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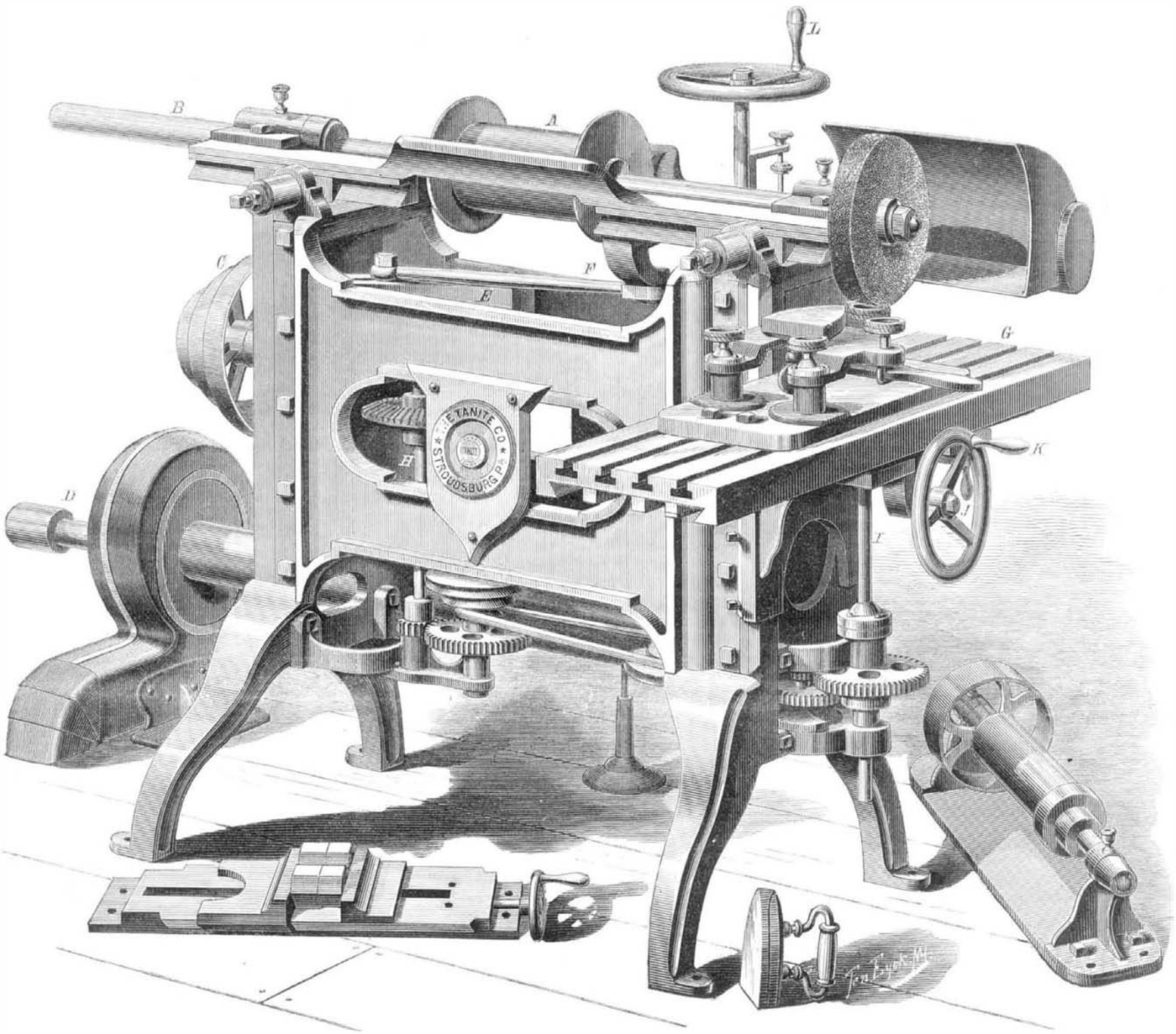

THE TANITE COMPANY'S NEW MILLING MACHINE.

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The Tanite Company, of Stroudsburg, Pa., have now on exhibition at the Fair of the American Institute in this city, and at the Franklin Institute, Philadelphia, a new machine, in which an emery wheel is used, for the first time, for surfacing files and sad irons, finishing anvils, nuts, gibs, keys, slide valves, straps, slides, crossheads, and in short, for accomplishing the majority of work now surfaced on the ordinary planer, milling machine, or shaper. It will be remembered that the emery wheel made by the above-named corporation is of the solid type, and a brief review of the advantages claimed for it may appropriately precede the mechanical description of the large and fine engraving, herewith presented, of the machine above referred to.

The solid emery wheel performs the office of a rotary file, the cutting edges of which never grow dull: in other words, it retains its efficiency as a cutting tool until literally worn out. It is hard, and cannot be broken by a fall or blow; it travels uniformly and steadily at a high speed, the latter exceeding, with safety, that of the grindstone, while the emery cuts faster and lasts longer than the sand. Being composed of an artificial mixture, its grit is more even than that of the natural substance; and the waste of material and time lost in making changes is said to be less than is the case with the wooden wheel. Finally, the solid wheels are successfully used for putting the cutting edges on tools of all descriptions, and they may be produced of any shape, fitted for any special work.

The size and clearness of our illustration will enable the forming of an excellent idea of the details of the machine. The driving belt acts upon the pulley, A, secured to shaft, B. The latter at its left hand extremity carries another belt, leading to a counter shaft attached to the floor (represented detached, and lying on the right of the machine), whence a third belt returns to the pulleys, C, and a fourth to the blower shaft, D. Through suitable mechanism, the pulleys, C, actuate the slotted crosshead, E, the revolution of which communicates, by the rod, F, reciprocating motion to the main shaft, B, and thus imparts to the emery wheel, represented on the right hand extremity of said shaft, a transverse movement across the sad iron, which is shown secured in the chuck on the table, G. In addition to performing this labor, the gearing, immediately driven by pulleys, C, also rotates the vertical shaft, H, which in turn transmits power to the cones on its r ght. These again (through the medium of a belt, other cones, and further suitable interposing mechanism) revolve a vertical rod, I, the lower end of which is fitted with a globe joint. Its upper extremity carries a pinion, which, by means of the handle, at J, may be thrown into action with one or the other of two racks under the table, G, so that the latter, by manipulating the handle as required, may be caused to travel automatically to and fro under the emery wheel, and over such distances as may be necessitated by the dimensions of the work. The hand wheel, at K, allows of similar movement to be imparted to the table by hand, in circumstances where the automatic motion is not desired.

The mode of operation consists in adjusting the work in the chuck to the proper elevation and starting the machine. The surface of the sad iron, for example, is thus carried under the wheel, and at the same time the latter is drawn across it; and this continues until the motion of the table transports the object out of the action of the grinder. The workman then gives the handwheel, shown at L, a part of a turn, thereby moving a fine screw which passes through an arm on the table, thus slightly elevating the latter, so as to give new surface for the tool to take upon. The handle, J, being shifted, the work travels back under the wheel, and so the operation is repeated as often as is desired, or else a new article is substituted after one passage under the emery. To avoid injury to tools and workmen, a small suction blower, with the necessary pipes and an enlarged receptacle in rear of the wheel, is provided, and so arranged as to draw away all dust, while at the same time to be easily removed for setting the work. For keys and similar small articles, a different chuck (see sample in the foreground of the engraving) is needed.

The machine, it is claimed, allows of using the wheel to its full capacity, while protecting the same against uneven wearing, thus rendering the employment of the diamond tool unnecessary. The cut made is much deeper than has hitherto been considered possible to accomplish by the emery grinder. The manufacturers also claim that in those articles in which first quality iron is used, on account of its being more easily worked, the use of their wheel will soon save enough valuable metal to pay for a machine. From a careful examination of the apparatus, these advantages appear to us to be well substantiated.

These machines are manufactured only by the Tanite Company, who may be addressed as above.

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