

J. LAURENT.
MACHINE FOR TURNING WATCHCASES.

Fig. 1.

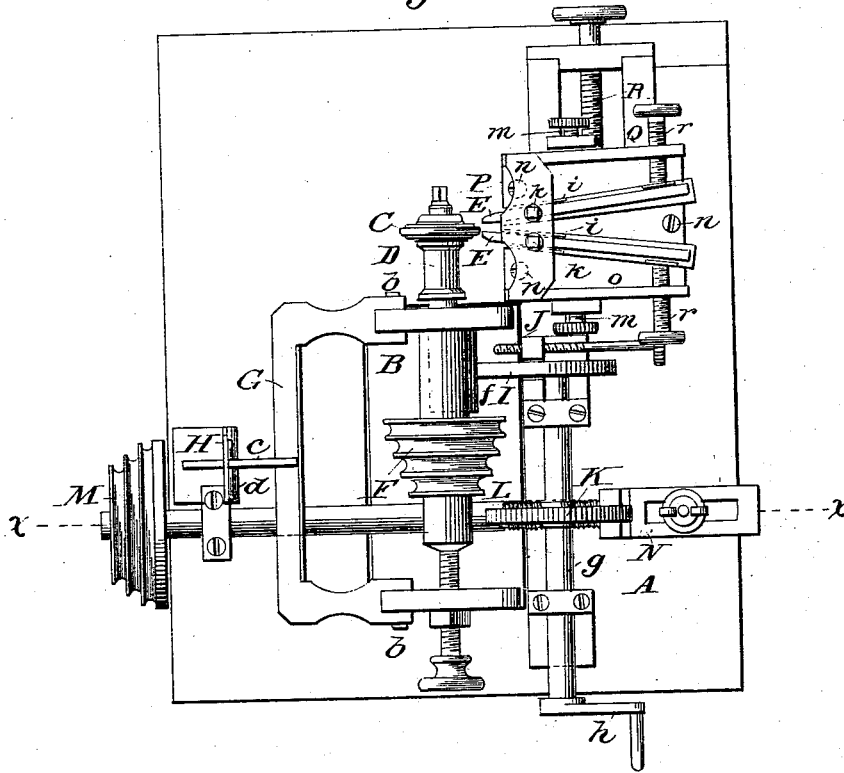


Fig. 3.

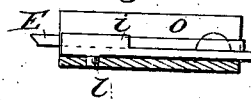
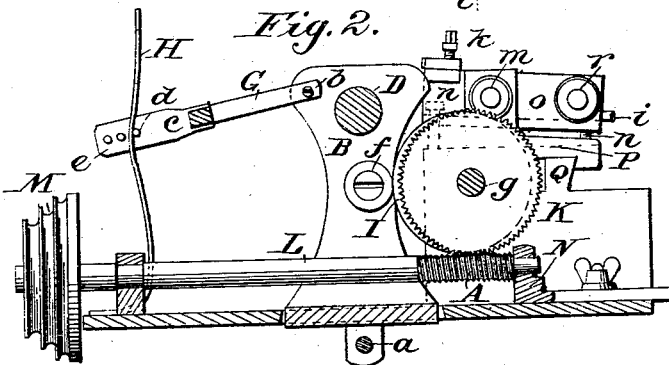


Fig. 2.



Witnesses:
McCoombs
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Inventor:
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JACQUES LAURENT, OF NEW YORK, N. Y.

Letters Patent No. 93,892, dated August 17, 1869.

IMPROVED MACHINE FOR TURNING WATCH-CASES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JACQUES LAURENT, of the city, county, and State of New York, have invented a new and useful Improvement in Lathes Applicable to Turning Watch-Cases, and other purposes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a plan view of a lathe constructed in accordance with my improvement;

Figure 2, a vertical section, taken as indicated by the line *x x* in fig. 1; and

Figure 3, a longitudinal vertical section through one of the turning-tools, in illustration of its swivelling attachment to a carrier or tool-holder.

While applicable to operating on various articles or descriptions of work, it will here suffice to describe my invention as applied to turning watch-cases.

Said invention consists in certain novel combinations and arrangements of parts whereby great facility is afforded for establishing and throwing back or breaking the feed of the work to the cutters; likewise for adjusting and operating the latter.

Referring to the accompanying drawing—

A represents the bed-portion of the lathe, and B the mandrel head-stock, which is connected with said bed by or on a shaft, *a*, so as to admit of its having a swinging motion, for the purpose of directing the watch-case or work C, carried by the mandrel D, toward and from the cutters E E.

Rotary motion is communicated to the mandrel D by any one of a series of pulleys, F.

Said head-stock B has pivoted to it, as at *b b*, a frame or back-strap, G, which has branching from it in the rear, an arm, *c*, that projects through a slotted spring, H, secured at its lower end to the bed, and which serves to bear the swinging head-stock toward the line of the cutters, by said spring pressing against a pin, *d*, passed through any one of a series of holes, *e*, made in the arm *c*. Such application of the spring bears up the work in a soft, elastic manner, against the cutters.

To secure to the work a gradual feed of it at intervals up against or over the cutters as effected by the spring H, through the swinging head-stock B, said head-stock is provided with a roller, *f*, which bears or rests against the edge of a revolving eccentric-shaped cam, I, that, as it rotates, limits and controls the forward or feeding-stroke of the swinging head-stock, and in due course returns it against the pressure of the spring H, to its original position for establishing a fresh cut, as required.

As, however, it may be seldom or never necessary to give to the swinging head-stock its full stroke, as

regulated by the cam I, and as it is requisite to adjust such stroke according to the requirements of the work, I provide an adjusting-screw, J, against which the roller *f* is made to but or bear in the feeding-stroke of the head-stock prior to, or in advance of the lesser projecting portion of the cam coming round for the roller *f* to strike or bear against it.

The eccentric or cam I is made fast to a shaft, *g*, which carries on it a worm-wheel, K, that gears with a screw, L, set in motion or rotated by any one of a series of pulleys, M.

This screw or screw-shaft L is supported at one of its ends in a sliding and adjustable wedge-shaped or tapering bearing, N, which, when set back, drops said shaft so as to throw its screw out of gear with the worm-wheel K, which arrests the automatic operation of the mandrel head-stock, and admits of it being rapidly thrown back to draw off the work from the cutters by turning the shaft *g*, through a crank or handle, *h*.

The cutters E E occupy a stationary position during the performance of the work, that is, in a transverse direction to the mandrel, and are used in pairs to operate simultaneously on both sides of the band of the watch-case C. Such fixed relationship of the cutters to the work, which is moved up against them, conduces to steadiness, and is otherwise advantageous.

Said cutters are set angling, as represented, being spread apart toward their rear or back ends, and are carried in sockets, *i i*, through which they may be projected, as required, or from which they may be drawn out, for sharpening or other purposes, on slackening holding-down screws *k k*.

Each of these sockets is hung to swivel on or by a vertical pivot, *l*, on a tool-holder, O, which is suspended, so as to be capable of rocking on side pivots or screws, *m m*, passed through cheeks of a sliding carriage, P, that rests on a bed, Q, and is adjustable by a screw, R, along the same, in a direction which is parallel with the mandrel, to move the cutters along or against them, to the work in such direction.

The suspension of the tool-holder O, on the side pivots *m m*, serves to provide for more or less dip or elevation of the cutters at their cutting or forward ends, which set may be regulated and fixed by means of screws, *n n n*, passing through the tool-holder, and bearing on the carriage P, which sustains it.

A further adjustment of the cutters E E, in an easy and nice manner, to regulate their distance apart at their forward or cutting-ends, is also provided for by means of screws, *r r*, arranged to pass through the sides of the tool-holder O, and bearing on or against the sides of the cutter-sockets *i i*, hung to swivel on vertical pivots, as described.

A lathe thus constructed and provided, not only affords every facility for turning up watch-cases, but for operating on various kinds of work.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the swinging head-stock B, the mandrel-spring H, roll *f*, and revolving eccentric or cam I, essentially as herein set forth.

2. The combination of the adjustable wedge-shaped or tapering bearing N, the screw L, the worm K, the

eccentric I, the screw J, and the roller *f*, with the swinging head-stock B, substantially as specified.

3. The cutters E E, arranged in sockets *i i*, hung or supported on vertical pivots, and made capable of adjustment by screws *r r*, to spread them more or less apart, essentially as described.

JACQUES LAURENT.

Witnesses:

JOHN D. ROSSET,
HENRY PALMER.