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Patented Dec. 5, 1899.

A. HAENICHEN.

SELF ADJUSTING SPINDLE FOR BELT SPINNERS.

(Application filed Jan. 31, 1899.)

(No Model.)

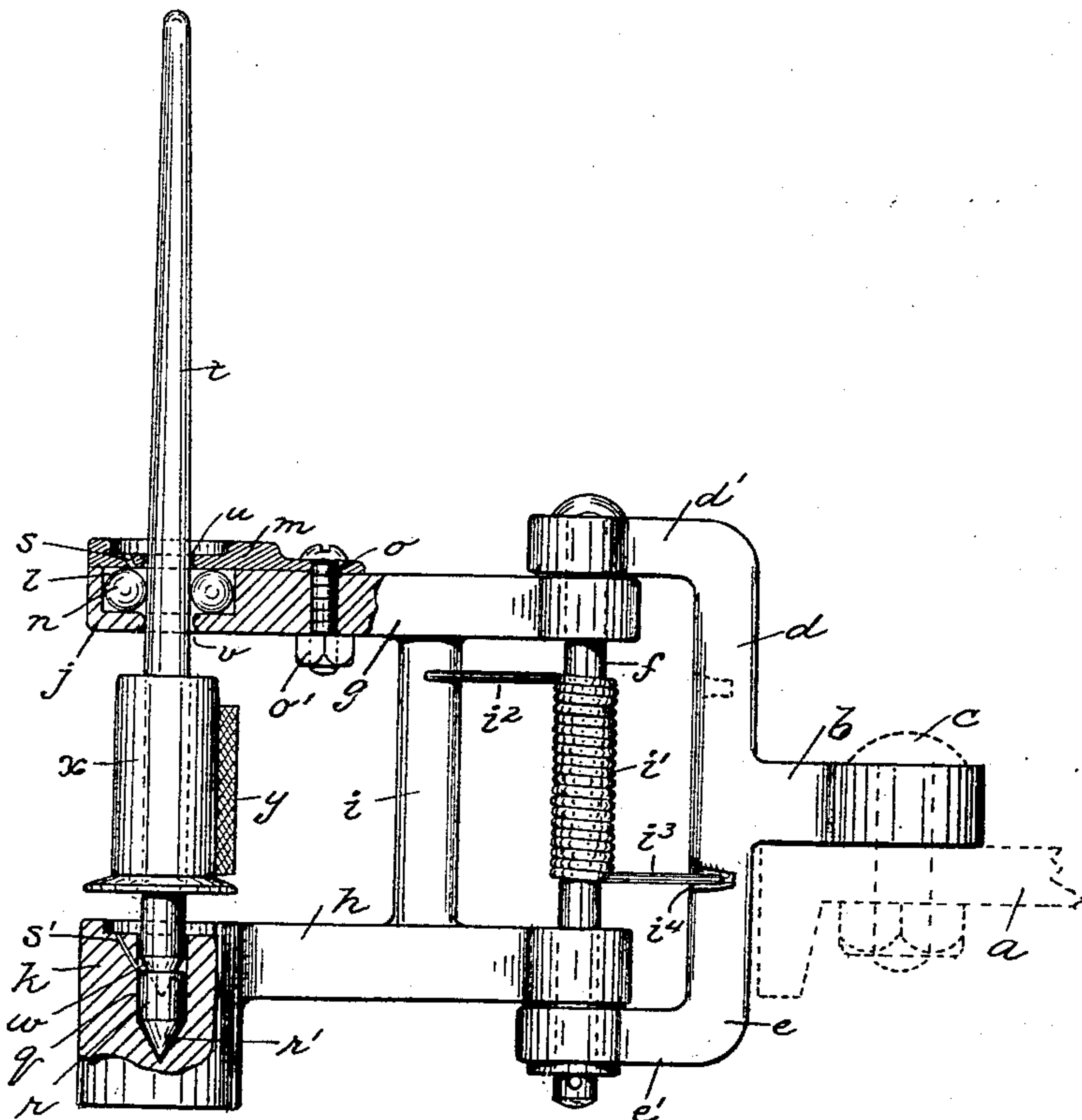


Fig. 1.

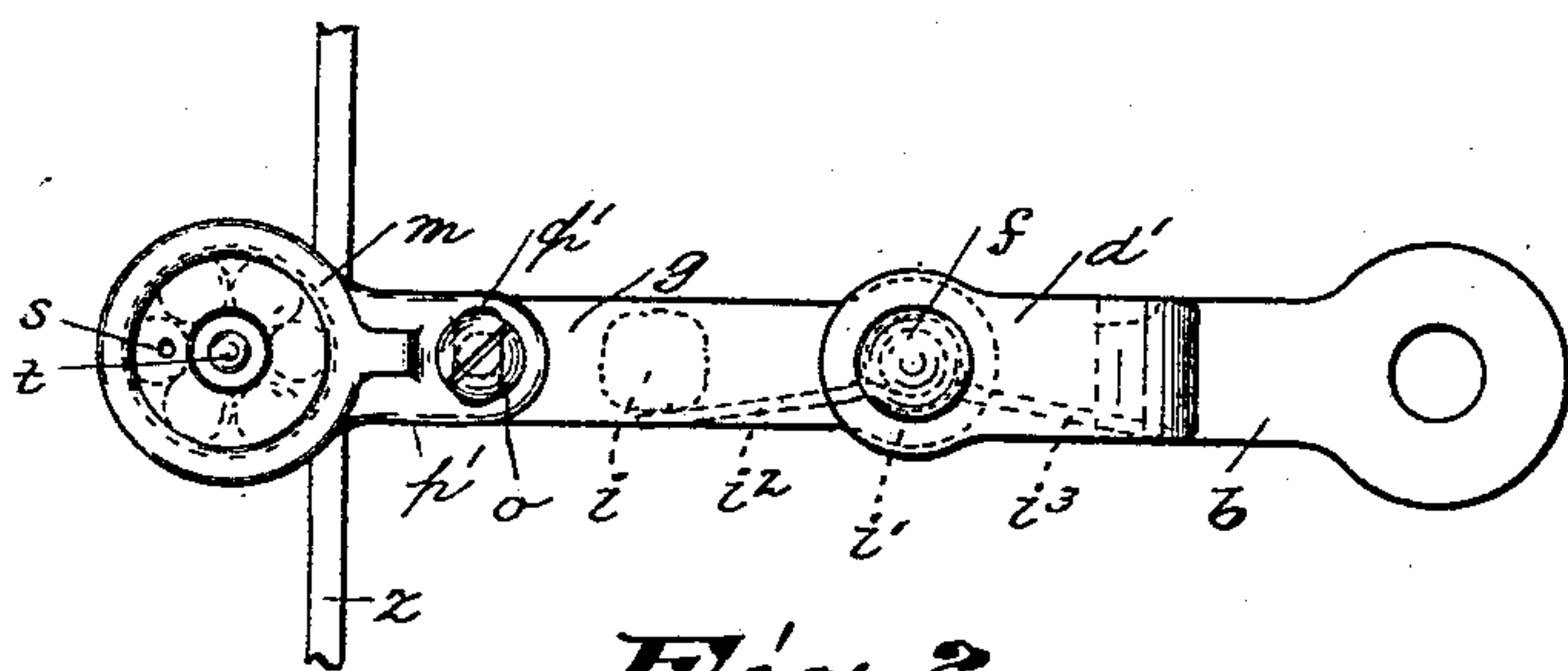


Fig. 2.

WITNESSES:

Wm. J. Bell.
Robert J. Pollitt

INVENTOR

Adolph Haenichen,
BY
Gartner & Steward
ATTORNEYS

UNITED STATES PATENT OFFICE.

ADOLPH HAENICHEN, OF PATERSON, NEW JERSEY.

SELF-ADJUSTING SPINDLE FOR BELT-SPINNERS.

SPECIFICATION forming part of Letters Patent No. 638,509, dated December 5, 1899.

Application filed January 31, 1899. Serial No. 704,024. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH HAENICHEN, a citizen of the United States, residing in Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Self-Adjusting Spindles for Belt-Spinners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to supports for spinning-spindles; and it constitutes an improvement upon devices of this nature which comprise two hinged members, one of which is secured to the spindle-rail and the other of which carries the spindle, said members being connected by elastic means, so that the spindle-whirl may have a constantly-uniform engagement with its driving band or belt.

The invention consists in the improved spindle-supporting device and in the combination and arrangement of its various parts, substantially as will be hereinafter fully described, and finally embodied in the clauses of the claim.

The invention is fully illustrated in the accompanying drawings, wherein—

Figure 1 is a view in side elevation of my improved spindle-supporting device, portions thereof being shown in section; and Fig. 2 is a top plan view of said spindle-supporting device.

The spindle-rail of the spinning-machine is shown in dotted lines in Fig. 1 and is designated by the reference-letter *a*.

b designates the body portion of a bracket, that is flat and adapted to rest upon the spindle-rail, being penetrated by a bolt *c*, (also shown in dotted lines,) whereby it is secured to said spindle-rail. Said bracket comprises

an upwardly-extending arm *d* and a downwardly-extending arm *e*, the extremities *d'* and *e'*, respectively, of said arms being bent forwardly in a direction parallel to each other and to the body portion of the bracket.

This bracket is therefore substantially fork-shaped.

f designates a bolt or pin which projects

through the portions *d'* and *e'* of the bracket and connects them. Upon the bolt or pin *f* is pivotally supported another bracket, which comprises two parallel horizontal arms *g* and *h*, integrally connected by a vertical bar *i*, being substantially H-shaped. The bolt or pin *f* penetrates the rear extremities of the arms *g* and *h* of this last-mentioned bracket. *i'* designates a spiral spring which is coiled about the bolt or pin *f* and one of whose ends, *i*², bears against the bar *i* and the other of whose ends, *i*³, bears against one of the arms *e* of the first-mentioned bracket, being set in a recess *i*⁴, therein formed. As the position of the spring *i'* may be reversed, so that it will act in an opposite direction to that in which it acts according to the arrangement shown in the drawings, I have provided two of these recesses *i*⁴, the one being formed in the arm *d* and the other in the arm *e* and on opposite sides thereof. The other end of the arm *g* is formed with an enlargement *j*, and the corresponding end of the other arm *h* is also formed with an enlargement *k*, whose shape and dimension in elevation approximate that of the enlargement *j*, but which is somewhat deeper or of greater thickness than said enlargement *j*, extending considerably beneath the arm *h*. The enlargement *j* has a cavity *l*. Said cavity is covered by a plate *m*, which forms therewith a ball-chamber for the reception of the antifriction-balls *n* and which is secured to the arm *g* by a screw *o*, having a nut *o'*, said screw projecting through a transversely-elongated orifice *p* in a projection *p'* of said plate. By virtue of the screw-and-slot arrangement the plate is adjustably arranged upon the arm *g*.

q designates a vertical bore which is formed in the enlargement *k* of the arm *h* and which receives a step *r*, whose lower end is tapered or conical and projects into and fits a correspondingly-shaped recess in the bottom of the bore.

s and *s'* respectively designate lubricating-orifices, the former of which extends through the plate *m* and the latter of which is formed in the enlargement *k* and communicates with the bore *q* above the step.

The spindle *t* penetrates openings *u* and *v*, which are formed in the plate *m* and the enlargement *j* and which register with each

other, and the lower end of said spindle is tapered, as at *w*, and it is set into a correspondingly-shaped recess in the top of the step *r*. *x* designates a whirl which is carried upon said spindle between the two arms *g* and *h* and which is adapted to engage a belt *y*, whereby the whirls, and consequently the spindles, are rotated. The plate *m* being removed, the spindle is mounted in position by first inserting its upper end up through the aperture or opening *v* and then placing its conical or tapered end in position in the recess of the step, whereupon, having placed the balls in the cavity, the plate is secured in place.

It should be remarked that it is not essential that the belt which I have described as the driving means for the whirls and which, it will be seen, drives a series of spindles be used, for it is obvious that an individual driving-band may be provided for each spindle without departing from the spirit of my invention.

I desire to emphasize the fact that by virtue of the construction of the spindle-support and the arrangement relatively to the latter of the spindle no undue leverage is exerted on the spindle, and consequently on the movable member of the support by the driving means for said spindle—that is to say, the spindle receives the driving force in such manner that there is no tendency to force said spindle out of the perpendicular relatively to its support or, in fact, into any position where its axial line would intersect its axial line in the position it is intended to occupy, or consequently, furthermore, to force the movable member of the support in any direction but that of its intended plane of movement.

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

1. The combination, with a spindle and two yieldingy-connected members constituting a bracket for said spindle and one of which is substantially H-shaped, said spindle being

stepped in one arm and penetrating the other arm of said H-shaped member, and a cavity being formed about the spindle in the frame which it penetrates, balls arranged in said cavity, and a plate covering the cavity and secured to said arm, substantially as described.

2. The combination, with a spindle, of a bracket therefor comprising two parallel arms, said spindle being stepped in the one and penetrating the other of said arms, a cavity formed in the upper or last-named arm about the spindle, balls arranged in said cavity, and a plate covering the cavity and secured to said arm, substantially as described.

3. The combination, with a spindle, of a bracket therefor comprising two parallel arms, said spindle being stepped in the one and penetrating the other of said arms, a cavity formed in the upper or last-named arm about the spindle, balls arranged in said cavity, a plate covering the cavity and secured to said arm, and a step arranged beneath said spindle in said first-named arm and constituting an element separate therefrom, substantially as described.

4. The combination, with a spindle, of a bracket therefor comprising two parallel arms, said spindle being stepped in the one and penetrating the other of said arms, a cavity formed in the upper or last-named arm about the spindle, balls arranged in said cavity, a plate covering the cavity and secured to said arm, said spindle having a tapered lower end, and a step for the lower end of said spindle having a recess corresponding to the taper thereof, said step being arranged in said first-named arm and constituting an element separate therefrom, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of January, 1899.

ADOLPH HAENICHEN.

Witnesses:

ALFRED GARTNER,
JOHN W. STEWARD.