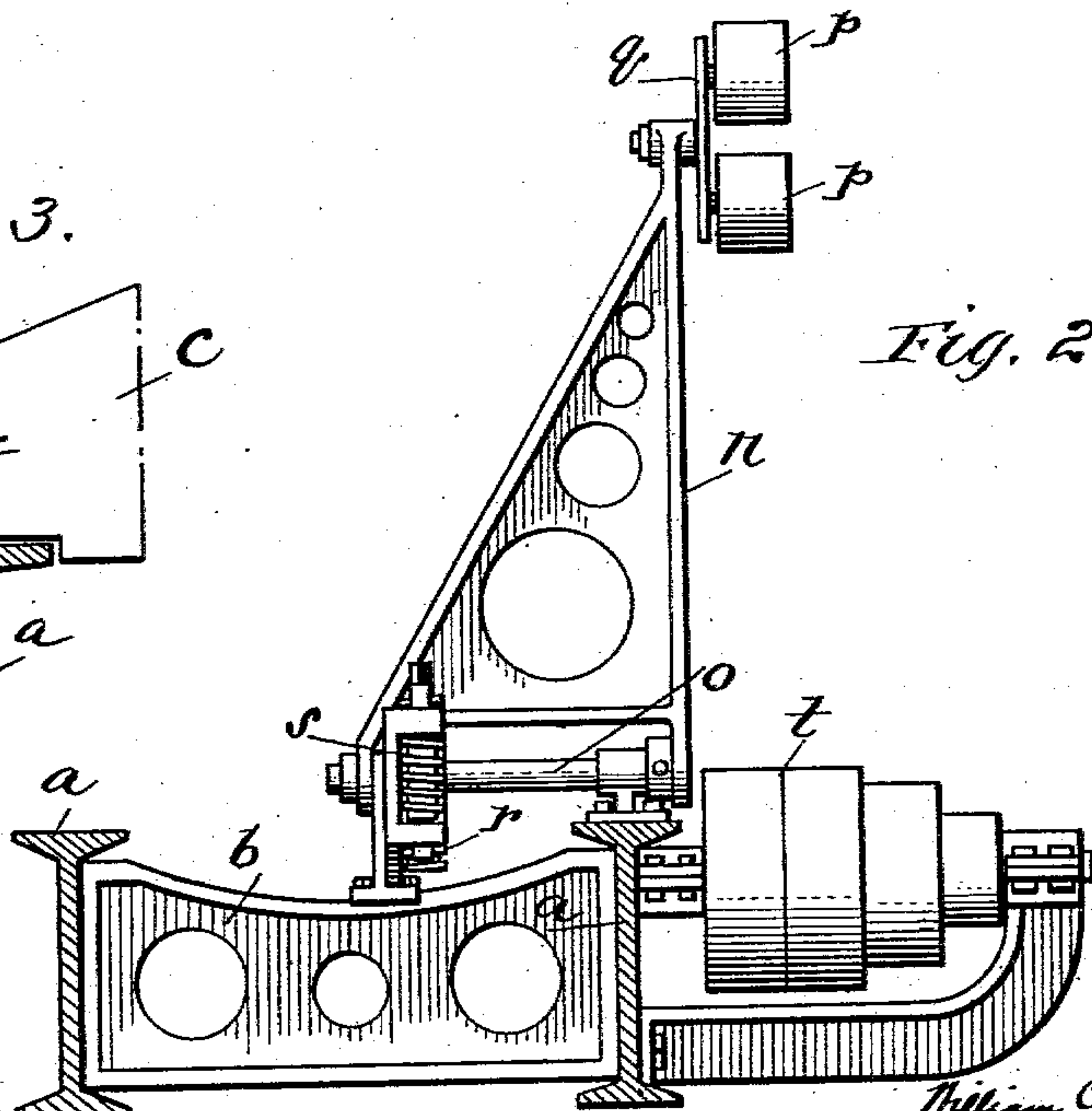
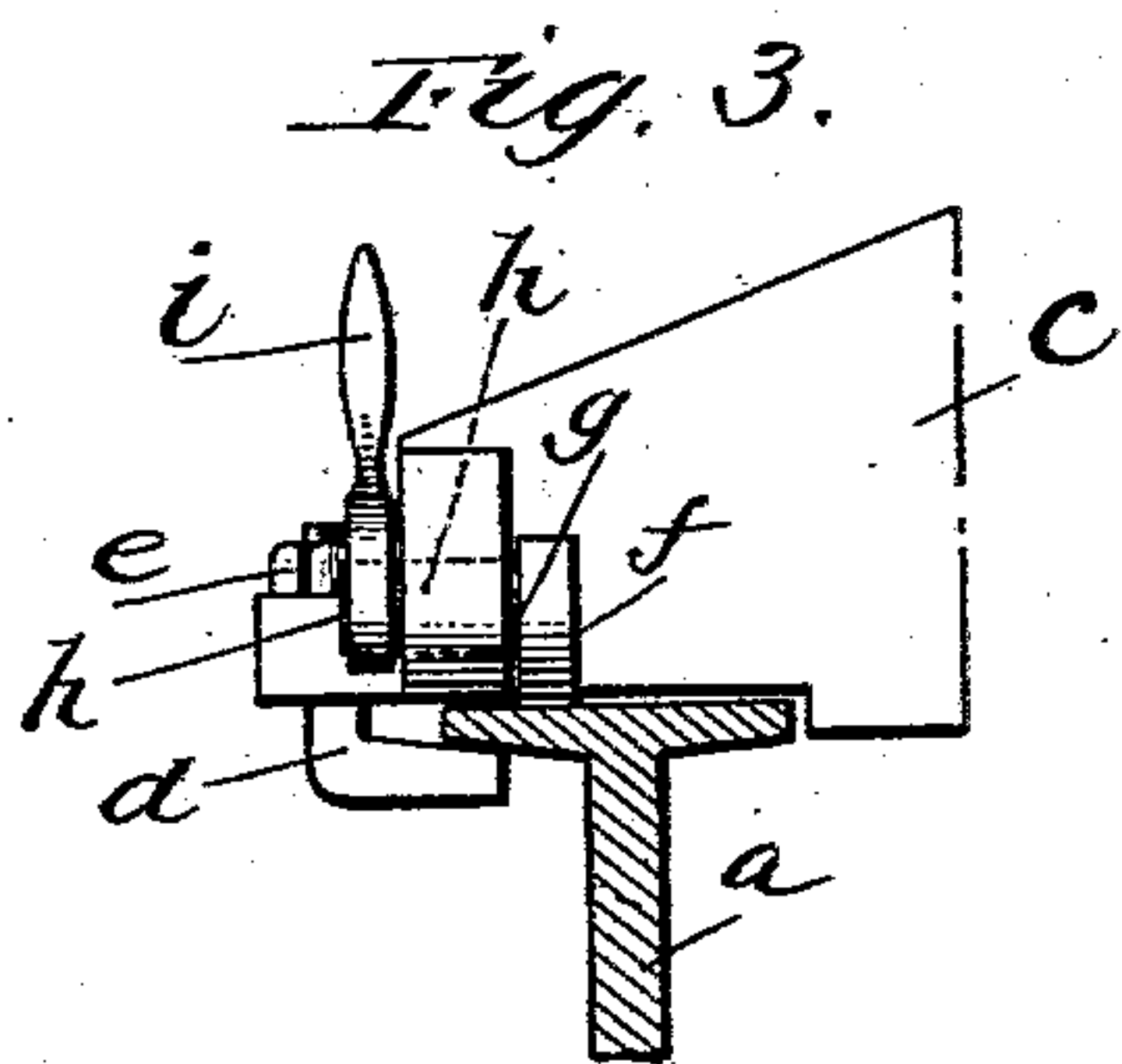
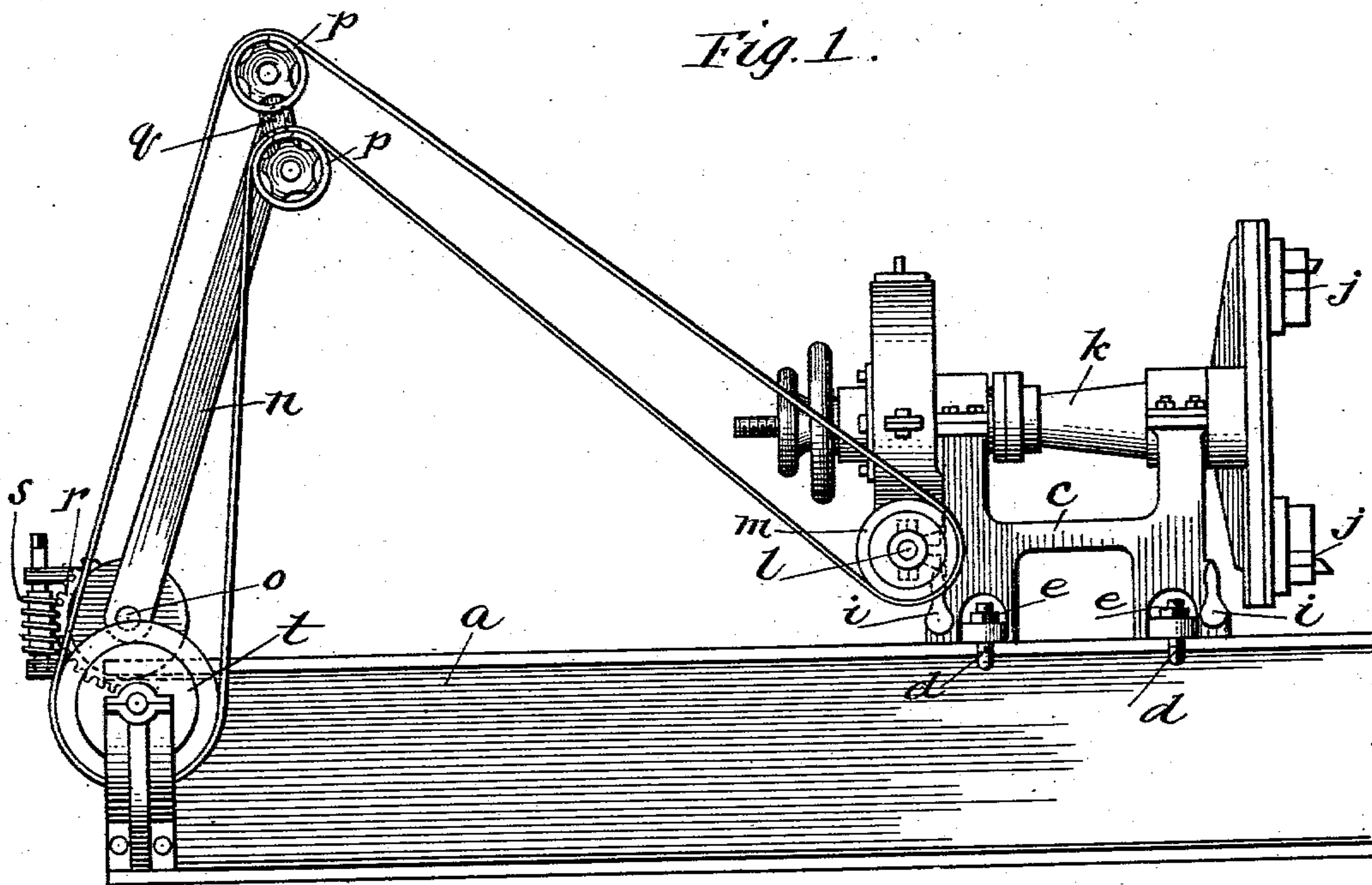


No. 743,730.

PATENTED NOV. 10, 1903.

W. C. KIRK.
BELT TIGHTENER FOR LATHES.
APPLICATION FILED MAR. 31, 1903.

NO MODEL.



WITNESSES:

John Brooks
A. H. Bishop

INVENTOR,

William Clark Kirk,
BY *Daniel Davis,*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM CLARK KIRK, OF CHATTANOOGA, TENNESSEE.

BELT-TIGHTENER FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 743,730, dated November 10, 1903.

Application filed March 31, 1903. Serial No. 150,448. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CLARK KIRK, a citizen of the United States, and a resident of Chattanooga, county of Hamilton, State of Tennessee, have invented certain new and useful Improvements in Belt-Tighteners for Lathes, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a lathe, showing my improved belt-tightener in position; Fig. 2, an end elevation of the lathe, the bed-beams being shown in section; and Fig. 3, a detail end elevation of the corner of the movable head-stock.

The main object of this invention is to provide a suitable belt-tightener whereby the proper tension may be given to the belt irrespective of the position of the head-stock on the bed.

Other important objects and advantages will appear hereinafter.

Referring to the various parts by letters, *a* designates the I-beams, which, together with the transverse connecting-brackets *b*, form the bed of the apparatus. Upon this bed the head-stock is mounted, and it consists of the frame *c*, extending across and supported upon the I-beams. To clamp this head-stock at the desired point, bolts *d* are mounted in lateral lugs, formed integral with the frame of the head-stock, and project out beyond the edges of the I-beams. The lower end of each of these bolts is bent inward, so as to engage under the outer flange of the I-beams, and upon the upper end of the bolt is secured a fastening-nut *e*. Four rollers *f* are employed, each being journaled on an eccentric *g* on the end of a short horizontal shaft *h*, journaled in the frame, the outer end of this shaft being provided with a handle *i*. By turning up these handles the rollers will be caused to impinge against the I-beams, and the head-stock will be slightly raised from the beams. In this position it may be readily moved along the bed without undue friction. One of the clamping-bolts *d* is mounted at each corner of the head-stock, as shown, and one of the rollers is mounted adjacent to each clamping-bolt.

While I have described herein a convenient means for moving the head-stock on the bed

and for clamping it at the desired point, it will be readily understood that any suitable means may be used for this purpose.

The head-stock carries the usual tool-holding chucks *j*, which are mounted on the end of the horizontal shaft *k*, which shaft is driven through the shaft *l* by suitable driving connections. On the shaft *l* is mounted a belt-pulley *m*.

The belt-tightener consists of an arm *n*, attached at its lower end to a horizontal shaft *o*, journaled in suitable bearings at the end of the bed and carrying at its upper end a pair of idle pulleys *p*, journaled on suitable stub-shafts carried on the respective ends of a bar *q*, which is pivoted midway its length in the upper end of arm *n*. Attached to shaft *o* is a segmental worm-gear *r*, and journaled in suitable bearings adjacent to this segment and engaging therewith is a worm *s*. By means of this worm and worm-gear the arm *n* may be swung vertically and be locked in any of its positions. The pulleys *p* are supported in alinement with the pulley *m* on the shaft *l* and also in alinement with the driving-pulley *t*, mounted on the bed of the lathe.

The driving-belt has its lower part passed over the lower one of the pulleys *p* and its upper part over the upper pulley, as shown in Fig. 1, these pulleys serving to prevent the oppositely-traveling parts of the belt from impinging against each other and at the same time keeping the proper tension on the belt. By pivotally supporting the bar *q*, carrying the pulleys *p*, these pulleys automatically adjust themselves as the arm *n* is raised or lowered to accommodate the varying distances of the head-stock from the end of the bed.

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

1. In a belt-tightener for lathes the combination of a bed, a slidable element on said bed, a shaft carried by said element, a belt-pulley on said shaft, a driving-pulley journaled on the bed, a belt connecting said two pulleys, and a belt-tightener consisting of a vertically-movable arm carrying a pivoted bar at its upper end, said bar being pivoted midway its ends, a belt-pulley journaled on each end of said pivoted bar, and adjusting means rigidly connected to the lower end of the vertically-

movable arm whereby the free end of said arm may be moved toward and from the head-stock, the moving means serving to lock said arm in its adjusted position.

5 2. In a belt-tightener, the combination of a support, a drive-pulley and a driven pulley, said pulleys being adjustable to and from each other, an arm pivoted on the support its free end being movable toward and from one
10 of the said pulleys, a freely-swinging pivoted bar carried at the upper end of said arm, a pair of pulleys carried by said arm one above the other, and means connected to the pivoted end of the swinging bar for moving said
15 bar about its pivot, said moving means serving to lock the swinging bar in any of its adjusted positions.

3. In a belt-tightener the combination of a support, a drive-pulley and a driven pulley
20 said pulleys being adjustable to and from each other, an arm pivoted on the support its free end being movable toward and from one of the said pulleys, a freely-swinging pivoted bar carried at the upper end of said arm, a
25 pair of pulleys carried by said arm one above the other, and means for adjusting said arm

on its pivot and for locking it in its adjusted position.

4. In a belt-tightener for lathes the combination of a bed, an element movable thereon, 30 a shaft secured thereon, a driven pulley secured to said shaft, a driving-pulley located on the bed, an upward and inward extending tightener-arm pivotally supported on the bed near the driving-pulley mounted thereon, 35 a freely-swinging arm pivoted to the upper end of the inward-extending arm, a pair of pulleys mounted on said swinging arm, a worm-gear connected rigidly to the lower end of the upward-extending belt-tightener 40 arm, and a worm engaging said worm-gear, whereby the belt-tightener arm may be adjusted and the adjusting means will serve to lock said arm in any of its various positions.

In testimony whereof I hereunto affix my 45 signature, in the presence of two witnesses, this 26th day of March, 1903.

WILLIAM CLARK KIRK.

Witnesses:

LUTHER F. STRICKLIN,
THOS. N. SCHNEIDER.