

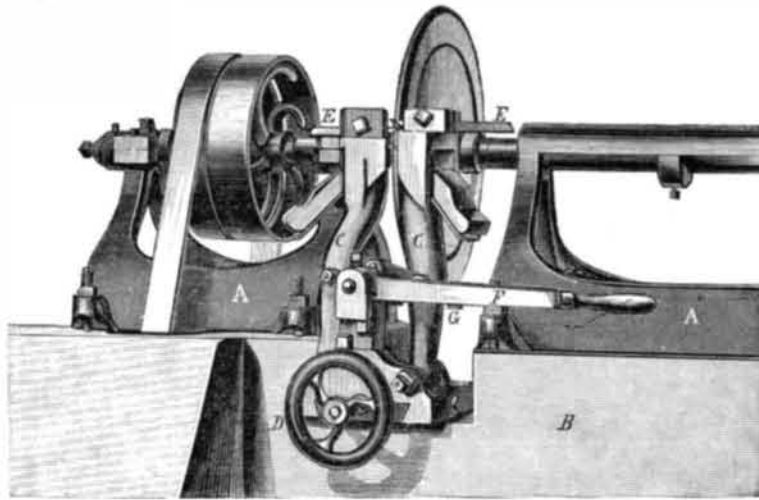
Improvement in Turning Barrel Heads.

The engraving represents an exceedingly simple machine for turning and chamfering the heads of barrels and casks and the bottoms of tubs, pails, etc. It would seem to be a very efficient contrivance for the purpose.

There are two heads or stocks, A, similar to those of an ordinary lathe, mounted upon shears or a frame, B, one spindle—the "live" one—having a fast and loose pulley, and the other—the dead spindle—sliding back and forth by means of a screw and hand wheel in the ordinary manner. To the live spindle is secured a circular flange or head which, of course, rotates with the spindle. There is a duplicate attached to the dead spindle, but turning upon it as a wheel upon its axle. To hold securely the stuff placed between them to be turned, their inner faces are provided with spurs. Secured to the bed of the lathe is a stand which supports two uprights, C, which are pivoted to a table, the lower part or base of which slides by a dovetail slot in the stand and can, with its appurtenances, be moved in or out by means of a screw and hand-wheel, D, as the carriage on a lathe. Thus, the apparatus can be adapted to the different sizes of work to be done.

The uprights are pivoted at their lower ends to suitable stands on the table or carriage, and the other ends are adapted for the reception near their tops of turning tools, E, held horizontally in place by means of set screws, as the tools in a turning lathe are held. Just below them, and set at an angle

to chamfer the edge of the head properly, are two plane irons secured in the usual manner. These cutters and planes are advanced to or receded from the work by a hand lever, F, and suitable links, shown plainly in the engraving, and the limit of their approach is determined by a set screw—the head of which is seen under the lever, at G—passing through one of the uprights and setting against the other.



SPAULDING'S LATHE FOR CUTTING BARREL HEADS.

The operation can, from the foregoing description, be readily understood. A square piece of stuff is put in the lathe between the disks and secured by bringing the disks together. Power is then applied and the disks with their engaged material rapidly rotated. The hand lever is then depressed,

the cutters engage with the stuff, separate the corners, which are thrown off by centrifugal force, and the planes form the bevel or chamfer.

The device was patented through the Scientific American Patent Agency March 7, 1865, by E. P. Spaulding, who may be addressed at 2,147 Chouteau Avenue St. Louis, Mo.

Use of Distilled Water.

In Mr. Quin's report upon the Paris Exhibition, reference is made to the use of distilled water at the Wallaroo Copper Mines in South Australia, stating that until tanks for collecting rain water had been constructed, "perhaps for the first time in the history of the world, there was a population of some thousands, with all their horses, cattle, sheep, etc., drinking *aqua distillata*." As many readers may not be aware of the fact, it may be interesting here to mention that in the rainless region of the Pacific coast of South America, the entire population of the country between about the 18th and 28th parallels of south latitude, or some 600 miles from south to north, including the important towns of Caldera, Cobija, Iquique, Pisagua, and several minor ports, have for many years derived their supply of potable water from the sea water of the Pacific, distilled in greater part by coal imported from England, and costing above £3 per tun.

Not only is a population of many thousand inhabitants, principally engaged in the mines of this district, as well as a still larger number of beasts of burden and other animals, supplied from this source, but even the locomotives on the Copiapo and Caldera railway, and some steam engines for other purposes, are actually driven with distilled water. For a distance of some thirty to fifty miles inland from the coast, very few natural springs are met with in this rainless desert, and when met with they are seldom sufficiently free from saline matter to be potable.—*Cor. Chemical News.*

PATENTS



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