotation about its axis, by turning of which the wire is stretched. Each extension of the wire through electric heating turns the cylinder the opposite way to this torsion, and its rotation is observed by means of a mirror and telescope. This dynamometer, as Herr Hertz showed, is only applicable when the currents are weak, and the current reversals are very frequent; that is, precisely in cases where other measuring instruments fail.

An Enormous Tumor.

A recent number of the *Medical Record* contains engravings from photographs of a woman who was afflicted with a tumor weighing eighty pounds. It was attached to the abdomen, and the picture shows the patient in a sitting posture, holding in her arms and on her knees a large bundle, which formed her undesirable appendage. After much entreaty from the poor woman that an operation for her relief might be tried, the surgeons of the Cincinnati Hospital finally consented; and Dr. N. P. Dandridge performed the hazardous work with great skill, being assisted by Dr. E. W. Walker and the hospital staff, in the presence of the medical class and a large number of neighboring physicians. But the shock to the patient was very profound, and her inherent strength not sufficient. She survived a week after the operation. This was a subcutaneous fatty tumor, one of the largest ever known. It was 35 inches long and 67½ inches in greatest diameter—nearly as large as a barrel of flour.

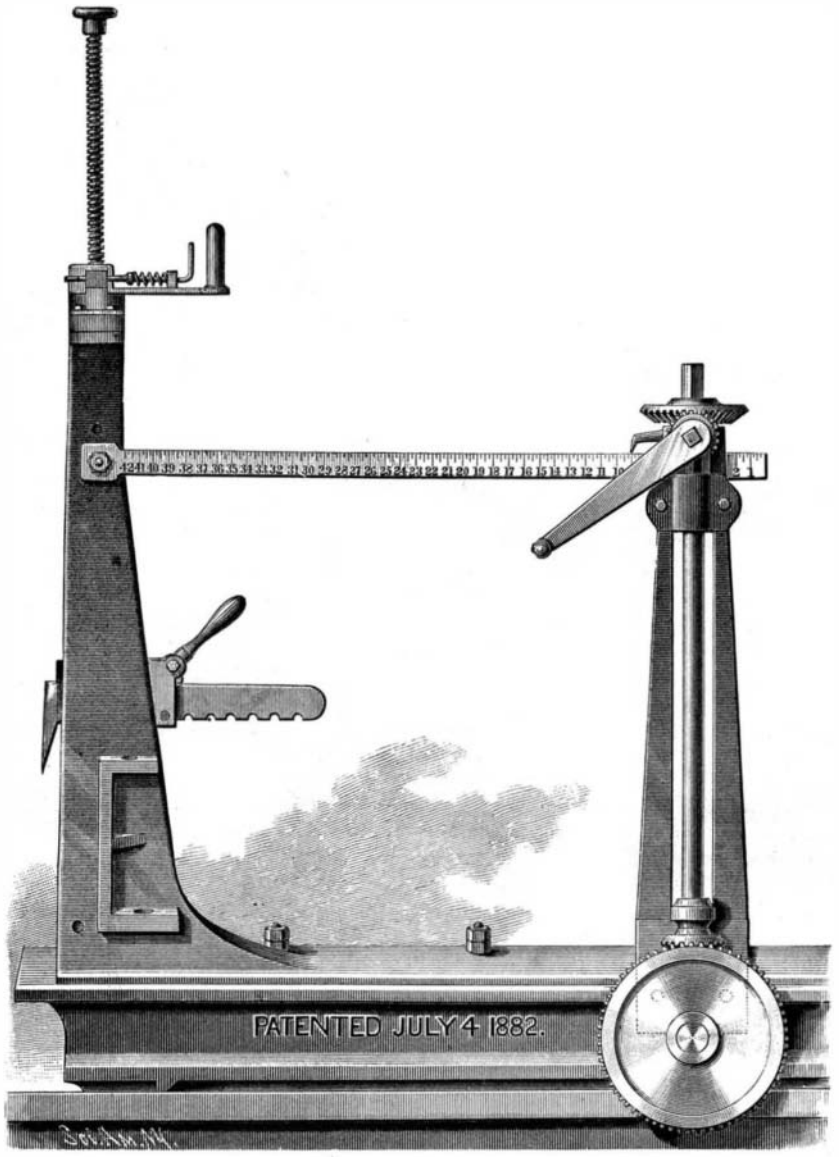
THE HARDING PROCESS OF EMBOSSING ON WALLS.

The number of house owners able to decorate their dwellings with mural carvings is few compared with those who are able to appreciate such home adornments and would be glad to have them. In this, as in many other instances, popular taste has run ahead of the capacity of the average purse to buy. Accordingly, the invention of means by which genuine artistic effects in raised figures can be produced cheaply, almost mechanically, yet allowing the utmost freedom of choice or individuality in design, finds a numerous public ready to welcome it.



THE HARDING PROCESS OF EMBOSSING ON WALLS.

The new process of mural decoration, illustrated in the cut, is as simple as it is admirable in its effects. The designs, which may be varied unlimitedly to express the taste or fancy or purpose of the occupant of the apartments to be decorated, are drawn upon suitable material and cut into stencils. The plastic substance to form the raised figures is applied to the wall through the openings of the stencil, the thickness of the stencil material determining the height of the figures. By laying one stencil over another, any details of the figures may be raised to any height desired. The figures are thus part of the solid wall, at once relieving its dead flatness and furnishing an admirable foundation for color effects. Most beautiful results can be arrived at by artistic manipulation. The great advantage of this process over moulding or stamping lies partly in the low relief of the ornaments and in their applicability to old as well as new walls, without the aid of glue or paste to hold them in place (thus obviating decomposition in presence of damp and making it one of the healthiest decorations), but more to the circumstance that the freest expression of individual invention and preference may be enjoyed without adding to the cost of the work. Any plastic material may be used, and applied to curved as well as flat surfaces. Specimens of this work are exhibited at Caryl Coleman's art rooms, 821 Broadway, New York city. The inventor is Mr. J. H. Harding, Milwaukee, Wis.



HEAD BLOCK.—TAYLOR MANUFACTURING CO.'S SAW MILL.

Supreme Court Decisions.—The Clough Gas Burners.

Among the patent cases recently decided by the United States Supreme Court are two between Theodore Clough and the Gilbert & Baker Manufacturing Company. The first was a suit brought by Clough against the manufacturing company for infringement of his patent upon an improved gas burner. The claims of the Clough patent were sustained, and the decree of the lower court reversed. The second suit was brought by the Gilbert & Baker Manufacturing Company against Clough for alleged infringement of a patent on improvements in gas burners granted to John P. Baker, July 26, 1870.

The court held that while the Baker patent covered new, useful, and patentable modifications, it yet clearly infringed the claims of letters patent granted to Theodore Clough, July 26, 1870. Both opinions were by Justice Blatchford.

Preparation of Spongy Tin.

Tin precipitated from its salts by means of zinc is chiefly employed in making silver paper and printing textiles. It ought to be very light, of a bright gray color, and cover well like white lead. The following process for making a preparation having all these properties is described by C. Puscher in *Kunst und Gewerbe*:

Dissolve one part of tin salt in 400 parts of water acidified with hydrochloric acid. A rod of zinc is put in this solution and the precipitated tin, most of which floats on the surface, is carefully collected on a sieve without pressing, washed with water, and dried by warming. The tin sponge thus obtained can be readily pulverized in a mortar with water, and floated on a hair sieve without acquiring a metallic luster. After triturating well with starch paste it is ready for use in making silver paper, or in printing textiles. The small quantity of tin sponge that remains on the sieve is dissolved in a mixture of equal parts of water and hydrochloric acid, and used to mix with the next solution of tin salt instead of acid. The same liquid can be used from ten to thirteen times in making tin sponge by repeated additions of tin salt. The zinc chloride thus accumulated can be concentrated by evaporation, and used in soldering or in cleaning iron ware that is to be tinned.

Instead of using it as above, the tin sponge can be dried and ground to a fine gray powder and employed as an efficient and economical means of tinning all other metals except lead. For this purpose the tin powder is rubbed up into a paste with a hot saturated solution of sal ammoniac, and the metal to be tinned is painted with it. This is repeated according to the amount of tin it is desired to deposit on it, after which it is heated over a spirit lamp or a Bunsen burner. The tinning is effected in about one minute; it is only necessary now to wash the article and polish it with chalk to give it a good polish. This process can also be used to mend spots that have been formed on tinned articles, or to make white drawings on other metals.

If the spongy tin is mixed with 5 to 10 per cent of reduced antimony and 5 per cent of powdered sal ammoniac and a little water, the paste can be applied as before, and produces a still whiter and harder coating of Britannia metal.

Reduced antimony is obtained as a black powder by dipping a rod of zinc into a solution containing equal parts of antimonic chloride and water, to which, however, enough hydrochloric acid is added to dissolve the white precipitate first formed. The black precipitated antimony is collected on a filter, well washed with water, and then dried.

The spongy tin above described is sold in Germany, says our informant, at five marks per kilogramme, which is about 57 cents per pound.

AN international exhibition will be opened in Calcutta next December, and will close on February 29, 1884.