

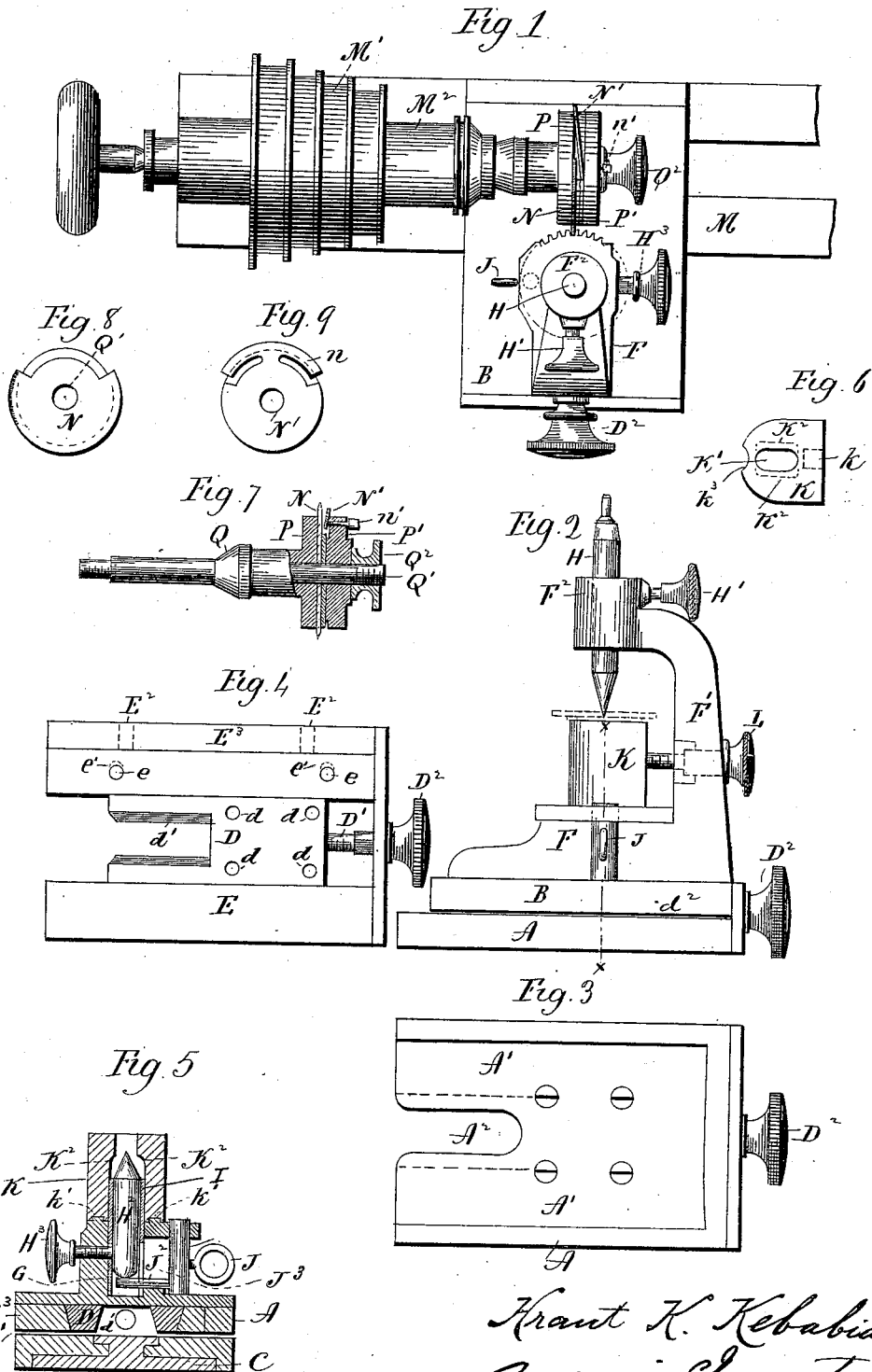
(No Model.)

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WHEEL CUTTING FIXTURE FOR WATCHMAKERS' LATHES.

No. 512,550.

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WHEEL-CUTTING FIXTURE FOR WATCHMAKERS' LATHES.

SPECIFICATION forming part of Letters Patent No. 512,550, dated January 9, 1894.

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To all whom it may concern:

Be it known that I, HRANT K. KEBABIAN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new Improvement in Wheel-Cutting Fixtures for Watchmakers' Lathes; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view showing the application of my improved fixture to an ordinary watch-maker's lathe, only a portion of which is represented; Fig. 2, a detached view of the device in side elevation; Fig. 3, a reverse plan view of the device; Fig. 4, a similar view with the lower base-piece removed; Fig. 5, a view of the device in vertical transverse section on the line $x-x$ of Fig. 2; Fig. 6, a detached plan view of the anvil; Fig. 7, a sectional view of the cutter; Fig. 8, a detached view of the milled disk thereof, and Fig. 9, a similar view of the guide thereof.

My invention relates to wheel-cutting fixtures for watch-makers' lathes, the object being to produce a simple, compact, comparatively inexpensive device, composed of few parts, adjustable for the reception of watch-wheels of all ordinary sizes, and adapted to do accurate work with the minimum expenditure of time and labor.

With these ends in view, my invention consists in a wheel-cutting fixture having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

My improved device comprises a lower base-piece A, and an upper base-piece B, the former being adapted to be removably secured to an ordinary lathe-rest, and the latter being longitudinally movable on the former. The said base-plate A, has a large shallow, rectangular recess A', formed in its lower face, and conforming in dimensions to those of the rest of an ordinary watch-maker's lathe of standard size, the said recess opening through the inner end of the base-piece to adapt the same to be readily slipped over the rest, upon which it is then confined to longitudinal movement inward and outward, being held against lat-

eral displacement thereupon. A central longitudinal slot A², formed in the said lower base-piece and opening through the inner end thereof, is designed to receive the ordinary stud or T-head, which forms a part of a lathe-rest, and which holds the said base-piece, and hence the fixture, down upon the same.

In Fig. 5 of the drawings I have shown, in a transverse section, a lathe-rest C, having a stud or T-head C', both of ordinary construction, and as heretofore mentioned. The said lower piece is provided upon its upper face, and directly in the rear of the said slot A², with a block D, which may be formed independent of and attached to it by screws d , as shown, or which may be formed integral with it, if preferred. The said block is adapted at its outer end to receive a horizontal adjusting-screw D', mounted in a flange B' depending from the outer end of the upper base-piece B, and furnished at its projecting outer end with a knurled thumb-nut D², which is rotated to move the said upper base-piece inward and outward over the lower base-piece with which it is connected by means of the said block. To receive the said block, which has beveled edges, the upper base-piece is provided upon its lower face with an under-cut longitudinal rib E, and an under-cut longitudinal bar E', of which the former is made integral with or fixed to the said base-piece, and the latter, which is the narrower of the two, adapted to be moved laterally or sidewise for taking up wear, by means of two adjusting-screws E² E², impinging against its outer edge, and mounted in a narrow rib depending from the adjacent edge of the upper base-piece, to which the said movable rib is attached by means of screws $e e$, passing through laterally elongated screw-holes $e' e'$, formed therein. The block is made slightly thicker than the space between the rib E and bar E' is deep, so that they do not rest upon the upper surface of the lower base-piece, a slight space d^2 being formed between the two base-pieces, as shown in Fig. 2 of the drawings. The forward end of the block is constructed with a long clearance-slot d' , corresponding to the slot A² in the lower base-piece, and provided to clear the stud C', by means of which the fixture is secured to the lathe-rest C, as already set forth. The up-

per base-piece B, I provide with a table F, and an upright F'. The upper end of the said upright is bent forward, and furnished with a vertical sleeve F², the bore of which is located directly over a socket G, formed in the said table, which, with the said upright, is located in the longitudinal center of the upper face of the said base-piece. The said table and upright are preferably formed in one piece, and secured to the upper base-piece, but if desired, they may be formed independently, and secured thereto, or they may be made integral therewith. The sleeve F², before mentioned, receives the upper centering-pin H, which is held in place by means of a clamping-screw H', while the socket G, in the table F, receives a short lower centering-pin H², which is secured in the right vertical adjustment by a clamping-screw H³, arranged horizontally in the table, and extending over the upper base-piece, as shown in Fig. 5 of the drawings. Inasmuch as the socket G, is comparatively short, I virtually extend it so as to form a longer bearing for the pin H², by means of a bearing-sleeve I, extending upward from the face of the table, as shown in said Fig. 5 of the drawings, and in order to facilitate getting hold of the said pin for removing it, I provide the table with a lifting device, consisting of a finger-piece J, a short vertically movable shaft J' mounted in the table, and having the said finger-piece attached to it, and a horizontal lifting-pin J², extending inward from the lower end of the said shaft, through a vertical slot J³, formed in the table, and under the pin H², the said lifting device comprising the parts mentioned, being located on the opposite side of the table from the clamping-screw H³. It will be readily understood that by loosening the set-screw and relieving the pin, the same may be readily lifted, so that it can be grasped by the fingers for removal from the fixture, by lifting on the finger-piece J. I do not limit myself to the use of this lifting device, but I prefer to use it on account of its convenience. In order to get a sufficiently long bearing for the short centering pin, I prefer not to have its upper end project far enough above the bearing-sleeve to permit it to be grasped for removal, and hence my preferred use of a lifting device. Heretofore the lower centering-pin has been made much longer, and arranged to extend below its bearing for a sufficient distance to be grasped and manipulated from its projecting lower end, but my device compels the use of a short centering pin, for a long centering-pin would interfere with its application to a lathe-rest. An anvil K, supported upon the said table, forms a rest for the wheels while they are being operated upon. The said anvil is oblong in general form, its inner end being rounded, and its outer end being squared, and its center constructed with an elongated slot K', through which the lower centering-pin H² passes, and the lower portion of the said slot being offset

as at K² K³ for the reception of the bearing-sleeve I, which assists in holding the said anvil in place. The rear end of the anvil is furnished with a central horizontal threaded socket k, which receives an adjusting-screw L, mounted in a horizontal position in the upright F'. The said screw is provided for adjusting the anvil inward or outward, independently of either base-piece, according to the size of the wheel to be cut, the elongated form of the slot K' before mentioned, permitting such adjustment in which the anvil is guided by dove-tails k' entering recesses in its lower edge, and located upon the upper face of the table on opposite sides of the socket G, therein, and extending parallel with the length thereof. The extreme inner edge of the anvil is slightly cut away, as at k³, as shown in Fig. 6 of the drawings, to receive the cutter, in operating upon very small wheels.

My improved fixture is applicable to use with watch-makers' lathes of ordinary construction, and not necessary to be described herein. In Fig. 1 of the drawings the bed M and cone M' of such a lathe are shown. The cutter employed with my improved fixture comprises a milled disk N (Fig. 8) and a guide N' (Fig. 9) and two disks P P', (Fig. 7) of ordinary construction and arrangement. The said parts are mounted, when used with my fixture, upon an arbor-like chuck Q, the outer end whereof is thereto provided with a reduced stem Q', which is threaded to receive a centrally perforated internally threaded clamping-nut Q², which is screwed up against the disk P' for binding the disk N and the guide N' between it and the other disk P, which is rigidly secured to the chuck, or may be made integral therewith. The inner end of the chuck is threaded to adapt it to be secured to the lathe-head M², and has an enlarged beveled portion which centers it therein.

It will be understood that my improved fixture is to be used with an ordinary watch-maker's lathe, as one of the several fixtures thereof. As thus viewed it forms a very simple and comparatively inexpensive substitute for the complicated machine which heretofore been required for cutting watch-wheels.

In using the fixture it is applied to the rest of the lathe, and its anvil adjusted inward or outward according to the size of the wheel to be trimmed. For a large wheel the anvil will be moved well inward so as to give a wide bearing for the wheel to rest upon between its inner edge and the axis of the two centering pins; on the other hand, if the wheel is small, the anvil is moved outward so as to reduce this space, and let the cutter cut up to its edge.

In my improved anvil there is sufficient range of adjustment to accommodate the fixture to watch-wheels of all ordinary sizes, whereby I avoid the use of a set of rests for different sized wheels.

My improved fixture, as will be observed,

is comparatively simple in construction, is very convenient to use as both hands of the operator are left free, and capable of being adjusted to take in all ordinary wheels.

5 I would have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of
10 my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a wheel-cutting fixture for watch-makers' lathes, the combination with an upper and
15 a lower base-piece, the latter being adapted to fit over and be secured to a lathe-rest, and the former being movably mounted upon and directly over the latter, of means for adjust-
20 ing the said upper base piece upon the said lower base-piece, an upper and a lower centering-pin carried by the upper base-piece and located one above the other in the same vertical plane, and the lower pin being a short
25 pin, and terminating at its lower end above the lower base-piece, and always clearing the same, an adjustable anvil for supporting the work between the pins, mounted upon the said upper base-piece, and means for adjust-
30 ing the anvil back and forth in a horizontal plane, substantially as described.

2. In a wheel-cutting fixture for watch-makers' lathes the combination with an upper and
35 a lower base-piece, the latter being adapted to be attached to a lathe-rest, and the former being movably mounted upon and directly over the latter, of means for adjusting the said upper base-piece on the said lower base-
40 piece, a table located upon the upper base-piece and containing a vertical socket, an upright also located upon the upper base-piece, and furnished with a sleeve extending over the said socket, a centering-pin mounted in
45 the said sleeve, a short centering pin located in the said socket, an anvil supported upon the said table, and constructed to fit over the said short centering-pin, a lifting-device mounted in the upper base-piece for lifting
50 the said short pin, and means for adjusting the anvil back and forth in a horizontal plane, substantially as described.

3. In a wheel-cutting fixture for watch-makers' lathes, the combination with an upper and
55 a lower base-piece, the latter being adapted to be attached to a lathe-rest, and the former being movably mounted upon the latter, of means for adjusting the said upper base-piece on the said lower base-piece, a table located upon the upper base-piece, and containing a
60 vertical socket, an upright also located upon the upper base-piece and furnished with a sleeve extending over the said socket, a centering-pin mounted in the said sleeve, a short centering-pin located in the said socket, an
65 anvil supported upon the said table and constructed with an elongated slot adapting it to fit over the said short centering-pin, and

means for adjusting the anvil inward and outward, substantially as described.

4. In a wheel-cutting fixture for watch-makers' lathes, the combination with an upper and
70 a lower base-piece, the latter being adapted to be attached to a lathe, and the former being movably mounted upon the latter, of means for adjusting the said upper base-piece
75 on the said lower base-piece, a table located upon the upper base-piece, containing a vertical socket, and having a bearing-sleeve forming an upward continuation thereof, an upright also located upon the upper base-
80 piece, and furnished with a bearing-sleeve extending over the said socket, a centering-pin mounted in the said sleeve, a short centering-pin located in the said socket, and bearing-sleeve, and an anvil supported upon
85 the said table, and constructed to fit over the said short centering-pin and bearing-sleeve, substantially as described.

5. In a wheel-cutting fixture for watch-makers' lathes, the combination with an upper
90 and a lower base-piece, the latter being adapted to be attached to a lathe-rest and the former being movably mounted upon the latter, of means for adjusting the said upper base-
95 piece on the said lower base-piece, a table located upon the upper base-piece, and containing a vertical socket, an upright also located upon the upper base-piece, and furnished with a sleeve extending over the said
100 socket, a centering-pin mounted in the said sleeve, a short centering-pin located in the said socket, an anvil supported upon the said table, and constructed to fit over the said short centering-pin, and a lifting-device
105 mounted in the said table for lifting the said short centering-pin in its socket, substantially as described.

6. In a wheel-cutting fixture for watch-makers' lathes, the combination with an upper
110 and a lower base-piece, the latter being adapted to be attached to a lathe-rest, and the former being movably mounted upon the latter, of means for adjusting the said upper base-
115 piece on the said lower base-piece, a table located upon the upper base-piece, and containing a vertical socket, an upright also located upon the said upper base-piece, and furnished with a sleeve located in line with the said socket, a centering-pin located in the
120 said sleeve, a short centering-pin located in the said socket, an anvil mounted upon the said table, and containing an elongated slot, and means mounted in the said upright for adjusting the said anvil inward and outward independently of the said base-pieces, sub-
125 stantially as described.

7. In a wheel-cutting fixture for watch-makers' lathes, the combination with an upper
and a lower base-piece, the latter being adapted
130 to be attached to a lathe-rest, and the former being movably mounted upon and directly over the latter, and provided upon its upper face with a block upon which the said upper base-piece has sliding bearing, of an

adjusting-screw mounted in the said upper
base-piece and entering the said block through
which it acts to move the said base-piece in-
ward and outward; a table located upon the
5 upper base-piece, and containing a vertical
socket, an upright also located upon the said
upper base-piece and having a sleeve located
in line with the said socket, a centering-pin
located in the said sleeve, a short centering-
10 pin located in the said socket, and terminat-
ing at its lower end above the lower base-
piece, and an anvil mounted upon the said
table, substantially as described.

8. In a wheel-cutting fixture for watch-mak-
15 ers' lathes, the combination with an upper
and a lower base-piece, the latter having a
recess formed in its lower face, to receive the
body of a lathe-rest, and constructed with a
long slot opening into its inner end to receive
20 the head of the said rest, of means for ad-

justing the said upper base-piece on the said
lower base-piece, a table located upon the
upper base-piece, and containing a vertical
socket, an upright also located upon the said
upper base-piece, and having a sleeve located 25
in line with the said socket, a centering-pin
located in the said sleeve, a short centering-
pin located in the said socket, and terminat-
ing at its lower end above the lower base-
piece, an anvil mounted upon the said table, 30
and means for adjusting the anvil back and
forth, substantially as described.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

HRANT K. KEBABIAN.

Witnesses:

JOHN C. KEBABIAN,
J. J. MCFADDEN.