

**A SNOW AND ICE VELOCIPED.**

A machine resembling an ordinary safety bicycle, and driven in the same way, but which is adapted for use on either snow or ice, is shown in the engraving and has been patented by Mr. Jonas Schmid, of No. 607 East Sixth Street, Erie, Pa. The frame is preferably tubular, for the sake of lightness, and its rear end terminates in an axle on which are pivoted bearing blocks secured to the top of a runner aligning with the

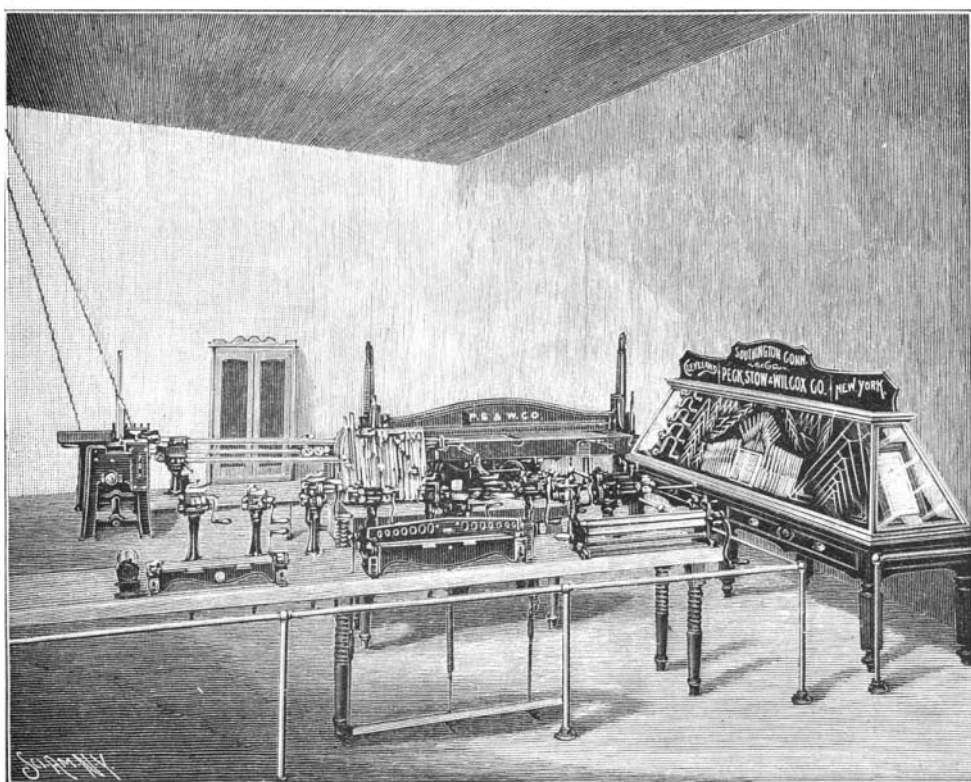


**SCHMID'S SNOW AND ICE VELOCIPED.**

driving wheel. On the front end of the frame, in a ball bearing, is a sleeve through which extends the steering post, at the lower end of which is a curved runner, its shape enabling it to be easily turned in steering. The driving wheel has a thin steel rim with projecting teeth to get a good grip in the snow or ice, and is driven by a sprocket chain from the crank shaft. Extending upward from both members of the fork in which the wheel is journaled, are posts connected by a stiff flat spring with the frame, the spring being clasped near its center by pins on a depending link pivoted to a lever fulcrumed on the back part of the frame, at a point lower down, the forward end of this lever being held at the desired height by a rack bar, whereby the spring is raised or lowered to tilt the frame of the driving wheel and thus regulate the height of the wheel in relation to the rest of the machine. The saddle is carried by an arrangement similar to that in use on the ordinary safety bicycle. When the machine is to be used on ice, skates, as shown at the bottom of the picture, are attached to the front and rear runners, the skates being held in firm position upon the runners by lugs, flanges and thumb screws, while the construction admits of their ready attachment or removal. The machine may be very easily and rapidly driven and perfectly controlled.

**A WORLD'S FAIR EXHIBIT OF TINNERS' TOOLS, MACHINERY, ETC.**

The display of tinsmiths' tools and machines in the exhibit of the Peck, Stow & Wilcox Co., in Machinery Hall, contains a large variety of goods of the highest grade of excellence, the most of which have long had an enviable reputation, not only in the United States, but in many foreign markets. Prominently shown in



THE WORLD'S COLUMBIAN EXPOSITION—THE PECK, STOW & WILCOX CO.'S EXHIBIT.

the exhibit is a large eight-foot squaring machine and a hemming or binding machine for making map binders. The firm make a large line of shears, up to heavy power shears for cutting or shearing heavy metal, and including shears having irregular shaped blades for cutting any desired shape, such as elbow sections, corset steels, saw blades, etc., these blades to be used with either foot or power shears. Other shears are especially adapted for cutting corrugated metal, the blades fitting the corrugation and blades of different sizes fitting the same shears, these shears being especially desirable for cornice makers, roofers, etc. These shears all have the most recent improvements, are made of the best material and show first-class workmanship throughout. Hand shears, nippers, punches, chisels, grooving tools, tinner's stakes, hammers, roofing tongs, seamers, soldering coppers and numberless other tools contribute to make a display which for extent and variety has few equals. The firm also make a large line of house furnishing goods, and their name stamped upon an article is in every case a guarantee of its sterling worth. Their main store and office is at No. 27 Chambers Street, New York City.

**Steam Cuts Metals.**

M. Daubree points out that leakage from steam pipes may cut through metal plates. He cites an example in which metal exposed to the escaping vapor from a steam pipe at a pressure of seven atmospheres, 105 pounds, was found to be channeled and striated; the marks being similar to those made by a saw or a file. A valve on a steam pipe and the seating of a safety valve may be attacked in the same way. All groovings in metal attributable to this cause are polished as if by emery. This observation points to the remarkable conclusion that, given sufficiently high pressure and rapid motion, gaseous bodies can polish and striate in a way generally supposed to be confined to the action of solid bodies. This, indeed, is in conformity with the general results of advanced physical research, which show that under sufficient pressure, hard and solid bodies can be made to act as liquids; while soft and even gaseous bodies, if endowed with sufficient force and speed, act like solids.

**Inventor of the Screw Propeller.**

In referring to the recent celebration in Austria on the centenary of the birth of Joseph Ressel, inventor of the screw propeller, who died in poverty and neglect in an inn at Laibach in 1857, the *Shipping World*, of London, says:

"His claim to priority in the invention of the screw propeller was disputed in England and elsewhere, but seems now to be well established, the various documentary proofs having just been published, together with invectives against his 'stupid countrymen' and the 'heartless foreigner who snatched the honor and the glory from him, to whom both were legitimately due.' Ressel described his idea of using the Archimedean screw for the propulsion of ships as early as 1812. It was not until 1829, when his former patents had all lapsed for want of money to renew them, that he succeeded in interesting a Trieste merchant, named Fontana, in his invention. A small steamer, the *Cidetta*, fitted with the first screw, left Trieste harbor in that year, and proved manageable in every respect for the first five minutes, when, unfortunately, one of the pipes burst. This was enough for the Trieste au-

thorities to forbid any further experiments of the kind, and the inventor had to continue as an employee of the forestry department of the government on a salary of £70 a year. That his great achievement should have been unrecognized and unrewarded during his lifetime is, perhaps, the best of all reasons why the present opportunity should be taken to do honor to his name, and to perpetuate his memory in an effective manner."

**KNITTING MACHINES OPERATED BY ELECTRICITY AT THE FAIR.**

One of the most attractive displays of the Exposition, to any one having even but a slight acquaintance with the extent and variety of the textile industries of this country, is that of Messrs. Scott & Williams, builders of knitting machinery, whose main office and works are at No. 2079 East Cumberland Street, Philadelphia. The exhibit is in section 29 Machinery Hall, where a complete outfit of their machines for making knitted fabrics is shown, all in full operation, run by electric power. Here may be seen a rib border machine making rib tails, drawer bottoms and cuffs; a ribbed underwear machine making ladies' plain or shaped rib vests, with plain or royal rib stitch—the machine being also used for making union suits; a two-feed sleeve for making long or short sleeves, or rib tops for half hose; a single-feed welter which makes tops for half hose and legs for hose with welt and slack course, etc. An automatic splicing attachment for the last mentioned machine reinforces the knees of long hose by automatically knitting in an extra or reinforcing thread half way round the stocking. There is a fancy ribber for making fancy stitch for hosiery, caps, or any similar class



THE WORLD'S COLUMBIAN EXPOSITION—SCOTT & WILLIAMS' EXHIBIT OF KNITTING MACHINERY.

of work, and an ingenious bar stitch or pillar bar machine for finishing the edges of ladies' vests and children's underwear. A delicate silk ribbon is fed to and automatically inserted into the bar stitch finish made on the machine and attached to the garment. This machine is used for attaching any variety of ornament of lace or edging, and inserting a ribbon at the same time. A chain machine makes eleven strands or chains for use on this bar stitch machine, the chain being crocheted or looped by an ingenious mechanism from yarn or thread. There is also a machine styled the looper, for closing the toes of stockings previously knitted on another machine. The exhibit receives the marked attention of practical men in the business, and is acknowledged to be one of the most complete and meritorious of the displays illustrative of the textile manufacture.

**The Age of Maturity.**

Statistics are said to show that young men do not, on the average, attain full physical maturity until they arrive at the age of twenty-eight years. Professor Scheiller, of Harvard, asserts, as the result of his observations, that young men do not attain the full measure of their mental faculties before twenty-five years of age. A shrewd observer has said that "most men are boys until they are thirty, and little boys until they are twenty-five," and this accords with the standard of manhood which was fixed at thirty among the ancient Hebrews and other races.

THE costliest mile of railroad is a mile measured on the steel portion of the Forth bridge. The length of this portion is a mile and twenty yards, and the cost of it was considerably over \$10,000,000. The most expensive railway system in the world is the "Inner Circle" line of London, which cost, including the purchase of land, from \$3,000,000 to \$5,000,000 per mile. The last constructed mile, between the Mansion House and Aldgate, cost altogether, including "compensations," nearly \$10,000,000.