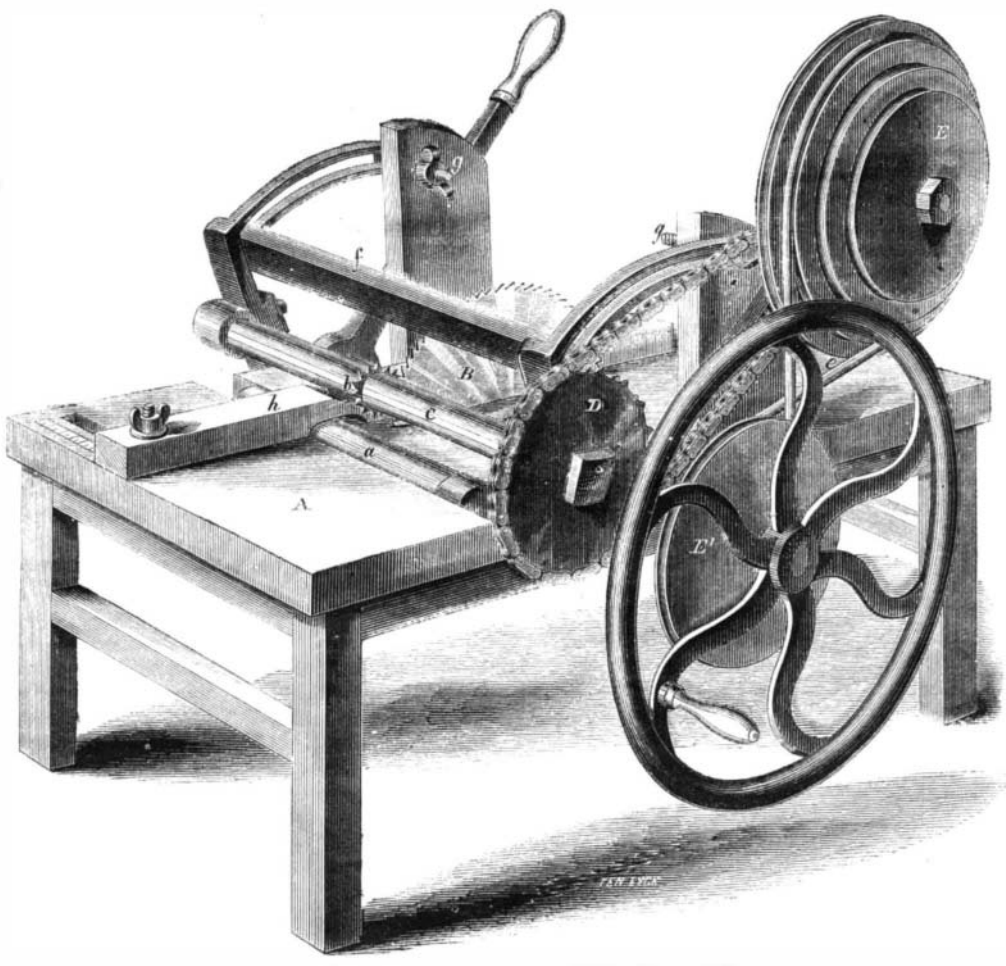
Scientific American.

A WEEKLY JOURNAL OF PRACTICAL INFORMATION IN ART, SCIENCE, MECHANICS, CHEMISTRY AND MANUFACTURES.

VOL. VIII.—NO. 2. (NEW SERIES.) NEW YORK, JANUARY 10, 1863. SINGLE COPIES SIX CENTS. $3 PER ANNUM—IN ADVANCE.

Improved Saw Bench.

Much inconvenience is felt by wood-workers, who do not employ steam or water power on their premises, in re-sawing heavy planks and timber; it is a work occupying much time and involving great labor. To remedy this difficulty, Mr. J. A. Talpey has invented the machine which is represented in our engraving. It consists of a short wooden bench, A, having bearings upon each side, in which runs the usual arbor provided with the saw, B; behind the saw, a small roller, *a*, is let into the bench, which facilitates feeding the stuff. The transverse shaft, C, has a small toothed wheel, *b*, fixed in its center, which catches in the lumber as it is presented to the saw and draws it in; the shaft being driven, during this operation, by the rag wheel, D, and another upon a shaft which is invisible. The cone pulleys, E and E', drive the circular saw through the medium of the belt, *e*, the upper one, E, being attached to the slotted frame, *f*. This frame regulates the hight of the feed shaft and allows it to be elevated or depressed for any thickness of stuff; it is secured in place by the thumb-screws, *g*. It will also be seen, by glancing at the engraving, that the operation of feeding the stuff is materially aided by the position in which it is offered to the saw, that is, from behind; the teeth revolving from the workman instead of toward him, as is usually the case. The operation of this self-feeding saw is very simple, involving no other labor than that required to turn the handle of the fly-wheel, and to place the board to be cut in position; the toothed roller then takes the operation in charge, and, by means of the ordinary guide, *h*, at one side, cuts to a straight line. The inventor states that a two-inch oak plank can be sawed without difficulty on this machine; it seems very convenient, and we do not doubt it will be found useful in a great many shops.



TALPEY'S PATENT SAW BENCH.

Patented July 1, 1862, by Mr. J. A. Talpey, of Somerville, Mass. Further particulars can be obtained from him.

Are Angulated Armor Plates of any Use?

The London *Mechanics' Magazine* states that no particular benefit can be derived from angulated armor plates that cannot be secured with the same weight of metal in vertical plates. Experiments were recently made at Shoeburyness, with plates set at an angle of 45 degrees, in a target, and they were pierced with flat-fronted steel shot. In no case was any of such shot deflected by the metal being at an angle. The effect of the incline is simply to increase the horizontal thickness to be penetrated by shot, and the increase is in proportion to the angle of inclination. But as more plates are required in a vessel with angulated than vertical sides, if this extra weight of metal be given in thickness to vertical plates, the same amount of resistance to shot is obtained. The resisting force of a plate is in proportion to its thickness; and deflection is not secured by angulated plates against flat-fronted steel or flat-fronted wrought-iron projectiles.

To render Glazed Roofs Waterproof.

A correspondent of the London *Builder* says:—"Having seen it repeatedly stated that it was impossible to render a glazed roof waterproof when the ribs were of iron, in consequence of the expansion and contraction of that material, I beg to place on record in your columns the result of my experience to the contrary. Having long known the value of a compound of tallow and resin when laid on hot, with a lap of linen or calico, to fractures in water pipes, it occurred to me try it on the roof of my conservatory, which is of iron. It was laid on hot, over the sash-bars and putty; extending about a half or quarter inch on the glass. I have found this to answer admirably, as the mixture expands and contracts without breaking its continuity. The proportions I have used are two of resin to one of tallow."

Printing in Colors.

Inventors have long sought to produce a press which should be capable of printing, at one operation, a number of colors. There have been many machines designed to effect this object, some of them working very successfully. We are informed that there is one press in this city capable of printing the seven colors at one operation; how correct this statement is we have no means of ascertaining. We can say, however, from a personal inspection, that Messrs. R. Hoe & Co., the celebrated printing-press makers of this city, have invented a machine for the purpose alluded to, which does very good work. The one we saw working printed four colors, and did it well, too. The arrangement of the press, which we are allowed to make public, is as follows:—The paper to be printed is fed in from a table on to a cylinder the same as usual, but for every color which is to be printed there must be a separate form. For instance, supposing the national coat-of-arms to be the subject we desire to print in its natural tints, we must have one stereotype for the eagle, another for the red stripes in the banner and yet another for the "union" in the same. These are all arranged on a long platen in the order in which the colors occur; or so that they will alternate regularly in reference to their positions in the print. The feeding and distributing color-rollers are at either end of the platen and are actuated similarly to other rollers. The paper remains upon the cylinder during the whole operation of printing, consequently the register is unchanged and the artistic appearance of the picture greatly improved thereby. For ornamental work, such as illuminated cards, posters and advertisements generally, this press seems to afford a neat and convenient machine which will doubtless be highly appreciated by the trade. It will be but a short time, we venture to say, before our illustrated papers will avail themselves of this invention, and present their readers with pictures done in the real "red, white and blue."

A LARGE LEATHER BELT.—A leather belt was lately manufactured at Pawtucket, R. I., for a Western woolen mill, which belt was 120 feet (240 single) in length and 28 inches in width. It weighed 600 lbs.

THE Norfolk Arms Company at Norfolk, Conn., are turning out about 70 rifles of the Springfield pattern daily.