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NEW SERIES.

## IMPROVED DOVETAIL AND TENON CUTTER.

The number of boxes which are badly put together, for the want of some such machine as we illustrate, to make a good joint at the sides, is enormous, and were that its only use the machine we are about to describe would be a great acquisition, but it is useful for cutting dovetails and tenons at any angle and in any material.

Fig. 1 is a perspective view of the invention for which a patent has been applied for. The inventor is W. A. McDonald, of Mott Haven, N. Y. It rests on a bed, A, and can be operated from a shaft, B, by hand or other power, according to the size of the machine. The cutters are two wheels with an angular periphery, D, on which a spiral saw, E, which runs like the thread of a screw around and on the periphery, is placed. In large machines this saw can be inserted in a spiral groove cut in the wheel, and in small ones it can form part of the wheel itself. The wheels C are adjustable so as to vary the angles at which they stand in relation to the bench F, and also to cut a narrower or wider tenon in order that the fit may be tight or loose as desired. The bench is capable of being elevated or depressed at the back so as to allow the stuff to meet the cutters at the desired angles by the screws, G, and the whole table can be elevated and tilted by the screw H. On the bench, F, there are two bars, I, on which the stuff to be cut is placed, and a guide, J, is secured to them, against which one side of the stuff is pressed, so as to keep it true to the saw.

The operation is as follows:—The guide is brought in front of the saws and the stuff placed up against it, a slight motion is then given to the stuff by the hand, and the bar, a, on the bars, I, catches in a screw, b, of the same pitch as the cutters, and which carries the stuff forward a sufficient distance for the teeth of the saw to take hold, and start the tenon at any point desired. The bar is then relieved, and the cutters, by their spiral form, continue to feed to themselves as well as cut. One wheel C, cuts one side of the tenon and the other the opposite side. Specimens of its work are illustrated lying around the machine, and will be seen it is capable of cutting all those joints at any angle or bevel. Two extra heads are provided with the machine to cut the dovetail in another piece of stuff, for the tenon to rest in, and they are of course are capable of the same adjustment as the tenon cutters. The saws in the latter heads are inclined to the periphery, D, those seen in our illustration being at right angles to it.

Fig. 2 represents a cutter patented by the same inventor February 15, 1859, for the purpose of jointing to-

gether any material, such as wood, metal, bone or other substance, as in Fig. 3, which shows a piece of metal, c, joined to another piece of any material which may either be cut to fit it or only the one cut and the other cast on to it. Fig. 5 shows its application as a tap for joining metal that has been cracked or broken, it is driven through the crack and some other metal is cast or screwed in the dovetail spiral which it leaves around the hole it has made in the metal. Fig. 4 is a cross section of such a crack. The tool itself is simply a dovetail screw d, with cutting teeth made on the outside of the screw, which cut in a peculiar manner, as it commences with

at Main Bar, on the American river, 120°; at Mountain Springs, 110°. The mercury rose about 10° higher than the above figures, when the thermometer was placed in a frame building.

The hottest weather ever known in the State, says the Shasta Courier, has been experienced during the past week. In some places, in brick buildings, the mercury rose to 118°.

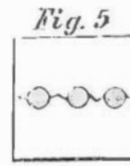
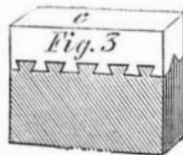
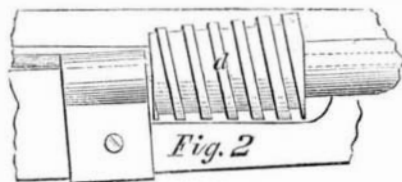
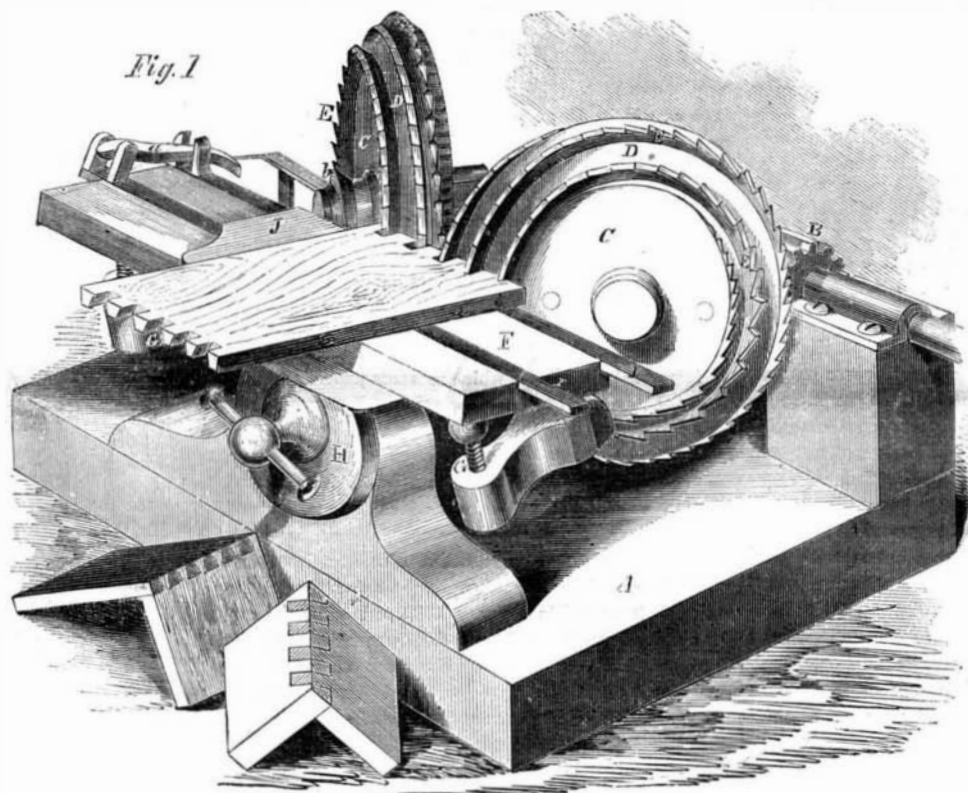
The heat has never been more oppressive at Mariposa, says the Gazette, than during the past two days. The thermometer has ranged in the middle of the week from 110° to 118°. Some of the interior towns, must have been fairly baked at noon. At Shasta, which is in the latitude of New York, the thermometer ranged (on the 27th), from 108° to 118°—so the dispatches say; and at Oreville, Sonora, Columbia, Nevada, Auburn, Marysville, and elsewhere, the same extraordinary heat was manifested. But worst of all was the visitation inflicted upon the town of Shasta Barbara. A terrible sirocco swept over that place, which caused the doors to run within doors and shut themselves up in houses. Cattle were killed, water became more than blood warm, fruit withered and fell from trees' branches as if roasted, grain dried up, and, in fact, everything of a perishable nature died as if before the blast of a furnace.

San Francisco has escaped and the weather, taken all in all, has been delightful. It is called unusually hot there if it gets as high as 80°. The sea breezes afford a pleasant relief, and such a thing as a sun-stroke never was heard of.

The heat in Paris, during the last week of June, and the first three weeks of July, has not, according to the meteorological registers of the Observatory in that city,

been equaled since 1793. Its long continuance is something almost unparalleled. To have the thermometer above 90° for 12 days in succession, seems to have astonished the gay Parisians. Many sudden deaths have been caused by the heat. For a week or two the divisionary and regimental drills of the garrison of Paris were entirely suspended. The English papers report that the maximum temperature in the shade has been the highest of the last 60 years—namely 89°. Of late years, the summer months of June, July, and August, appear to have had an increasing temperature.

INSTANTANEOUS PHOTOGRAPHS.—It is said that Mr. Skaife, of England, has invented a photographic apparatus that can be carried in the hand, and which, working by means of a trigger, can be used with ease and certainty. He calls his instrument the "Pistol Camera."



## MACDONALD'S DOVETAIL AND TENON CUTTER.

the narrowest part of the cut and gradually deepens and widens with the cut and makes the dovetail as it proceeds.

The inventor of this simple and valuable machine, which is capable of such varied application, will be happy to furnish any further information upon being addressed as above.

### GREAT HEAT.

The California papers give the following items concerning the recent "heated term."

In Sacramento the thermometer for ten days rarely fell below 100°, and often reached 106°.

The heat at Timbuetoo, Yuba county, caused the thermometer to rise to 121° on the 22d of June.

At Ophir, the thermometer stood at 114° in the shade for three consecutive hours; at Gold Hill, it was 116°;