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[NEW SERIES.]

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## Machine for Turning the Ends of Axletrees.

Our engraving gives a very good representation of a machine for turning the ends of axletrees. It is said it will turn the ends to fit thimble skeins in a most accurate manner. The general principle of the machine convinces us that it must work satisfactorily, in which opinion, we doubt not, practical wagon manufacturers will concur.

The bed of the machine rests on suitable legs. On this bed are placed a head stock and spindle, carrying a cutter head and pulley for driving the same. The bed also supports a carriage for the axle, the ends of which are to be turned. The carriage runs on suitable ways, by which it is fed up in line with the cutter head, the feeding being performed by a rack and pinion movement, placed in the central space of the bed piece, and actuated by a short countershaft and a hand wheel placed at about the middle of the machine, as shown.

At each end of the carriage are clamping jaws drawn together by hand screws, as shown. The axle being held firmly in these jaws is fed up to the cutter head by turning the side hand wheel, as above described.

The cutter is made on the same principle as the tool ordinarily used by wagon makers for turning spokes.

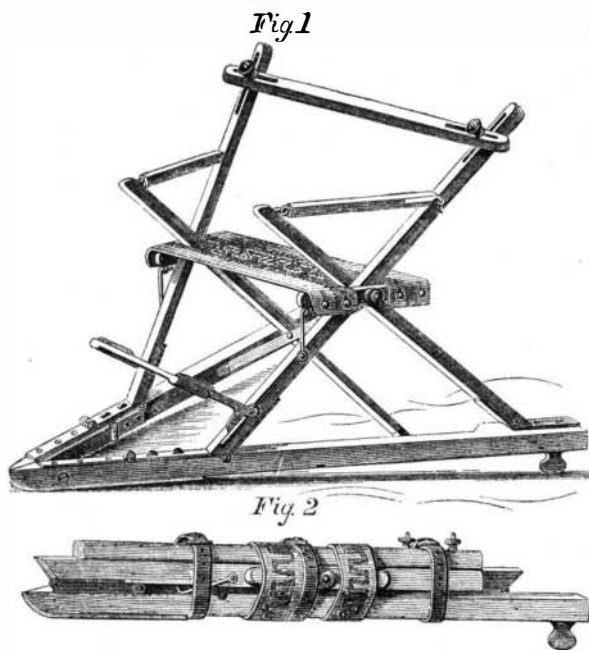
This tool is said to cut knotty or crossgrained wood smoothly. The method of adjusting the clamping jaws permits adjustment to secure the proper gather and pitch in the wheels, while the axle is cut to the exact length required. Of course the machine, being once set, will cut all the axles alike, so that the same gather and pitch will be obtained on all.

The machine is stoutly built entirely of iron, and weighs 1,000 pounds. The manufacturers claim that it will turn out 200 axles in 10 hours.

Patented June 8, 1869. Address, for further particulars, A. Booth, Son & Co., manufacturers of carriages, buggies, and wagons, Springfield, Ill.

## SCHOPP'S PUSH CHAIR OR ICE VELOCIPEDE.

Our engraving shows a push chair, styled by its inventor and patentee, Philip J. Schopp, of Louisville, Ky., an "ice velocipede." It is a cross between a camp chair and an ice boat, and is constructed so that it may be folded into very small space, as shown at the bottom of the engraving.



The seat is flexible, and may be made wide enough to accommodate two or more persons. A convenient support for the feet is also provided, as shown in the principal figure in the engraving, representing the velocipede in readiness for use.

The bottom frame is triangular, like that of the ordinary ice boat, the apex of the triangle resting upon a skate runner, while the rear corners run either on skate runners or rollers

(the former being preferred), making it very easy both to propel and guide. Loaded to its full capacity it may be pushed at rapid speed by a single skater, who only employs one hand to push and guide it. A boy ten years old may, it is stated, push it easily when an adult occupies the seat.

The back rail offers a capital support for ladies while learning to skate.

By the use of a double hinge the runners may be made so that they can be set parallel for use on the streets.

On the whole, we judge this invention will be received

and placed on one side to be submitted to the final processes.

## A Foreign Tribute to American Mechanics.

A few weeks ago the London *Times*—universally considered the ablest and most influential paper in all Europe—published the following significant comment on the wane of British manufactures:

"At this moment, Birmingham is losing its old market. A few years ago it used to supply the United States largely with edged tools, farm implements, and various smaller wares. It does so no longer, nor is the cause to be sought merely in the American tariff. It is found that the manufacturers of America actually supersede us, not only in their own, but in foreign markets and in our own colonies, and the Birmingham Chamber has the sagacity to discover, and the courage to declare, that this is owing to the superiority of American goods.

"High as are the wages of an English artisan, those of an American artisan are higher still, and yet the manufacturers of the United States can import iron and steel from this country at a heavy duty, work up the metal by highly paid labor, and beat us out of the market after all with the manufactured articles. How is that to be explained?"

"The Americans succeed in supplanting us by novelty of construction and excellence of make. They do not attempt to undersell us in the mere matter of price. Our goods may still be the cheapest, but they are no longer the best, and in the country where an ax for instance, is an indispensable implement, the best article is the cheapest, whatever it may cost. Settlers and emigrants soon find this out and they have found it out to the prejudice of Birmingham trade."

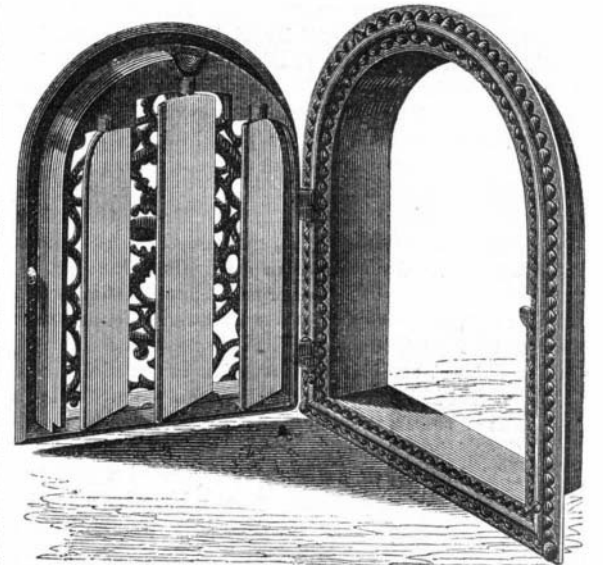
## YOUNG'S IMPROVED HOT AIR REGISTER.

This invention is an illustration of the fact that a very slight change in form will sometimes add greatly to the utility and convenience of articles in common use.

The engraving shows the nature of the improvement so clearly that no letters of reference will be required.

The first improvement consists in hinging the register to a frame, as shown. This permits the removal of dust, and allows the register to be swung open, so that the feet can be placed in the flue for warming them. Also articles for the nursery and sick room can be set therein and conveniently warmed.

The second improvement consists in attaching the exterior frame molding, by screws, to the retreating part of the frame which is set in the arch; one screw being placed at



each lower corner and one at the middle of the arch at the top, as shown. This allows the front molding and register to be attached after the plastering and painting is done in new buildings, so that its finish is not marred by droppings from the brush or trowel. It also admits of taking off the register and front molding during the process of house cleaning. The application of these improvements does not affect the general ornamental design of such registers. Pat-

## MACHINE FOR TURNING THE ENDS OF AXLETREES.

with favor by all fond of ice sports. The entire apparatus, when folded, strapped together, and placed in a suitable canvas bag, weighs only about five pounds.

It is covered by two patents dated as follows: February 9, 1869, and October 18, 1870.

For further particulars, address Philip Schopp, 445 Jefferson street, Louisville, Ky.

## International Exhibition in London.

The exhibition is now in full operation, and attracts much attention; but it is not a mechanical exhibition. Textile and pottery subjects are among the principal industries that are represented. Says *Engineering*:

Conspicuous amongst the machinery in motion connected with the pottery department, is Pinfold's brick, tile, and drain pipe machine. This latter, to which the first prize of its class was awarded at the Oxford meeting of the Royal Agricultural Society, cuts the clay as it is carried forward on an endless band, in a continuous stream from the pug mill, by means of a series of radial wires stretched upon a large wheel, which travels at the velocity required to cut the bricks to size, and which is set at an angle, to counteract the forward motion of the clay, and to insure a square cut. The several potters' wheels exhibited attract great attention, owing, however, to the fact that operators are constantly at work on the wheels, molding rapidly with skilful fingers, and with enviable facility, vessels of all descriptions. The manufacture of tobacco pipes is shown, Mr. W. T. Blake and Messrs. Southern & Co. being the exhibitors, and the operators show as much dexterity in producing these articles of universal use, as do the potters near them.

Thirty gross of short pipes is the average production of each man's work during six working days of ten hours each, being at the rate of seventy-two per hour. Of course this does not include the production of the clay blanks, nor the subsequent trimming of the edges which is required, but it comprises the various operations of piercing the blank stems, covering them with a coating of paraffin, placing them in the mold and lever press by which the bowls are shaped and hollowed out, and cutting out the dead head of clay which is squeezed out by the press.

Minton & Co.'s stamping press for producing mosaic bricks is worth noticing. Slabs from 1½ inches square, used for flooring tiles, down to the minute pieces employed for delicate mosaics, are made here. The machine is a vertical screw press, in which are fitted dies corresponding to the size and shape of the small tiles required; for the smaller sizes four or five dies are grouped together. These dies, when they are depressed, pass through openings in a circular metal table into matrices below. The clay, finely pulverized and colored by different pigments, as desired, is heaped upon the table, and a small portion is swept into the matrices by hand at each downward stroke of the press. With the backward stroke, by a motion of the foot of the operator, the matrices are raised, and the slabs of compressed clay are thrown out