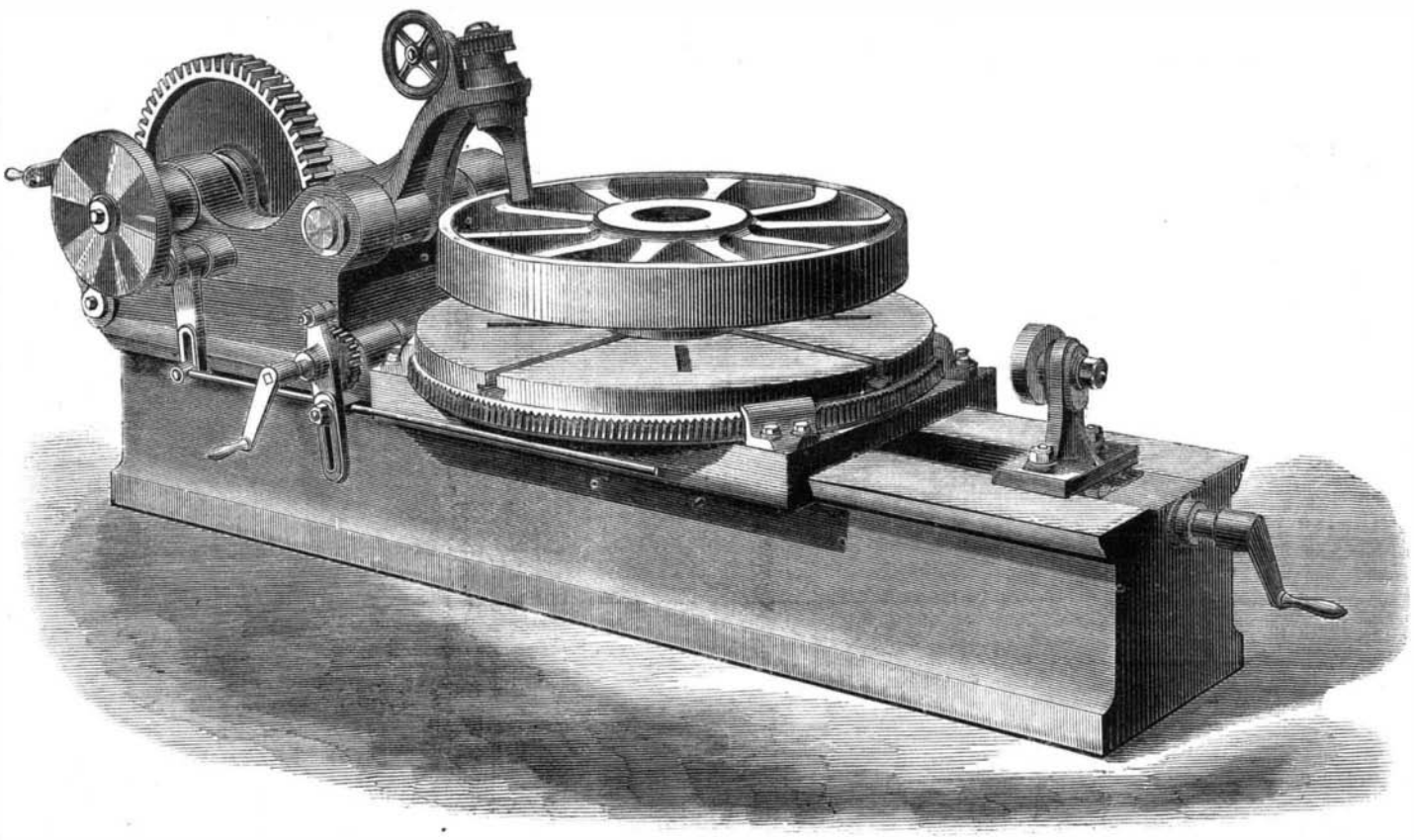
FINISHING LOCOMOTIVE WHEELS.

It has of late years become the custom—and a very good one too—to bestow much greater care upon the finish of locomotive engine wheels than was formerly the case, and, as a result, several special machine tools have been introduced for the purpose of trimming off wheels, which in Europe are universally f wrought iron, and thus saving hand labor.

We illustrate a machine for this purpose by Mr. F. W. Webb, locomotive engineer to the London and Northwestern Railway Company. It is a curvilinear slotting machine, and the tool is mounted in a holder provided at one end of a vibrating lever, the other end of this lever being slotted, and being fitted with a sliding block, into which the pin of a disk crank enters. As the crank disk revolves with its upper edge approaching the fulcrum of the lever, the effect of the arrangement is to give the tool holder a slow downward and a quick return stroke. The point of the tool, of course, describes an arc of a circle struck from the center of the vibration of the lever, thereby producing a convex form on the inside of the tyre, and so giving additional strength to the rim. The wheel bed plate is revolved by suitable automatic mechanism, as shown, somewhat similar to the devices ordinarily employed in planing machines. Provision is made for wheels of any diameter, by means of the crank and screw shown on the right of our engraving.



WEBB'S WHEEL FINISHING MACHINE.

WOOL WASHING MACHINERY.

In scouring wool, the operator has to insure that a constant supply of the washing fluid be continuously and intimately brought into contact with the material, and that a plentiful supply of rinsing water be at hand. To this end, the washing machines are constructed with several cylinders, that the wool may be repeatedly washed and rinsed. This system is known to the trade as "the leviathian," and the apparatus has been frequently improved in form and efficiency till last year, when Messrs. J. & W. McNaught, of Rochdale, England, exhibited at Vienna the machine of which we publish an engraving.

Fig. 1 represents the machine, used as a single self-acting wool washing apparatus for smaller quantities of wool, while Fig. 2 shows the transferring apparatus provided for carrying the wool from one washing reservoir to another in a series of machines. The arrangement of the working parts of this apparatus will be easily understood from the engravings. The washing reservoirs are provided with double bottoms, and are connected with each other by the tube, H, through which the washing fluid can pass from one reservoir to the other; this movement is effected in a peculiar manner, a steam injector being fixed in the tube, H, the steam jet of which, when acting, forces the fluid, through H, into the first reservoir, from whence it can pass back again into R as soon as it has reached the hight of the communicating pipe. The wool is put in motion in the reservoirs by means of swing rakes, which are moved in the manner shown in our engraving.

The transferring arrangement for the wool is as follows: The rod, *u*, is jointed to one end of the link, T, while the other end of this link works on an adjustable center carried by a slotted bracket, *b*. The lower end of the rod carries rakes, A, which pierce through the wool, while a bush connected with the crank, *r*, the axis of which is put in rotation by wheel gear, can slide along the rod, *u*, whence the rotation of *r* produces an elliptical motion of the points of the rakes, A; the larger axis of this ellipse is in the direction of the motion of the wool, and the points of the rakes are through one half the curve in connection with the wool, and travel forwards, while they rise above the wool and travel backwards through the second half of the curve. The rakes which carry the wool forward through the troughs are similarly arranged; and at the point of contact of each of the curves described by the four systems of rakes, as shown in Fig. 1, fixed rakes are provided, through which the wool is pressed on one side and caught on the other side by the descending rakes of the next system,

Fig. 1.

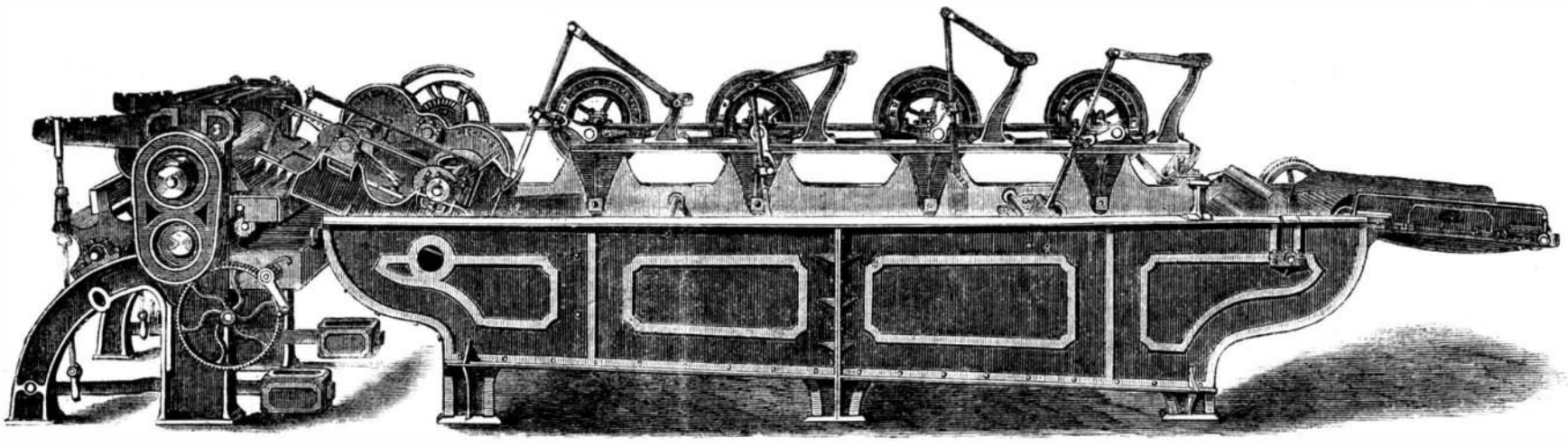
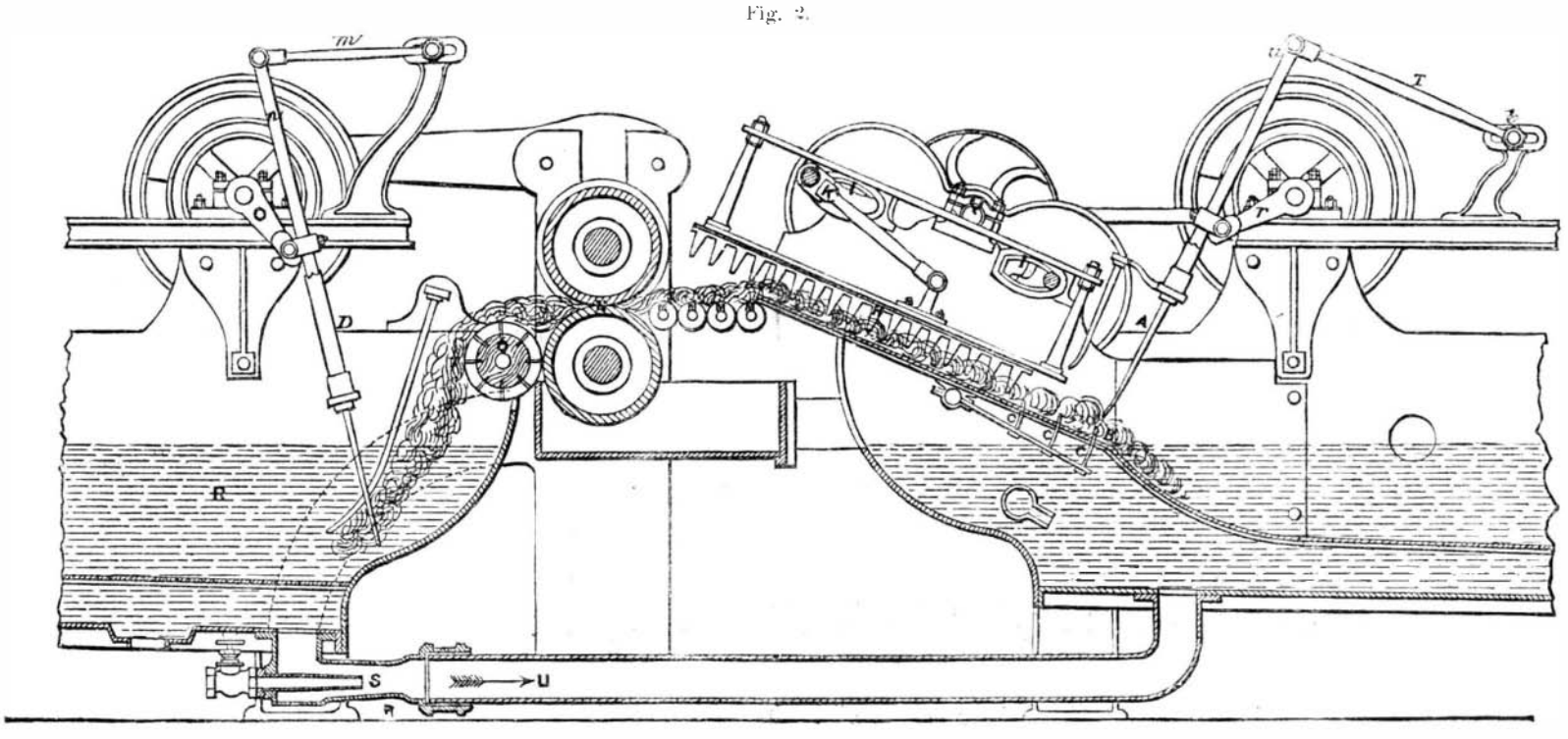


Fig. 2.



McNAUGHT'S LEVIATHAN WOOL WASHING MACHINE.