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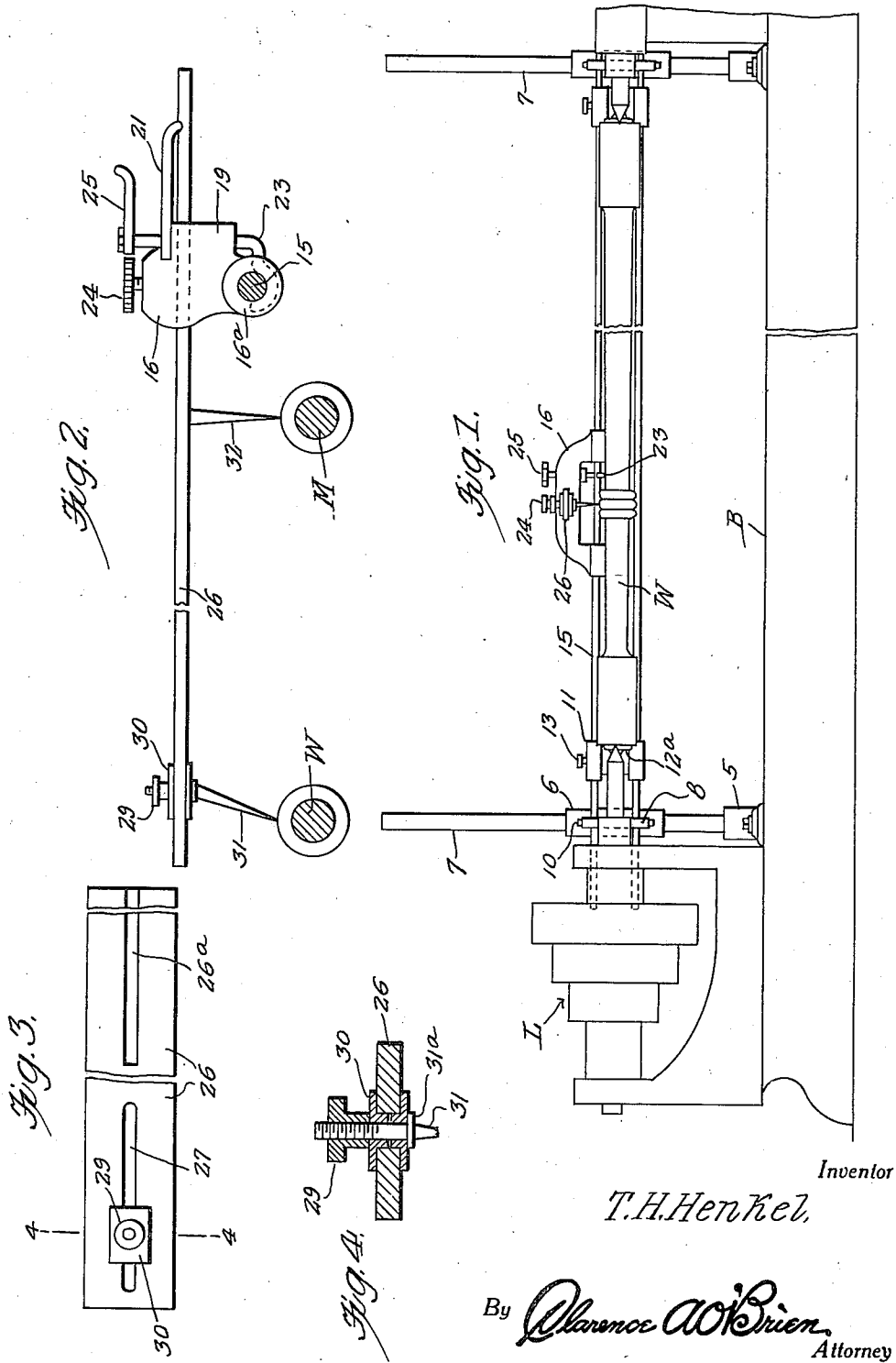
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2,057,573

DUPLICATING DEVICE ATTACHABLE TO A LATHE

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2 Sheets-Sheet 1



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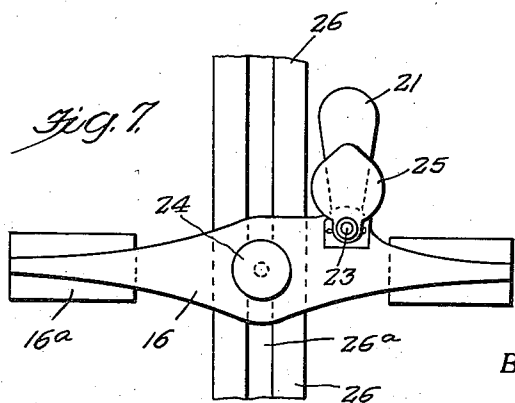
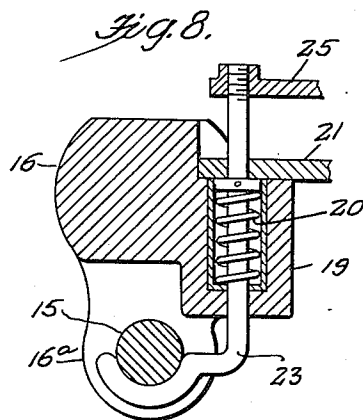
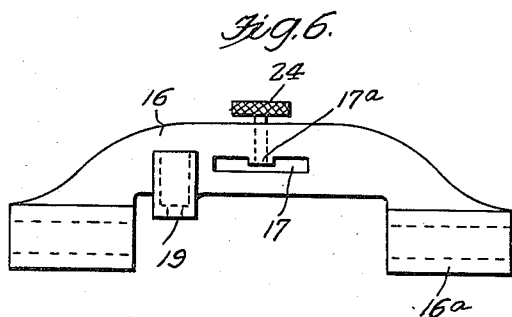
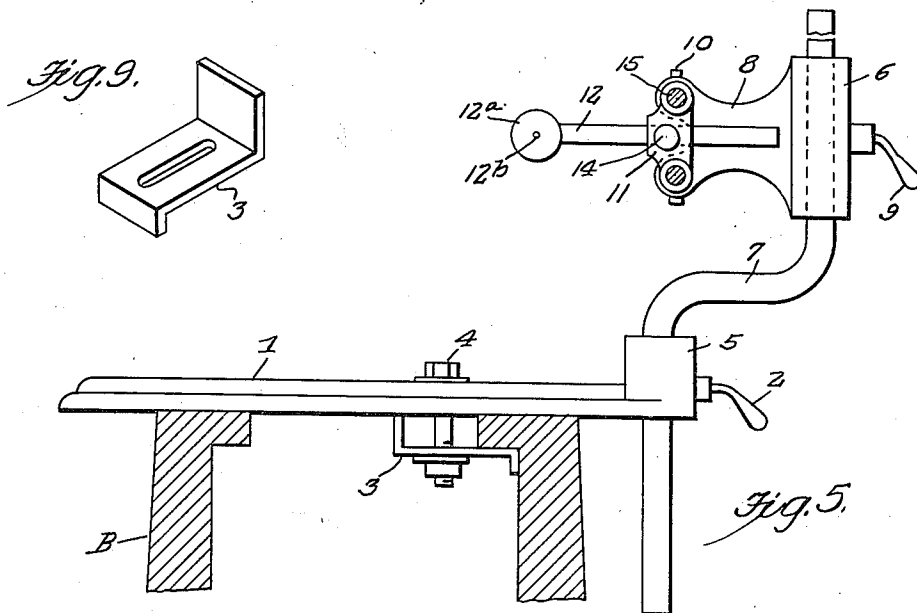
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2 Sheets-Sheet 2



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DUPLICATING DEVICE ATTACHABLE TO A
LATHE

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Application October 24, 1935, Serial No. 46,598

5 Claims. (Cl. 142—55)

This invention relates to an attachment for lathes and may be termed a latheograph.

The invention consists in the provision of a device for use in duplicating turned lathe work, and an object of the invention is to provide a device of this character which will replace the uncertain system of using templates or cardboard cut outs now generally resorted to in such duplicating operation.

A further object of the invention is to provide a device of this character which will not only assure perfect duplication but which furthermore will be absolutely safe in manipulation while the lathe is revolving.

The invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view illustrating the application of the invention.

Figure 2 is an enlarged detail view partly in section and partly in elevation showing the use of the T-arm in accordance with the present invention.

Figure 3 is a plan view of the T-arm.

Figure 4 is a detail sectional view taken substantially on the line 4—4 of Figure 3.

Figure 5 is a detail view partly in section and partly in elevation showing the manner of attaching the device to the bed of the lathe.

Figure 6 is an elevational view of the T-arm carrier.

Figure 7 is a fragmentary plan view of the T-arm and the carrier.

Figure 8 is a fragmentary sectional view showing the means for releasably clamping the T-arm carrier to a rail provided therefor and

Figure 9 is a perspective view of a lug.

Referring to the drawings by reference numerals it will be seen that L indicates generally a lathe of conventional construction and provided with the usual head and tail stocks and bed B among other parts.

My improved attachment comprises a pair of attaching plates 1 that are adapted to extend across the bed B and are provided with slots for the reception of bolts 4 through the medium of which and reversible clamp lugs 3 the plates 1 are secured at the desired adjustment on the bed B. The lugs 3 as shown are of an angular construction as to engage under the bracket plate 1 and a ledge portion of the bed B in a manner clearly shown in Figure 5.

On one end thereof each bracket plate 1 is provided with an integral sleeve 5 in which is

slidable for vertical adjustment one end of an angular standard 7. The standard 7 is secured at the desired adjustment through the medium of a locking screw 2.

Associated with each standard 7 is a bracket 8 with which is formed integrally a sleeve 6, through the medium of which and a locking screw 9 the bracket 8 is secured at the desired vertical adjustment on the standard 7.

The bracket 8 supports therebetween a pair of vertically spaced parallel rods or rails 15—15 which have their ends fitted in suitable openings provided in the bracket 8 and secured to the bracket through the medium of set screws 10.

Slidably mounted on the rails 15 are slide blocks 11 having upper and lower end portions sleeved on the rails 15, and these blocks are secured at the desired adjustment on the rails through the medium of set screws 13.

Each slide block 11 has an apertured boss portion in which is slidably fitted an arm 12 secured at the desired adjustment through the medium of a set screw 14. On one end the arm 12 is provided with a lateral disk like head 12a provided with a centre point 12b as best shown in Figure 5.

Mounted on the uppermost rail 15 for sliding movement between the blocks 11 is a carrier 16 having depending sleeve like portions 16a sleeved on the uppermost guide rail 15 as shown in Figures 1, 2, and 8.

On its rear side the carrier 16 is provided with a socket 19 and slidable vertically through the socket is the shank of a hook 23 which is adapted to engage about the uppermost rail 15 in a manner best shown in Figure 8 for releasably securing the carriage 16 at the desired adjustment on the rail.

The hook 23 is urged into engagement with the rail 15 through the medium of a suitable spring device 20 housed within the socket 19.

Suitably secured at the upper end of the pocket 19 is a stationary finger member 21 while secured to the upper end of the shank of the hook 23 is a finger piece 25 disposed above the member 21. Obviously by engaging the forefinger under the member 21 and the thumb on the member 25 downward pressure exerted by the thumb will move the hook 23 against the action of the spring 20 out of engagement with the uppermost rail 15 whereby the carriage 16 will be free for movement along the rail, and also to rotate about the rail as an axis.

What may be termed a T-arm 26 has a grooved end 26a which has a sliding fit through an open-

ing 17 provided in the carriage 16. At the top side of the slot 17 there is provided a boss 17a which fits within the groove 26a whereby the T-arm 26 is constrained for movement in a pre-determined path. For securing the T-arm 26 at the desired adjustment relative to the carriage 16 there is provided a set screw 24.

On the underside of the T-arm 26 is a perpendicular, fixed feeler point 32.

In the free end thereof the T-arm 26 is provided with a slot 27 in which is slidably engaged a channeled or grooved block or slide member 30.

An angularly disposed pointer 31 has a shank thereof extending through an opening in the block 30 and threaded on the upper end of the shank is a thumb nut 29 through the medium of which and a fixed collar 31a on the shank of the pointer 31 the pointer 31 is secured to the block 30.

It will also be noted that the block 30 is divided into upper and lower sections having lateral flanged portions that engage the T-arm 26. Obviously then by threading the nut 29 down tight the sections of the block will so frictionally engage the T-arm 26 that the block 30 will be held at the desired adjustment within the slot 27.

From the foregoing it will be seen that when the device is mounted on the lathe the rails 15 will be disposed laterally and at one side of the lathe so as to parallel the work W which is clamped between the head and tail stocks of the lathe and upon which the duplicating is to be performed.

In actual practice it will be seen that in using the device the model for the pattern to be made on the work W, and which model is indicated by the reference numeral M is clamped between the arms 12, the points 12b piercing the ends of the model. Proper adjustment of the carriage 16 is then made whereupon the feeler point 32 is placed into proper engagement with any desired portion of the model M to be duplicated while the pointer 31 automatically designates the exact spot on the work W for the operator to apply his cutting tool and in the regular manner of lathe-turning duplicate the various figures or designs of the stationary model M on the work W revolving between head and tail stock of the lathe. In this manner duplication can be designated in a quick convenient operation without stopping the lathe and without the making of, and the uncertainty attending the use of, templates or cardboard cut outs now generally resorted to for duplicating turned lathe work.

Having thus described the invention, what is claimed is:

1. A duplicating attachment for a lathe having a bed, comprising a pair of attaching plates resting on the bed transversely of the latter at the respective opposite ends of the bed, said attaching plates being provided with integral vertical sleeves, angular standards having ends slidably engaging said sleeves and means on the sleeves for securing said standards at the desired vertical adjustment, brackets having integral sleeves engaging the upper ends of said standards and provided with means for securing the brackets at the desired vertical adjustment on said standards, a pair of vertically spaced parallel guide rails supported between and connecting said brackets, slide blocks mounted on the rails for movement therealong and provided with means for securing the slide blocks at the desired adjustment, each of said slide blocks being provided with an apertured boss, an arm slidably

fitting in the aperture of each boss, and means on each boss for securing each arm at the desired adjustment, each arm being also provided at one end with a lateral disk-like head equipped with a center point for engaging an end of a model for use in the duplicating process, a carriage mounted on the uppermost one of said rails for sliding movement therealong and for rotative movement about the uppermost rail as an axis, means carried by the carriage and engageable with the uppermost rail for securing the carriage at the desired adjustment and against rotative movement relative to the uppermost rail, and a tool arm mounted on the carriage.

2. In an attachment for a lathe, a pair of brackets, means for mounting the brackets on the bed of the lathe, guide rails extending between and connecting the brackets, slide blocks mounted on the rails for movement therealong and provided with means for supporting a model between said slide blocks, a carriage mounted on the uppermost rail for sliding movement therealong and for rotative movement about the uppermost rail as an axis, a hook member mounted on the carriage for vertical sliding movement and having a bill portion engageable with the uppermost rail for securing the carriage at the desired adjustment thereon, said carriage having a body portion provided with a slot, an arm having an end engaged in the slot, means on the body portion of the bracket and engageable with said end of the arm for securing the latter at the desired adjustment, and tool elements carried by and depending from said arm.

3. In a duplicating attachment for a lathe, a pair of brackets, means for mounting the brackets on the bed of a lathe, a guide rail extending between and supported by said brackets, and a tool carriage engaging said rail for sliding movement on the rail and for rotative movement about the rail as an axis, said carriage including a body portion provided with an integral socket having a true opening in the bottom thereof, a hook having a shank extending vertically through said socket and said opening and provided at one end with a bill engaging said rail, a spring device housed within said socket and engaging the shank of the hook for normally urging the same upwardly to engage the bill of the hook with the rail, a fixed finger element on the body of the carriage and a finger element on the shank of the hook cooperable with the first mentioned finger element to facilitate manual forcing of the hook downwardly to disengage the bill thereof from said rail.

4. In a duplicating attachment for a lathe, a pair of spaced brackets adapted for securement to a lathe bed, a rail bar connecting said brackets, a tool carriage engaging said rail and movable therealong, said carriage being provided with a body having a slot therethrough and a boss extending downwardly into the slot, an arm having an end working in said slot and provided at said end with a groove receiving said boss, a screw threaded through the body of the carriage and said boss and adapted to bear against said arm for securing the latter at the desired adjustment, a fixed feeler finger depending from the underside of said arm, a slide block mounted on said arm, and a pointer depending from said slide block and disposed at an angle to the perpendicular, and means for securing the slide block at the desired adjustment on said arm.

5. In a duplicating attachment for a lathe, a tool arm provided adjacent one end thereof with

a longitudinally elongated slot, a slide block comprising a pair of complementary half-sections engaging in said slot, said half-sections having flanged portions bearing against the top and bottom surfaces of said arm, and a tool element having a shank extending through aligned openings in the sections of said block and a collar on said shank engaging one of the block sections and a nut threadedly engaged on said shank and cooperable with said collar for urging the sections of the block toward one another and the flanges of said block sections into engagement with the arm for securing the block at the desired adjustment. 5

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