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Aluminium.

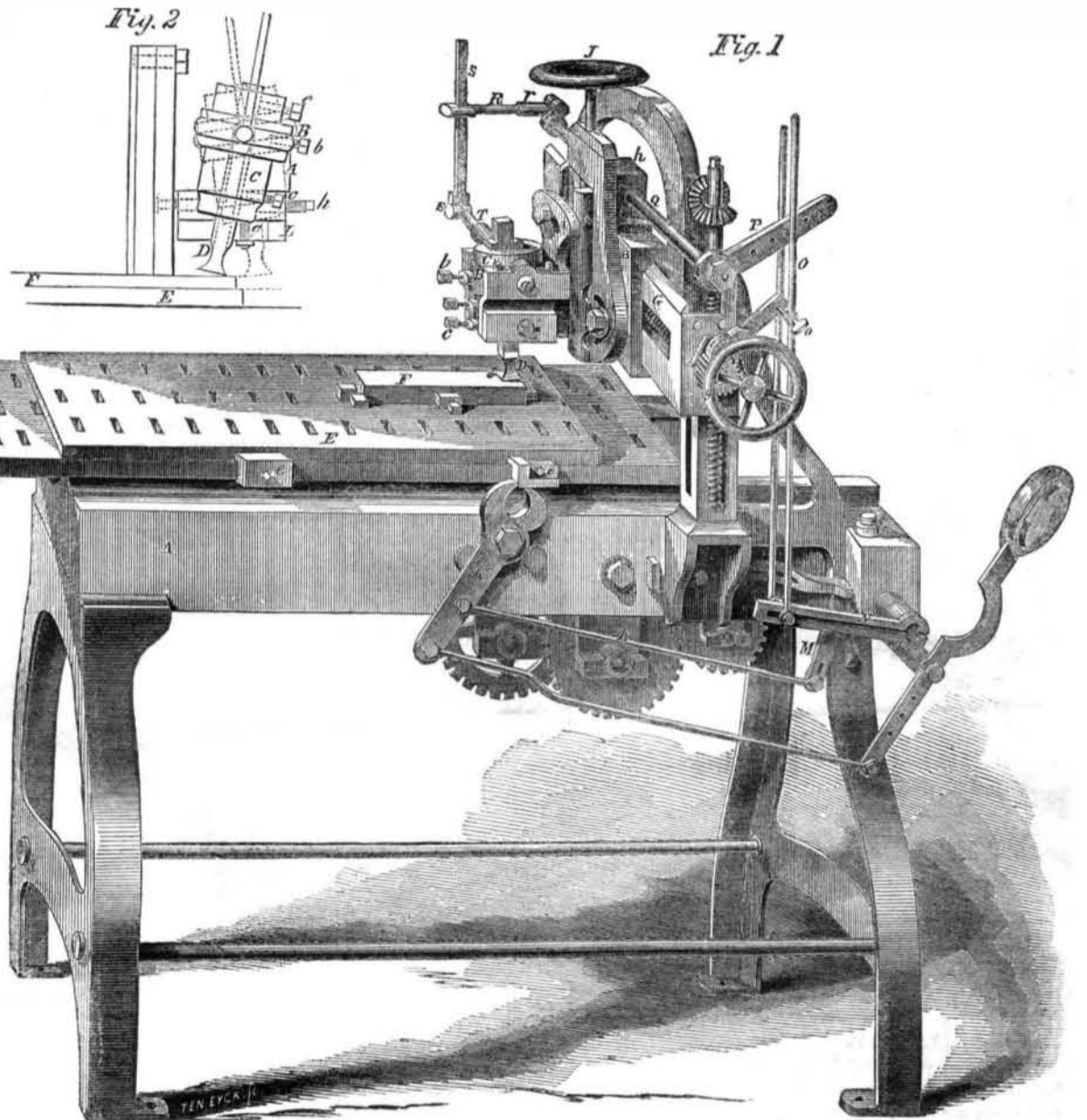
M. St. Claire Deville lately delivered a lecture before the Society for the Encouragement of National Industry at Paris, on aluminium, in which he gave some interesting facts in relation to its properties, and the progress made toward its general introduction. Under the skillful hand of this celebrated manipulator, it has been reduced to a beautiful white metal, with a slight bluish tinge, easily worked, more easily melted than silver, remarkably well adapted for gilding, and, in short, capable of being applied to many manufacturing household purposes. It has taken its place, in fact, among metallic substances as much as iron, brass or any other metal. The extraction of this new element of beauty and utility from the common clay is only another evidence of the scientific knowledge derived by the world from the noiseless operations in the chemical laboratory. The processes by which the object is attained are complicated as yet, it is true, but they are becoming less so in the same manner that all the now well established manufactures have. Three foundries have commenced the fabrication of this metal in France, and M. Deville now disposes of many hundred weight per annum. The price at present is 300 francs per kilogramme, or about \$27 per pound; but even under the present system of production, it might easily be reduced to 200 francs, were it manufactured on a large scale. The distinguished discoverer of this metal looks forward to the period when it will supersede the more precious metal in the fabrication of numberless articles of adornment and use.

Recorded Register for Gas Meters.

At present no uniform method is observed by the consumers of gas for keeping a check upon the inspectors who examine the meters monthly, and take down, for the accounts of the gas companies, the amounts consumed. The monthly inspectors may make false entries, and the consumers of gas thereby suffer. To afford a check against such a result, Mr. A. N. Brewer, of this city, has designed a tabulated index to hang up beside each meter for the inspector to enter the amount registered on the index of the meter, and the quantity consumed during the month. These entries will enable the consumer to examine the meter for himself, and to keep a check upon the inspector and the bills of the gas company. It is a very useful improvement, and it is surprising that something of the kind has not come into general use long before this.

The Senate has passed a bill giving \$20,000 to Edward N. Kent, in full compensation for the use in the United States Mints of his apparatus to separate gold and silver, and other precious metals. It was illustrated on page 81, Vol. XI, SCIENTIFIC AMERICAN.

MASON'S CUTTER STOCK FOR PLANERS.



There is a great waste of time in the ordinary metal planing machines which will only cut in the one direction, and hitherto there has been some practical difficulty attending the machines which cut both in the back and forward movements of the bed. The machine illustrated in our engravings, (and the cutter stock of which is the invention of Joshua Mason, of Paterson, N. J., and was patented by him July 22, 1856,) is, we think, the best produced for its purpose. One tool does the cutting, and it is not turned or rotated, but is provided with a double edge, and is so mounted in a movable cutter stock that, whichever way the metal to be cut is moving, a cutting edge is presented to it at exactly the right angle to take off a shaving the same thickness as the preceding one.

Fig. 1 is a perspective view of a planing machine with this cutter stock and operating parts attached, and Fig. 2 is a view of the same separate, showing the cutter in the two positions, one in line and the other dotted.

A is the frame of the planing machine, carrying a bed, E, to which is secured the piece of metal, F, to be planed or cut even by the tool, D. This tool is of peculiar form, having two cutting edges, seen better in Fig. 2, each of which can be ground independent of the other, or exactly alike, and by regulating the feed motion it can be made to go with one

edge in one direction over the stuff, taking off a shaving, and at the return stroke or motion of the bed, it can take, with its other edge, a finer shaving off the same surface, thus finishing each cut as made, or it can cut at each motion a shaving in advance of the last, and dress after. The tool is mounted in a cutter stock, C, by means of set screws, b c, and the stock can move in a frame, I, by being supported by the pins, a, projecting from the belt, B, and moving in journals in I.

The manner in which it is moved is as follows:—On E are two movable stops, e, that can be put and secured in the proper positions by set screws, which, when the bed has got to the end of its traverse in one direction, throw the clutch, K, over, and so by a system of levers, connecting rods, and wheels, as in ordinary planers, reverses the motion of the bed. To this clutch, K, there is also attached another connecting rod, L, that is attached and gives motion to the bell crank, M N, to which are connected by a screw the rods, O; to one rod, O, is secured a toothed piece, i, by a screw, o, and this working on a ratchet wheel moves a screw that propels the frame, H, along the slide, G; this can also be done by the hand wheel, g, at the commencement, to bring the tool over the piece to be cut. To the other of the rods, O, at or near its top, is attached a lever, P, which moves a shaft or

bar, Q, and this has a piece, R, jointed to it at r, the other end of which passes over (by a slot in it) the piece, S, hinged to the axle, T, of the cutter box, C. It will be seen from this arrangement of levers and rods, that as the clutch, K, is thrown over, and the motion of the bed reversed, at the same time the cutter is changed from the angle at which it has been cutting with one edge to the same angle with the other edge, and has also been advanced one shaving or not, as desired; the frame, I, which supports the cutter stock, is raised or lowered on H by the wheel, I, and Q passes completely through the box, h, that helps to support H on G.

This arrangement can be attached to any planer, and will prove a great saving of time wherever it is used. Any information that may be desired can be obtained by addressing the inventor as above.

An Orthodox Subscriber.

One of our subscribers, who is an attorney-at-law in a thrifty village in Pennsylvania, writes to us in the following sensible manner:

"I am strictly orthodox, and I would as soon think of raising my family without the Bible in the house, as doing business without your paper in my office. I have been a regular subscriber to the SCIENTIFIC AMERICAN for a number of years."