

Improved Lathe for Dentists, Model Makers, etc.

Dentists, amateurs, and others who use the foot lathe, experience more or less annoyance from their inability to stop the head spindle suddenly, the momentum of the fly wheel being difficult to overcome. This entails a great loss of time, particularly if the work is to be examined frequently. The lathe herewith represented is intended to obviate these objections.

The driving shaft, carrying the cone pulleys and a small fly wheel, is mounted in a frame, A, under the head stock of the lathe, and is pivoted on stands secured to the rear bar of the lathe, so that the frame, with shaft and wheels, may be raised or lowered to a certain extent.

The wheel shaft projects beyond the end of the lathe, and carries a fixed ratchet wheel at the extreme end. Between the ratchet and the box of the shaft is a flanged pulley, turning loosely on the shaft, sufficiently wide to receive two narrow belts side by side. One of these is attached to the long arm of a pendulum lever, B, the shaft, C, being its fulcrum. To the other, or short arm of the lever, is pivoted the rod that connects with the treadle at D. Another narrow belt, which the flanged pulley receives, is fastened at one end to a guide bar or bow, E, pivoted to the long or lower arm of the lever, B. The other end of both these belts is secured to the face of the loose-flanged pulley, in such a manner that when one is wound on the pulley the other is unwound, as when the foot of the lever is furthest from the shaft the strap secured to B is run out, while that secured to E is wound up. A spring, G, balances the weight of the treadle and its appurtenances. A pawl and light spring on the outer head of the flanged pulley serves to make connection between the loose pulley and shaft by means of the ratchet. A bell-crank lever at H connects by a rod with the pivoted frame, A, by which the frame can be raised to slacken the belt, or lowered to tighten it. When raised, the driving belt will be slackened, so that the spindle may be instantly stopped. The treadle stops as soon as the foot is removed, and always at the highest point, while the driving shaft continues to revolve. It is evident that a very high speed may be obtained by this contrivance, while the stroke of the operator's foot may be of any limit required.

E. P. Rider, 220 Center street, New York city, manufactures these lathes largely to order for model makers, mathematical instrument makers, watchmakers, etc.

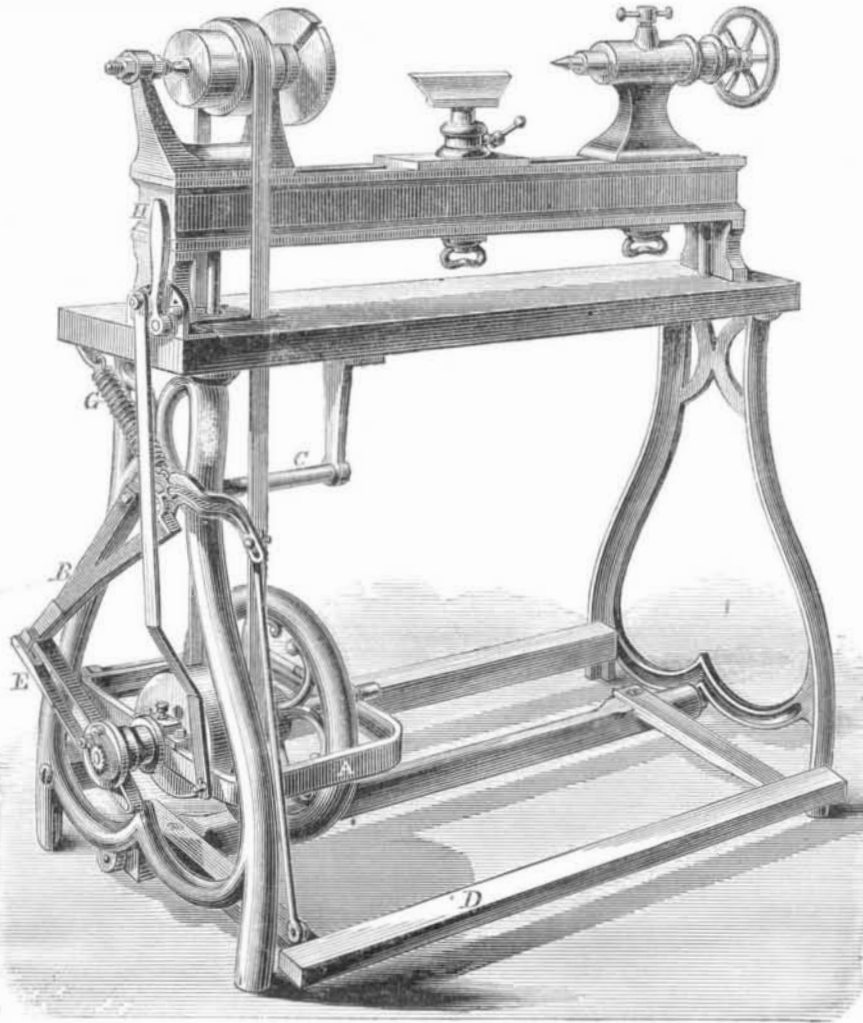
Improvement in Oiling Shaft Bearings and Loose Pulleys.

Some months ago we took occasion to speak, through our columns, on the enormous waste of lubricating oil in shops and manufactories, referring not only to oil used for tapping, cutting bolts, turning, and polishing, but to the waste in lubricating journals and bearings. The ordinary way of filling the cup on the top of a box, eccentric, or strap of a connecting rod, must of necessity entail a large percentage of waste. Centrifugal force throws the oil from the shaft, and it escapes from the box of a shaft at the ends and drops to the floor or is received into drippers. If contained in a cup on an eccentric, or strap embracing a wrist pin, the oil is thrown, in the same way, from the shaft rather than toward it. Loose pulleys, especially, waste the oil intended for their lubrication. At every revolution the oil is thrown out through the holes made for its reception.

If cotton waste or other porous material is used to retain the oil and conduct it to the frictional surface, it soon becomes foul and needs to be frequently changed and fresh oil introduced. All the usual methods of oiling introduce the oil to the surface of the shaft from the outside; but the plan represented in Fig. 1 of the engravings is entirely different; the oil is placed in the center of the shaft and is fed or thrown outward to the surface. The engraving represents the ordinary counter shaft for a screw-cutting engine lathe, part of it in section and part in perspective. The shaft is hollow, plugged at the end by a screw. At the points where the journals come, a series of small holes are drilled from the outside to the central cavity; so, also, where the loose pulleys run and the clutch works.

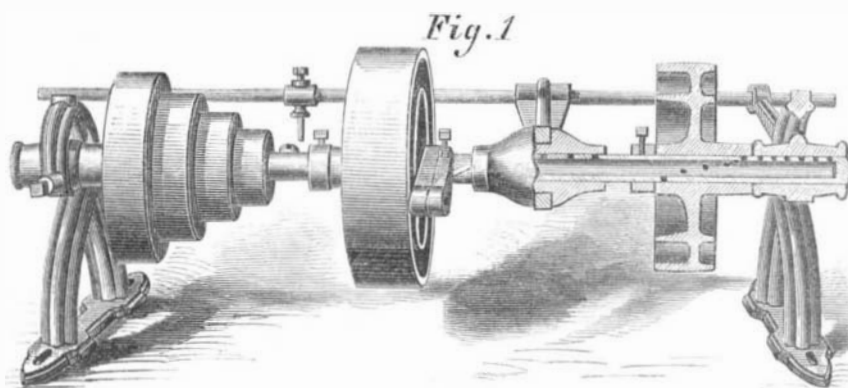
These holes may be drilled in line or on a spiral, as may be considered most advisable. The internal cavity of the shaft

is filled with oil through a hole in the side, that is stopped with a screw having a leather or rubber washer under its head. The apertures for the escape of the oil to the outside of the shaft are closed by little disks or plugs of leather to prevent undue leakage. Leather is found to permit the oil to pass freely through, sufficient for the purposes of lubrication, while the machinery is in motion, but, still, to prevent leakage when the shaft is at rest. Mr. Olmsted says that a countershaft for a lathe swinging fourteen inches, having two loose pulleys and two bearings, although in constant use, was run for eighteen months without re-oiling, the oil being contained in the shaft the space of which was that of a tube thirty inches long

**FOOT LATHE WITH IMPROVED DRIVING ATTACHMENT.**

and half an inch in diameter. Other statements of a similar nature, by those who have made satisfactory tests of this method during the past four years, and are still using it, might be repeated. It is applicable to nearly all bearings and loose pulleys, and is in use on engines to oil crank pins, eccentrics, crossheads, etc. It is especially valuable on wood-working machinery which requires a rapid motion. The oil, being preserved from the air, does not oxidize or thicken, but remains pure and limpid.

There are some bearings in machinery where a hollow shaft is inconvenient or impossible. In such a case the inventor proposes a cup oiler as shown in Fig. 2. The globe is preferably of glass to exhibit the state of the oil. A stem of metal is inserted into the lower part of the globe, fitting by means of a gland of cork, the other end passing through the cap of a box, or the strap of a connecting bar or pitman, and reach-

**OLMSTED'S PATENT SELF-OILER.**

ing the surface of the shaft, or wrist pin. To hold the stem in the requisite position a moveable friction ring on the stem rests on the outside of the box, and the bottom of the stem or tube is plugged with a leather disk resting on an internal collar, as seen in the engraving.

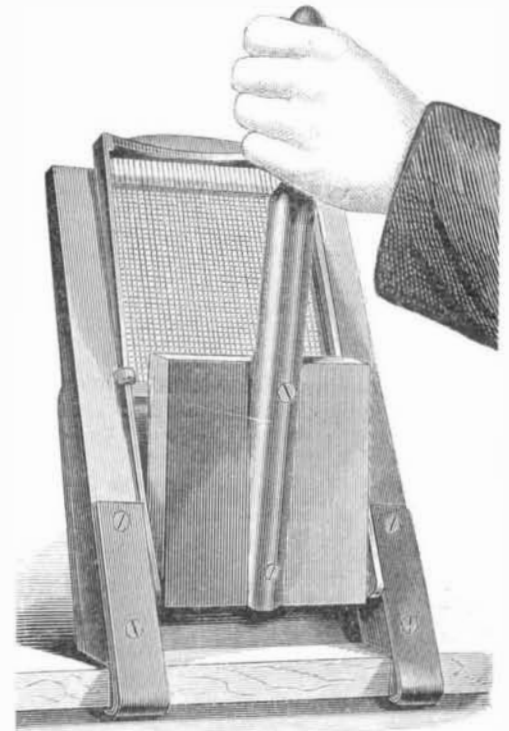
These oilers have stood a long and severe test, and been found to operate satisfactorily. The rotation of the shaft wipes the oil that exudes through the leather on to the shaft; but when the shaft is at rest the oil will cease to pass through and none will be wasted. There is nothing to get out of order, no screws to adjust, and no continual watching necessary.

Patented January 21, 1868, by L. H. Olmsted, manufacturer of fine machinists' tools, whom address at Stamford, Conn., or No. 1, Centre street, New York City.

BROWN'S VEGETABLE MASHER.

The pulping of vegetables preparatory to cooking or serving on the table is somewhat laborious, and the necessity of removing the rind or skin before this can be done, demands considerable time. To save this time and avoid much of the labor, the implement seen in the engraving has been contrived. By it potato, turnip, squash, stewed apple, and other vegetables and fruits, may be mashed or reduced to pulp without removing the skin, which is rejected and passed to one side.

It is a simple frame consisting of two uprights, or inclines, connected at top and bottom by cross bars, and adapted, as seen, to fit on a table or bench. The upper portion of the main frame has a series of parallel rods or wires, the interstices of which are



small enough to prevent the passage through of parings or skin. Directly over this is another similar frame with wires running transversely to those of the main frame, so that the two combined form a sieve. A crusher, consisting of a block fitting the sieve, and a handle, has pivots or projections on its lower end traversing in slots in the sides, by which it may be moved up and down or to and from the sieve.

The operation is perfectly simple. In mashing potatoes, for instance, the potato is fed in with one hand while the masher is worked by the other; the pulp passing through the sieve, and the peel dropping down from the front of the sieve into a pan or other receptacle. The implement may be used in any position—horizontal, inclined, or vertical. Its parts may be easily separated for cleansing.

Patented through the Scientific American Patent Agency, May 19, 1868, by E. Brown. For further particulars address E. Brown, or Geo. D. Wright, at Burlington, Vt.

Excitement and Short Life.

The following, by an unknown writer, accords with our observation: The deadliest foe to a man's longevity is an unnatural and unreasonable excitement. Every man is born with a certain stock of vitality, which cannot be increased, but which may be husbanded or expended rapidly, as he deems best. Within certain limits he has his choice, to live fast or slow, to live abstemiously or intensely, to draw his little amount of life over a large space, or condense it into a narrow one; but when his stock is exhausted he has no more. He who lives abstemiously, who avoids all stimulants, takes light exercise, never overtasks himself, indulges no exhausting passions, feeds his mind and heart on no exciting material, has no debilitating pleasures, lets nothing ruffle his temper, keeps his "accounts with God and man duly squared up," is sure, barring accidents, to spin out his life to the longest limit which it is possible to attain; while he who lives intensely, who feeds on high seasoned food, whether material or mental, fatigues his body or brain by hard labor, exposes himself to inflammatory disease, seeks continual excitement, gives loose reign to his passion, frets at every trouble, and enjoys little repose, is burning the candle at both ends, and is sure to shorten his days.

MR. A. L. HOLLEY, Engineer of the Pennsylvania Steel Works, at Harrisburg, has also been appointed engineer of the Bessemer Steel Works of Messrs John A. Griswold & Co., Troy. These works, originally built by Mr. Holley, and consisting of a two-ton converter and a pair of five-ton converters and plant, were partially destroyed by fire in October. The small converter is already in operation and the works will be immediately rebuilt and considerably extended.