

Improved Universal Sawing Machine.

The saw-mill which we illustrate herewith is remarkable for its ingenious adaptation to the uses such machines are put to. It is compact and simple, although at the first glance it appears complex, and it might easily be made portable by placing it upon wheels, if there were any occasion for such an arrangement. This machine will cut timber for all purposes to any angle or curve required, and the saws can be adjusted while in operation to follow any given line marked out upon the work. In the engraving the machinery is shown mounted on a long wooden frame, A. Upon this frame there is an iron bed-plate, B, which carries a metallic disk, C, on each end. This disk is rotated by an endless screw, D,

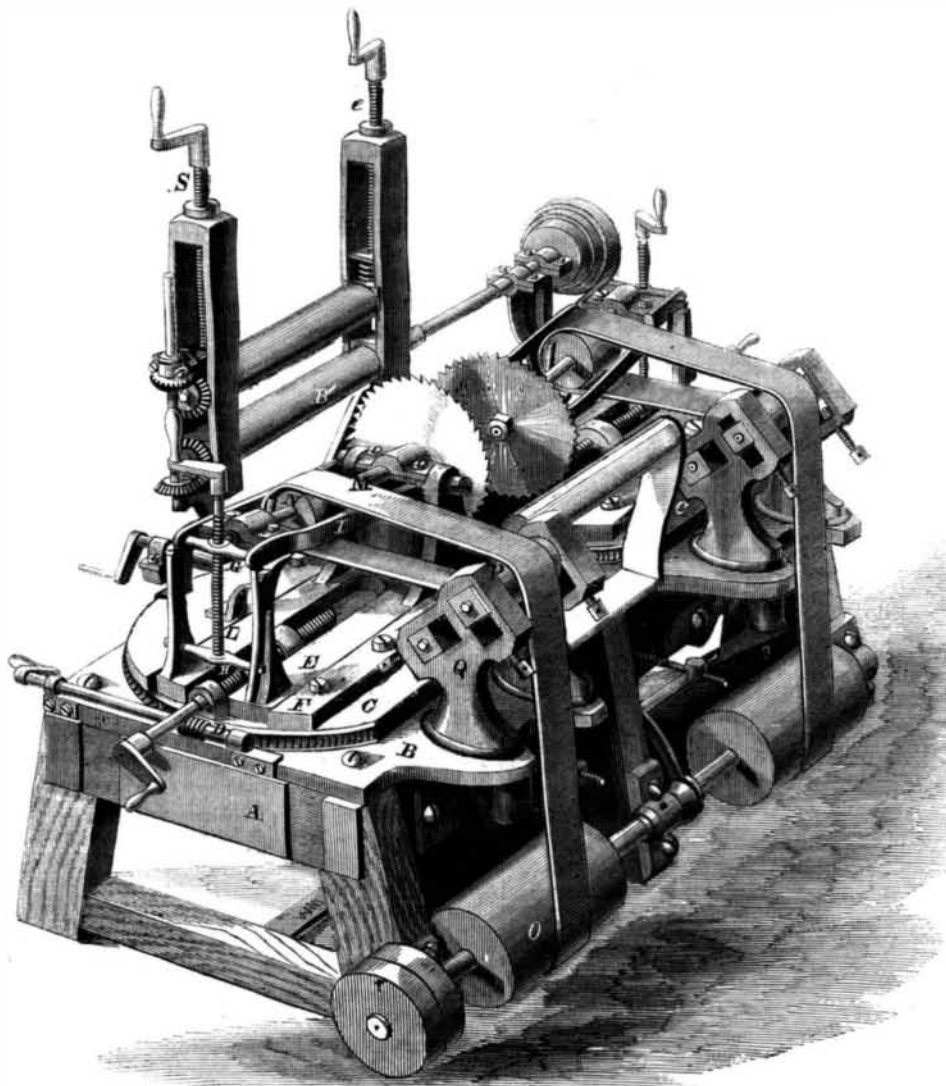
bevel gears on one end, and the distance of the rolls apart, from center to center, is regulated by the screws, S.

By these arrangements the angle of the saws may be varied, as set forth previously, without materially altering the tension of the belts, for the pulley, N, is directly over the center of motion of the disk and is not disturbed, laterally, by the alteration of the frame in which the mandrel sets. The feed rollers are also unaffected by the change of position which the frame they work in assumes, for they are connected by universal and extension joints which permit them to operate effectually in all cases.

This is a most ingenious and useful machine and one that will give good satisfaction if properly man-

steam pump has been rigged and the water pumped out, but, until the head of surface water is all removed, no further excavation will be made. The workmen have reached a depth of sixteen feet and two of the cylinders have been placed in position. The contractors say that by excavating some four feet more, they will come to a strata of thick blue clay, and when once the excavation is completed in this, there will be no further trouble to contend with. The cylinders are bolted together in a cement formed of iron filings, sulphur and other chemicals, forming a joint perfectly impervious to water.

A NEW CAR NEEDED.—A writer in one of the religious papers, in alluding to the comforts now afforded to the various classes of railroad travelers, in the shape of sitting, sleeping, and smoking cars, calls loudly for a *swearing* car. He thinks that one of these cars on two trains, daily running over our leading roads, would be well filled, provided companies would positively forbid swearing on the other trains. We have observed, of late, that this ungentlemanly practice is becoming more prevalent.

**VANCE'S UNIVERSAL SAWING MACHINE.**

gearing into a thread cut on the edge of the disk. The disks have, further, a slide rest, E, working in the jaws, F; upon this rest the saw frame, I, sits. The frame works in bearings at one end, and is moved up and down through two vertical standards having graduated indices so that the saw can be set to any required angle by simply running the free end up and down by means of the screw, L, one end of which is confined by the crossbar, H, at the bottom while the other bar, G, constitutes the nut.

The saw mandrel, M, is carried in the frame just described and it has a pulley, N (which slides, but does not turn on the shaft), over which a belt runs. This belt passes over rollers, P, carried in the frame, Q, which sits on the plate, B; these rollers can be set up by set screws so as to tighten the belt, and the frames in which they set can be turned so as to accommodate themselves to the varying position of the saw mandrel. There is also a small guide by the side of the pulley on the saw arbor which keeps the belt on and the pulley in its place. The feed rollers, B', are set at one side of the machine in a frame which has a slight motion on a vertical axis, not shown in the engraving, and are driven by friction gearing placed underneath the bed-plate; motion is communicated from the lower to the upper set by means of

aged. It was patented on March 8th, 1864, by Lorenzo Vance, of Philadelphia, Pa. For further information address the inventor as above.

India-rubber Shirt Collars.

Linen, cotton, paper and steel collars are now made, and to these vulcanized india-rubber collars have been added by W. J. Smith of Sale, England, who has taken out a patent for them as a new article of manufacture. He states that suitable patterns may be painted or printed on the collars, either before or after they are cut from the sheet; and they may be made white, or colored, or embossed. Cuffs and wristbands may be made also of the same material. Paper collars are now extensively used in this country, and some steel collars are worn by other than canine quadrupeds; but rubber collars are "something new." There is nothing like rubber!

The Lake Tunnel at Chicago.

A Chicago paper says that the recent heavy rains have partially stopped the workmen engaged in sinking the shaft of the Lake tunnel at the water-works, owing to the consequent large amount of surface water, which has soaked down through the quicksand and forces its way up from beneath the cylinder. A

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