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Improvement in Screw Machine.

The annexed engravings represent a machine for cutting screws, which has been used with great success for three years in some of the large shops in the West. The shaft of the head stock is hollow, to allow the insertion of bolts of any desired length, and in all its equipments it is equal to any of the screw-cutting engines in common use, while by the peculiarity to be described it admits of a very nice adjustment of the screw produced, cuts the thread complete, at one operation and in a very superior manner, and affords extraordinary facilities for inserting and removing the bolt.

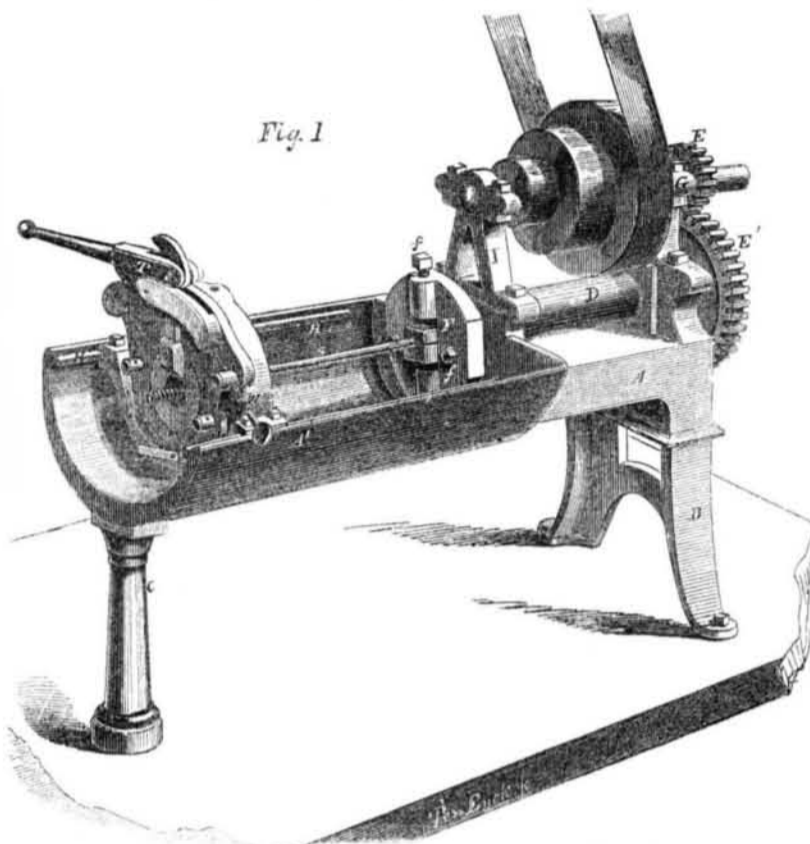
The novelty lies in the arrangement and mode of operating the cutters and dies. Fig. 1 represents the machine complete, fig. 2 an enlarged view of the cutting portion alone, fig. 3 a piece fitted to the face of fig. 2, and fig. 4 a portion of the form produced. The threads are in no instance raised on the bolt by crushing the metal, but in every case the crease is cut out clean by the dies, the forward edges of which act as cutters, like the tool of a lathe, and remove the metal in thin shavings. No backing motion is ever required, and consequently one belt and one pulley for reverse motion is dispensed with, and the dies are never liable to nip and heat.

The bed-piece, A, the legs or standard, B, and the front pillar, C, explain themselves; so also do the standards or carriers, I I, which support the journals of the hollow mandrel, D, with the cone pulleys, gearing, etc., to give motion thereto. On the front end of D is fixed the ordinary chuck, F, which contains the pair of ordinary holding dies, J. The bolt to be operated on is represented by S, which is held in the dies, J, and consequently receives the same rotary motion as D.

On the interior surface of the bed-piece are cast straight horizontal slides or guides, H H, to which is fitted the sliding carriage W, as represented, and in this is supported the die chuck with its attachments. The principal portion of the die chuck consists of a circular metal box, J, of which fig. 2 is a front or interior view. It is provided with journals, j j, by which it is supported in a ring, (not represented) so that it is free to oscillate in a horizontal plane, and this ring is in its turn mounted on journals located horizontally to allow of oscillation in a vertical place, the effect of the whole being to suspend the box, J, by a kind of gymbal ring or what is equivalent to a universal joint, so that it is free to accommodate itself to any position of the sliding carriage, W.

The interior of the box, J, contains three radial grooves, into which the cutting dies, K, are fitted to slide freely. The dies are connected by links, N, to pins, k, on another ring, M, which latter is fitted loosely to the front of J, so that it may be partially rotated by the aid of the arm, P', and thus draw together or separate the cutting dies, K, at pleasure. The plate, M, has an opening in its center large enough for the largest sized bolt to pass freely through, and the projecting rim or lip, z, fits accurately against the faces of the dies, K, so as to confine them in their grooves without

MOORE'S SCREW MACHINE.

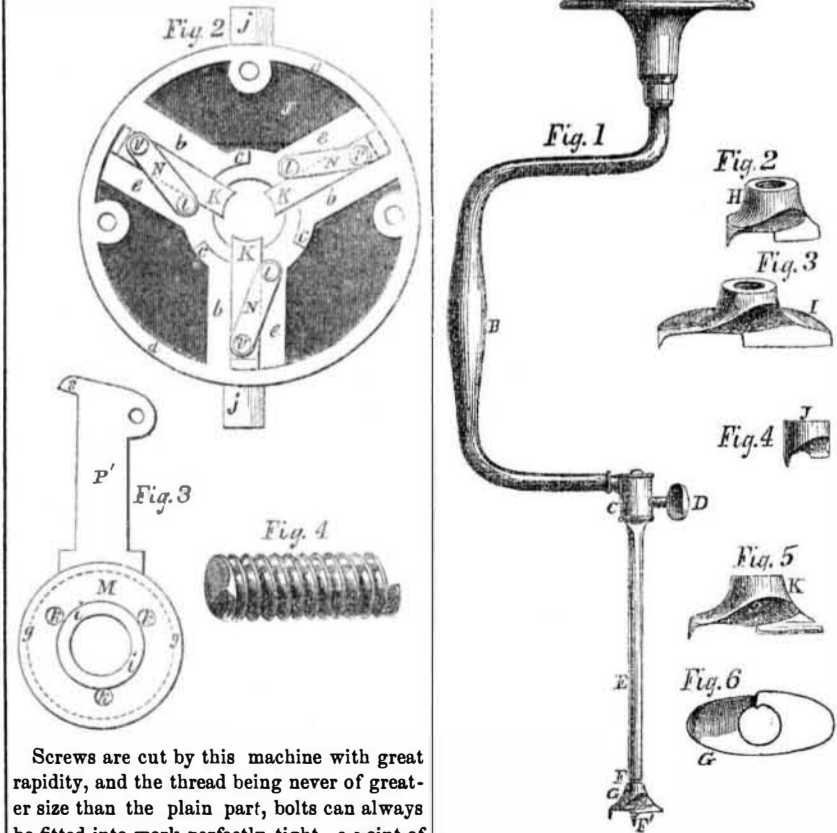


preventing their proper and easy motion. All the parts are so rebated and confined as to make a strong and durable job.

The ultimate means for controlling the position of the ring, M, and of graduating the sizes of the screws cut now remains to be explained. The handle or lever, T, is jointed to the arm P', at its extremity, and must be drawn forward, to bring the dies, K, into action. When drawn sufficiently forward, a hook or catch drops over the end of a curved stop, as indicated in fig. 1, and confines it until released by the attendant. The position of this curved stop may be adjusted at pleasure, and thus the whole machine is made readily adjustable to all the conditions required.

claimed that valve rods, or other nicely fitting parts of machinery, first turned in a lathe and then cut in this machine, will be found perfectly straight, however unequal may be the hardness of the different parts of the metal.

This machine was patented by Mr. John Moore, of Madison, Ind., in October last. One of the machines is now on exhibition at Lovejoy's Hotel, this city. Any further information may be obtained by addressing Joseph Garratt, Sen., & Charles Almond, care of John M. Slaney, Baltimore, Md., or George Almond, Madison, Ind.



Screws are cut by this machine with great rapidity, and the thread being never of greater size than the plain part, bolts can always be fitted into work perfectly tight, a point of great importance in car or agricultural machine making, bridge building, etc. It is also

vention of Mr. Charles H. Barnes, of this city.

The peculiar properties of these adjustable bits are boring a smooth hole, cutting very easy, capable of being used in a brace or handle at the pleasure of the operator, will pack in less space, and are cheaper than any other bits and gimlets boring the same sizes.

As will be seen by the cuts, a different cutter, G H I J K, etc., is provided for each size of hole to be bored, and in each instance the sharp screw point, F', of the spindle, E, projects through the cutter at its center, thereby fastening the cutter to the spindle, while the screw of the spindle projecting beyond, acts as a feed screw, like the center of an auger bit.

A set consists of 12 cutters, 2 spindles, 1 handle, wrench and screw-driver, cutting 12 sizes, from 1-4 to 1 inch inclusive. Eight of the cutters, viz., from 1-2 inch upwards, increased by sixteenths, are formed to fit on a larger and longer spindle. The remaining four cutters (1-4, 5-16, 3-8, and 7-16) are similarly adjusted on the small spindle.—Either spindle can be quickly fastened to the handle, when either of the above cutters, from 1-4 to 1 inch, can be used easily in the form of a gimlet, and by turning one screw the handle is disengaged, when all may be used in a brace.

Any further information concerning this invention may be obtained of Mr. D. B. Logan No. 11 Gold st., this city. A patent has been applied for.

Migration of Plants.

"Plants are seldom motionless. The wind wafts the seed of the dandelion. The waves bear the nut of the cocoa palm. Man has carried the apple and pear, the apricot and the peach, from the highlands of Asia to the Far West. The cerealia have spread over all the world, and have become so cosmopolite that the land of their birth is unknown. Some plants would almost seem to attach themselves to particular races. The common plantain is called by the North American Indians the White Man's Footstep.' Currents of air carry seeds and the eggs of insects and infusoria. To settle this formerly disputed question, a German philosopher, Unger, placed several plates of glass, carefully cleaned, between the almost air-tight double sashes with which he protected his study against the rigors of a fierce northern climate. Six months later he took them out, and examined the dust that had fallen on them, through imperceptible cracks and crevices, with a microscope. The result was that he discovered in the apparently inorganic dust the pollen of eight distinct plants, the seeds of eleven varieties of fungus, the eggs of four higher infusoria, and living individuals of at least one genus."

Observations like this go far to disprove the evidences of new created life which are often discovered both in natural and artificial compositions. It seems sometimes almost impossible to imagine how eggs or seeds could have either found admittance or retained vitality under circumstances where life appears, and it has not been deemed inconsistent with revelation to suppose the work of creation still going on. But such instances as above recorded induce a great reluctance to believe in newly originated life, and to induce a belief that the varieties of animals and plants which appear at intervals are but modifications generated from pre-existing species.

Paddle Wheel Experiments.

One of the large towboats plying about our harbor has wheels with pointed paddles, or rather with paddles so arranged as to produce the same effects, and covered by wheel-houses of such form as would only allow of paddles so arranged. It has been claimed that her performance is decidedly better than with the old wheels.

The accompanying cuts represent a new tool for boring holes of various sizes, the in-