(No Model.)

J. J. PEARD.

COUNTER REST FOR LATHES.

No. 415,219. Patented Nov. 19, 1889.

FIG. I.

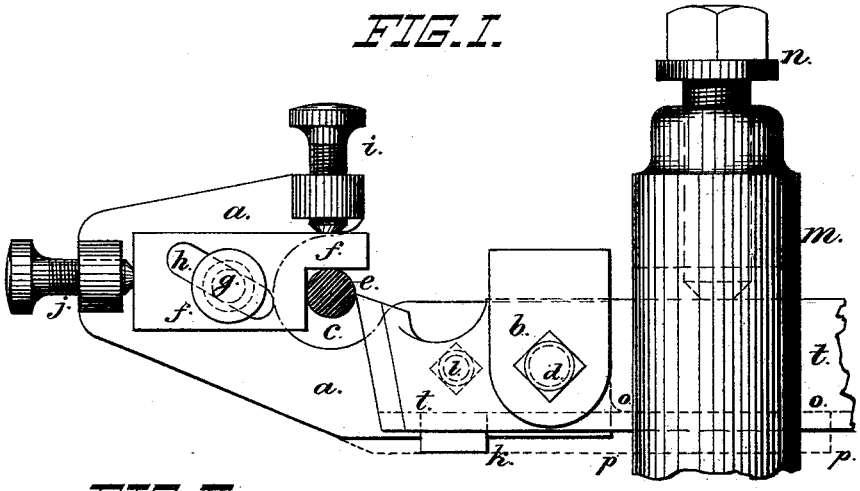


FIG. II.

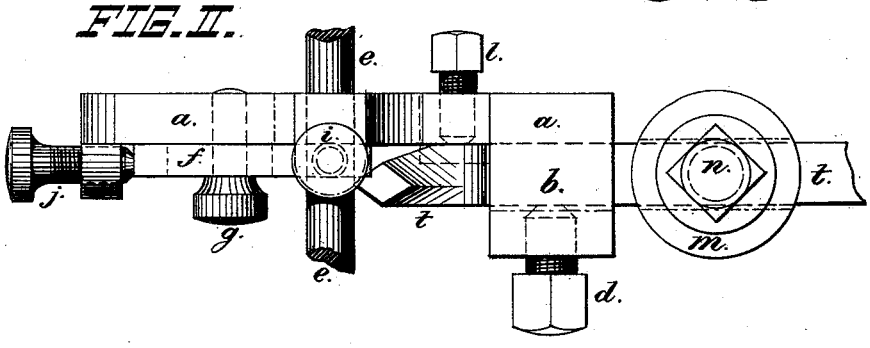
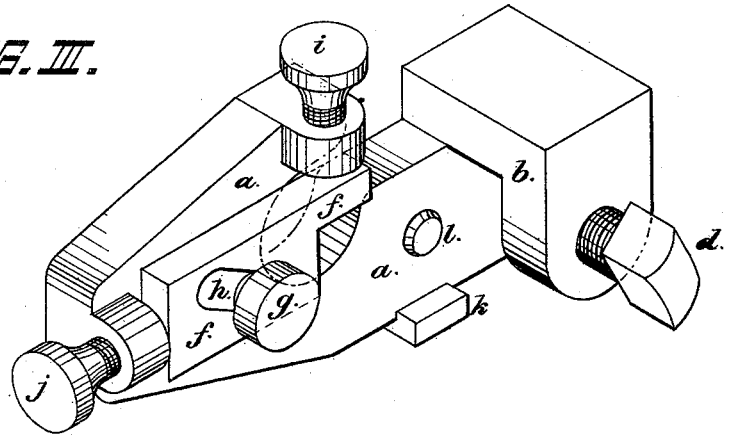


FIG. III.



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UNITED STATES PATENT OFFICE.

JAMES J. PEARD, OF HARTFORD, CONNECTICUT.

COUNTER-REST FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 415,219, dated November 19, 1889.

Application filed June 22, 1889. Serial No. 315,214. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. PEARD, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Counter-Rest for Lathes, of which the following is a specification.

My invention relates to improvements in counter-rests for lathes; and the objects of my improvement are, first, to provide a portable rest which may be readily attached to the lathe when its services are required, and be of convenient shape and size to be stored in the mechanic's tool-chest when not in use; second, to afford facilities for attaching the rest to any turning-tool or to the tool-holder of a lathe, so that it will be carried along with the tool as the latter moves while in operation, and, third, to afford facilities for the proper adjustment of the rest, so that besides supporting the work in the lathe it serves as a gage-point in its relations to the turning-tool. I obtain these objects by the implement illustrated in the accompanying drawings, in which—

Figure I is a vertical elevation of my rest as it appears when attached to the turning-tool of a lathe; Fig. II, a top view of the same, and Fig. III a perspective view of the detached rest.

Similar letters refer to similar parts throughout the several views.

The plate *a* is attached to the turning-tool *t* by the L-shaped projection *b* and the screw *d*. In the plate *a* the circular opening *c* is provided for the reception of the rod *e*, which is shown in Figs. I and II as being acted on by the tool *t*. To the face of the plate *a* the rest-block *f* is fastened by the screw *g*, so that it supports the back and the top of the rod *e* in the rectangular cut on the end of block *f*, and so that by means of the diagonal slot *h* in the block *f* and the screws *i* and *j*, which are placed in corresponding lugs on the plate *a*, the block *f* may be readily adjusted. A lug *k* projects from the plate *a*, beneath the tool *t*, and it, as also the screw *l*, serves as additional means of support and adjustment of the plate *a* on the tool *t*.

m represents the tool stock or holder of a lathe in which the tool is fastened by the screw *n* in the well-known manner.

It has long been customary to supply turning-lathes with rests, which serve to prevent the yielding or springing backward of the rods or spindles while being turned under the pressure of the turning-tool. Such a rest is familiarly called a "center rest," as it is generally fastened to the lathe-bed in such a manner that it supports the center of the rod midway between its ends, which are supported, the one at the head-stock center and the other at the tail-stock center of the lathe. For turning very long rods of comparatively small diameter, even several such rests have to be used, and while they require considerable attention in their attachment and adjustment, they only serve their purpose to a degree, according to their number and the length of the rod.

There have also been lathes constructed for special purposes, which were supplied with a vertical post upon the tool-carriage, the upper part of such post serving as back-rest, and such rest being fastened upon the carriage moved with it and the tool; but such a rest is a part of one lathe and not adapted to be used on any other lathe.

My counter-rest, being fastened directly to the tool and traveling with the latter when in operation from the tail-stock toward the head-stock, supplies the necessary support just where it is needed—that is, opposite to the tool—and it thus also serves as a gage, which by preventing the rod from yielding insures its reduction to a uniform diameter in its whole length. Being simple in construction and of small size, it may be carried detached, and is ready for use whenever needed on any lathe.

The operation of my rest is as follows: When a long rod of comparatively small diameter is to be reduced in diameter by turning it in a lathe, it is centered and connected to the head and tail centers of the lathe, as usual, and in the usual well-known manner the turning-tool *t* is started near the tail-stock center, and is allowed for a short distance to traverse the revolving rod longitudinally, thus reducing its diameter, and as the end of the rod is supported by the center it cannot here yield. As soon as the tool has passed along the rod a distance equal to the thickness of the rest-block *f*, my counter-rest

is attached to the tool *t*, as shown in Figs. 1 and 2, and the rest-block *f* is adjusted, so that it supports the rod *e* opposite to the tool. As seen in the top view, Fig. 2, the block *f* rests against the rod *e* just in rear of the cutting-point of the tool, where the rod *e* has been turned to a true cylindrical shape, and the tool and rest being fixed together the tool must reduce the entire length of the rod *e* to the same diameter.

While I have shown my rest with the projecting part *b* clasping the tool *t*, and with the screws *d l* and lug *k* to adjustably fasten the rest to the tool, it will be evident that this mode of attachment may be modified in various ways. The plate *a* may be, for example, reduced in height on its end near the tool-holder, so that it may be inserted under the tool into the opening of the tool-holder, as indicated in Fig. 1 by the dotted lines *o* and *p*, and there fastened by the pressure of the screw *n*, or it might be in any other convenient manner attached to the tool or to the tool-holder. I therefore do not limit myself to the precise manner of attachment shown.

I am aware that prior to my invention lathe-tools have been made attachable to the tool-holder and carrying two or more cutting-edges at opposite points of the circumference of the revolving rod. Such I do not claim; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a lathe-tool, of a detachable counter-rest supported directly upon such tool, substantially as described.

2. In combination with a lathe-tool, an adjustable plate thereto secured, and a counter-rest block, substantially as specified.

3. The combination, with a lathe-tool, of the herein-described counter-rest, consisting of the plate adjustably secured to the tool, the counter-rest block secured to the plate, and means by which the rest-block may be adjusted.

JAMES J. PEARD.

Witnesses:
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