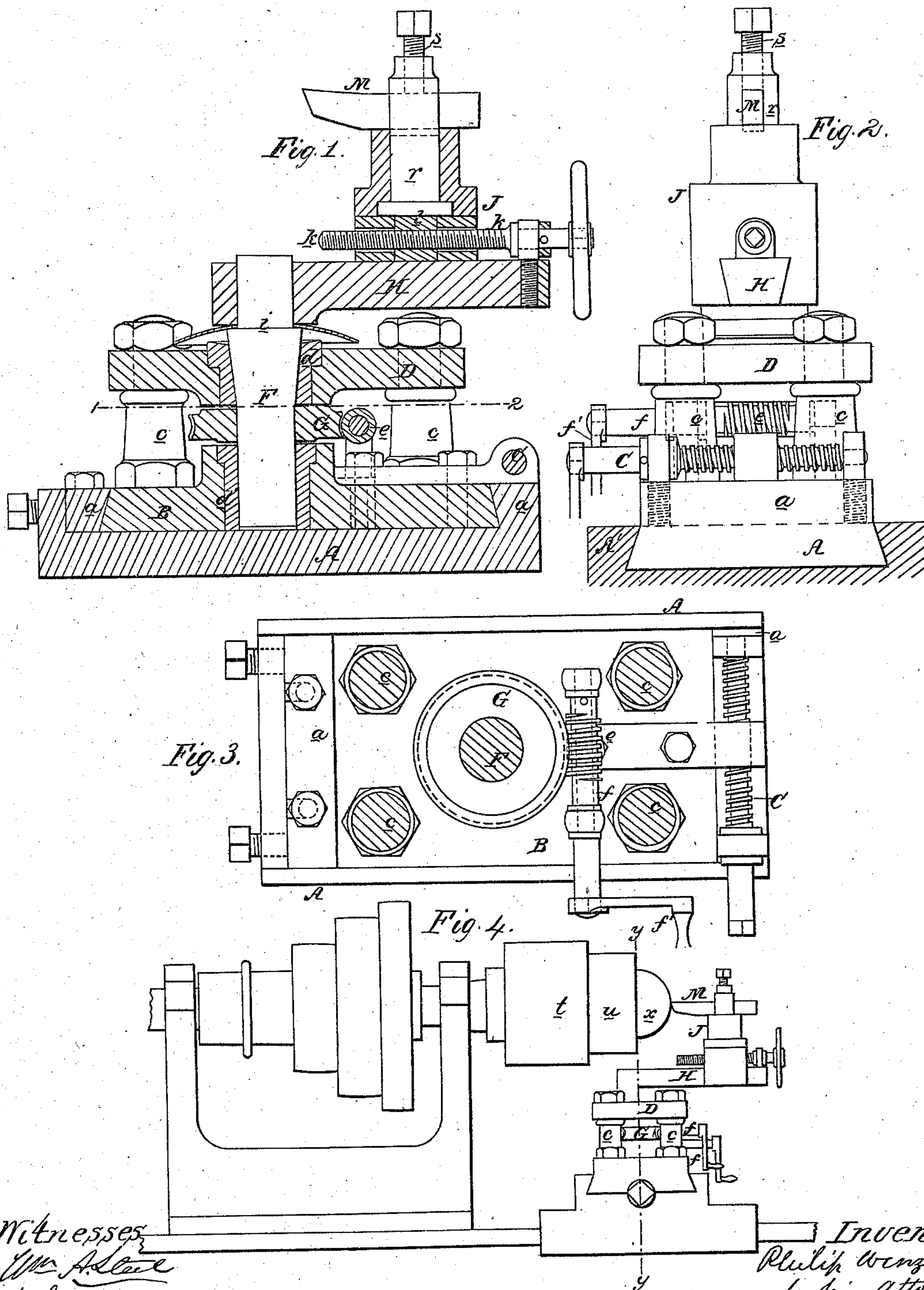


*P. Wenzel,*

*Lathe Rest.*

*No. 94,930.*

*Patented Sep. 14. 1869.*



Witnesses  
*Wm. A. Allen*  
*John Parker*

Inventor,  
*Philip Wenzel*  
by his Attorney  
*Henry Housen*



# United States Patent Office.

PHILIPP WENZEL, OF MAYENCE-ON-THE-RHINE, GERMANY, ASSIGNOR TO IGNATIUS HAHN, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 94,930, dated September 14, 1869.

## IMPROVED REST FOR LATHES FOR TURNING SPHERES.

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, PHILIPP WENZEL, of the city of Mayence-on-the-Rhine, Grand Duchy of Hesse-Darmstadt, Germany, have invented an Improved Slide-Rest for Lathes for Turning Spheres; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of a slide-rest for lathes, constructed, arranged, and operating as fully described hereafter, for the purpose of turning ball-valves, round shot, billiard-balls, and other objects which are required to be of a perfectly spherical form.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a sectional elevation of my improved slide-rest for lathes for turning spheres.

Figure 2, an end view of the same.

Figure 3, a sectional plan view on the line 1-2, fig. 1.

Figure 4, a view of a portion of a lathe, with my improved slide-rest, drawn to a reduced scale.

Similar letters refer to similar parts throughout the several views.

Upon the plate A, which is secured to the bed-plate A' of a lathe in the usual manner, rests a bed or carriage, B, which is arranged to slide between guides *a a*, motion being imparted to it by a screw, C, as plainly shown in the drawing.

Four uprights, *c c c c*, are secured to the bed B, and serve to support a plate, D, the latter and the said bed being provided with bushings or bearings, *d d'*, in which is arranged to turn an upright conical stem, F.

The latter can be turned in either direction by means of a worm-wheel, G, which is secured to it between the bushings *d d'*, this wheel being operated by a worm, *e*, on a spindle, *f*, which is arranged to turn on the bed B, and is provided with a crank-handle, *f'*.

To the upper end of the stem F, and resting upon a shoulder, *i*, of the same, is secured an arm, H, upon which is arranged to slide the tool-rest J, motion in either direction being imparted to the latter by means of a screw, *k*, which passes through a nut, *l*, of the rest.

The tool M passes through an opening in a fixed stem, *r*, of the rest J, and is tightened in the said opening by means of a set-screw, *s*, in the usual manner.

In order to explain the operation of my invention, it will be necessary to refer to fig. 4, in which part of a lathe and the slide-rest, drawn to a reduced scale, are shown.

A hollow metal box, *t*, is screwed to the spindle

of the lathe, for the reception of a wooden clamp, *u*, which is turned out so as to approximate to the diameter of the ball which is to be finished, and the latter is driven tightly into this recess, so that it may be prevented from turning in the same and offer sufficient resistance to the tool M.

After this, the slide-rest is moved on the bed of the lathe to about the position shown, the plate A and carriage B being then accurately adjusted, so that the centres of the stem F and ball *x* to be turned, shall be upon the same vertical line *y*. (See fig. 4.)

This having been done, all that is necessary is to so adjust the tool, by means of the screw *k*, that it shall be brought in contact with the surface of the ball which is to be turned.

After this, the lathe-spindle and ball are set in motion, and the stem F is revolved by means of its worm and wheel, operated by the crank *f'*, the tool M being, by this means, caused to travel around the ball in a horizontal curve, described from the centre of the stem F, that portion of the ball which projects from the clamp *u* being consequently turned with perfect truth.

The remaining part of the ball is treated in the same manner by detaching it from the lathe-spindle, turning it, and presenting its unfinished side to the tool, as above.

It is not necessary, however, that the ball should be thus detached and finished, one-half at a time, as it may be turned off at one operation, either by casting a stem on one of its sides, and thus securing it to the lathe-spindle, or by screwing a stem into a hole in the ball, which can be plugged up afterwards, as in the case of hollow shot, &c.

The above slide-rest can be attached to any lathe, providing only that the tool is placed at the same height as the lathe's spindle, and by its use an operator of but moderate skill can turn spheres absolutely true in but a small portion of the time required by the ordinary methods.

I do not claim broadly a tool secured to a slide moving on a frame turning on the slide of a lathe; but

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

The arrangement, herein described, of the carriage B, its pillars *c c*, and plate D; the conical stem F, its worm-wheel G, and arm H; the worm *e*, rest J, stem *r*, tool M, and screw *k*, all constructed as set forth.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

PHILIPP WENZEL.

Witnesses:

AARON FRANK,  
GEORGE LINK.