(No Model.)

H. F. KEIL.

SPRING HINGE.

No. 387,421. Patented Aug. 7, 1888.

Fig. 1.

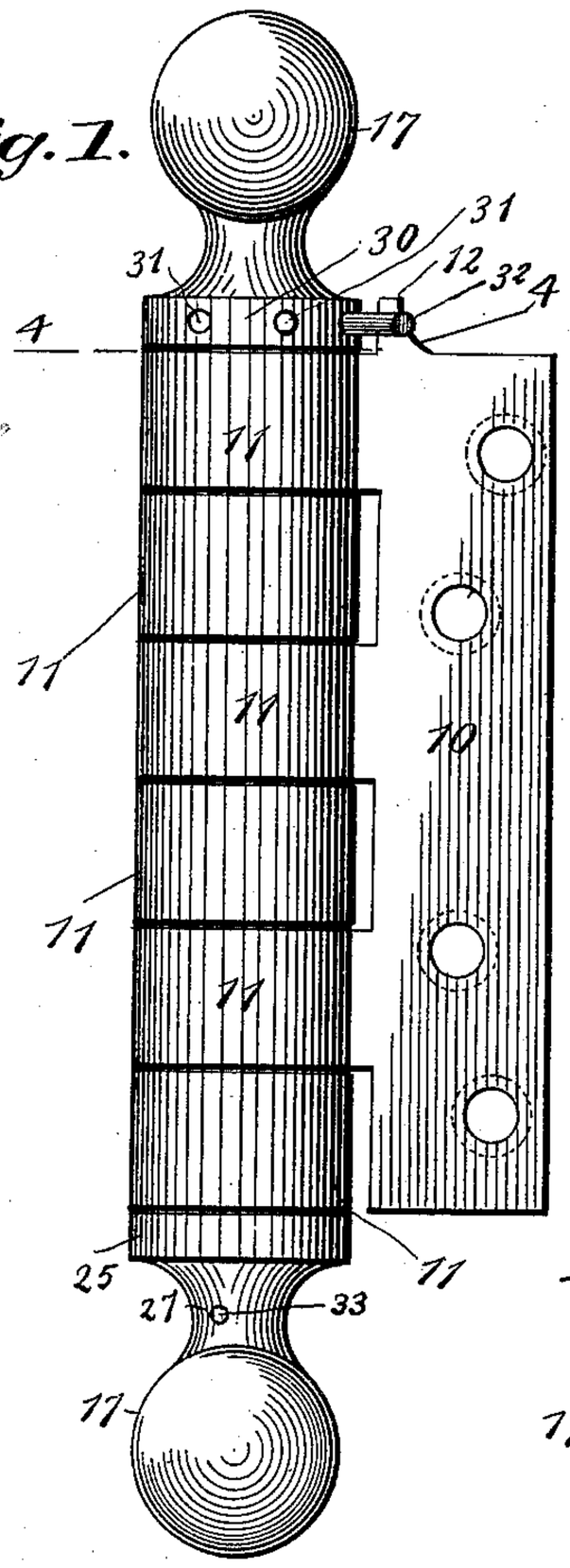


Fig. 2.

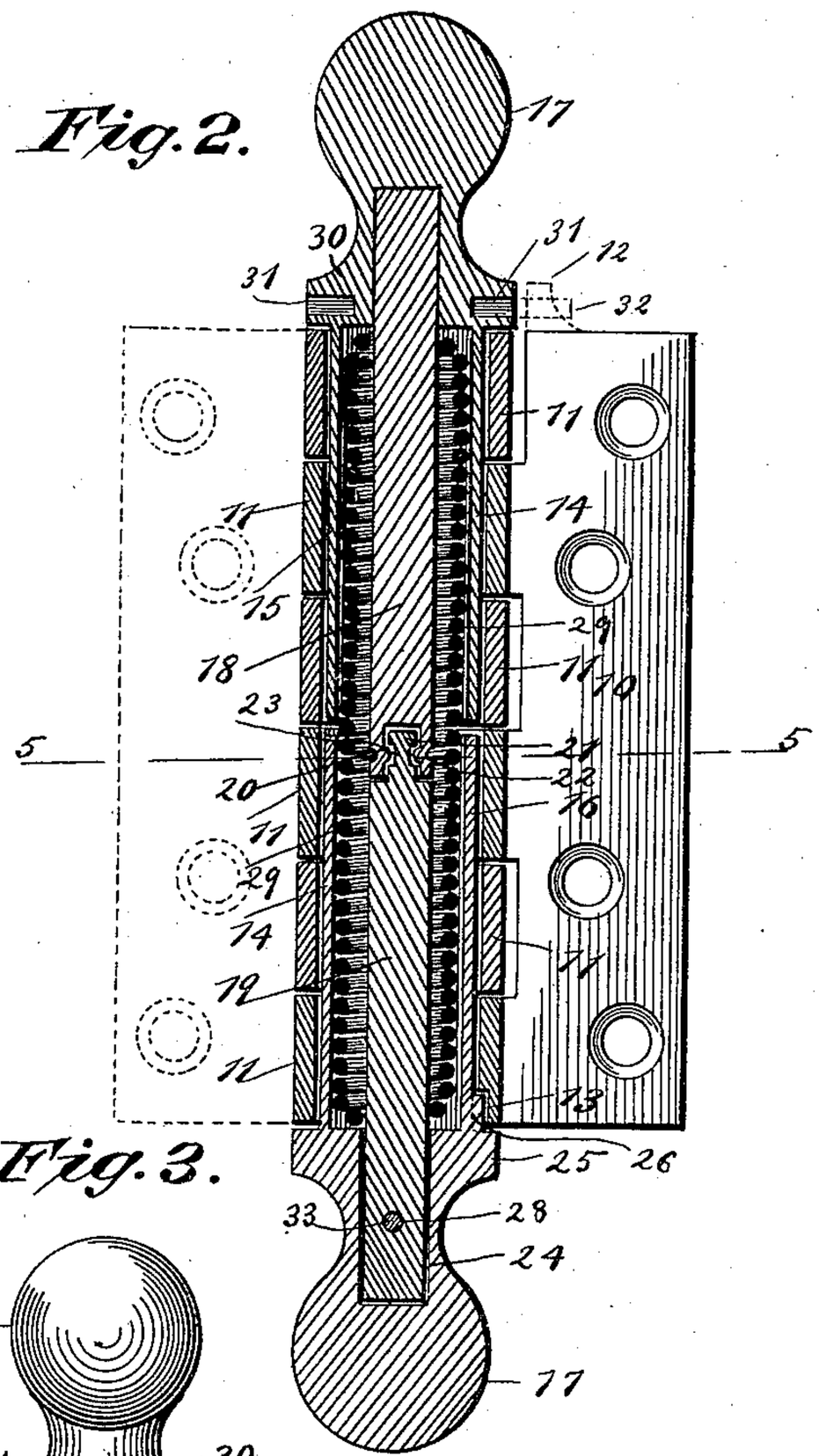


Fig. 3.

Fig. 4.

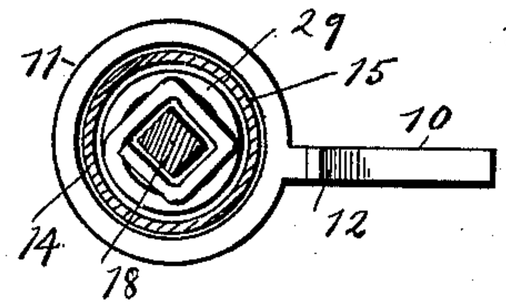
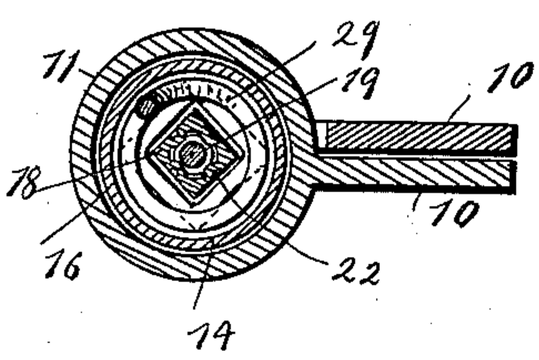


Fig. 5.



WITNESSES:

Phil. C. Dieterich.

C. Sedgwick.

INVENTOR

H. F. Keil.

BY Munn & Co.

ATTORNEY.

UNITED STATES PATENT OFFICE.

HENRY F. KEIL, OF NEW YORK, N. Y.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 387,421, dated August 7, 1888.

Application filed March 30, 1888. Serial No. 269,004. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. KEIL, of the city, county, and State of New York, have invented a new and Improved Spring-Butt, of which the following is a full, clear, and exact description.

My invention relates to a spring-butt, and has for its object to provide a butt of simple, durable, and effective construction, whereby the tension of the spring may be regulated by the manipulation of one tip, and wherein the spring will be completely concealed and the device have the outward appearance of an ordinary butt.

The invention consists in providing a butt with tubular pins or pintles, the combination, with said tubular pintles, of a revolving spindle, the combination, with a pintle and spindle, of a spring, and in the construction and combination of the several parts as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the butt. Fig. 2 is a central vertical section thereof. Fig. 3 is an elevation of one section of the pintle detached, the spring being partly in section. Fig. 4 is a transverse section on line 4 4 of Fig. 1, and Fig. 5 is a similar section on line 5 5 of Fig. 2.

In carrying out the invention, leaves 10 are provided, having attached thereto ordinary knuckles 11, adapted to interlock in the ordinary manner. Upon one leaf, at the upper end, at the intersection of said leaf with the upper knuckle, a vertical post or projection, 12, is cast integral therewith, for a purpose hereinafter stated, and in the lower knuckle, upon the inner side at the bottom, a recess, 13, is produced.

The pintle 14 is tubular and divided into two sections, 15 and 16, each section being provided with a tip, 17, adapted to surmount the knuckles at top and bottom. The pintle-section 15, which is the upper section, is provided with a spindle, 18, cast integral therewith or otherwise secured thereto, which spindle projects from the under side of the tip or head 17, vertically downward within the center of the section and out therefrom. Below the lower end of the upper pintle-section, 15, a second section of spindle 19 is secured to the aforesaid upper spindle-section, 18.

The lower spindle-section is adapted to revolve upon the upper spindle-section, which is preferably accomplished in the following manner: The end of the upper spindle-section is provided with a longitudinal aperture, 20, and the lower spindle-section with a post, 21, adapted for insertion in the aforesaid aperture 20. The post having been entered in the aperture, the walls of the upper spindle-section are depressed in any suitable manner, as shown at 22 in Fig. 5, and also in Fig. 2, whereby the outer depression of the metal forms projections in the wall of the aperture 20, which projections enter an annular groove, 23, produced upon the surface of the spindle post 21, as best illustrated in Fig. 2.

The lower spindle section, 19, is of a length sufficient to pass through the lower pintle-section, 16, and extend a distance upward in the tip or head 17 of that section. Both sections of the spindle are of the same contour, which is polygonal, and the lower spindle-section is securely held in the lower pintle-section by entrance in an aperture, 24, produced in the inner surface of the lower head, as clearly shown in Fig. 2, the aperture 24 being so shaped as to be perfectly adapted to the contour of the spindle and prevent the same from turning.

The lower pintle-section, 16, below the flange or collar 25, which normally rests against the lower knuckle of the leaves, is provided with a longitudinal post, 26, of a contour similar to the contour of the recess 13 in the said lower knuckle, the post or projection 26 being adapted for entrance in the said recess, as will be hereinafter set forth.

The neck of the lower tip or head, 17, is provided with a conical diametrical aperture, 27, which aperture is adapted to register with an aperture, 28, in the lower spindle-section, when the said spindle-section is in its normal position, as indicated in Fig. 2.

The spring 29, adapted to surround both sections of the spindle, is a closely-coiled spring, the wire at each end being bent to the

contour of the spindle, the body of the spring being circular. It will thus be seen that when the spindle is passed through the spring the said spring is prevented from turning upon the spindle, but will be contracted when the spindle is rotated.

In the collar 30 of the upper tip or head, which corresponds to the flange or collar 25 of the lower tip, a series of apertures, 31, are drilled or otherwise produced, which apertures are adapted for the reception of a pin, 32.

The several knuckles of the leaves having been fitted to place, the spring 29 is passed over the spindle into the upper pintle-section, 15, to a bearing against the under side of the head. The upper spindle-section, the spring, and the spindle are then passed down through the several knuckles until the flange 30 rests upon the surface of the upper knuckle. The lower pintle-section, 16, is then introduced in the knuckle over the spring and pressed upward to an essential contact with the upper pintle-section, the lug or projection 26 upon the said lower pintle-section being made to enter the recess 13 in the lower knuckle.

The aperture in the lower section of the spindle-section will now have been brought in register with the aperture 28 in the neck of the lower head, 17, the lower end of the spindle having been entered into the recess 24 in the said lower head. When this adjustment has been accomplished, the pin 33 is passed through the apertures 28 and 27, which provides an auxiliary means of holding the lower spindle-section in rigid contact with the lower pintle section, as clearly shown in Fig. 2.

To exert a tension upon the spring, the hinge having now been placed together, it simply becomes necessary to grasp the upper tip, 17, and revolve the same, whereupon the upper spindle-section revolving upon the lower spindle-section, which is stationary, contracts the spring, and when the spring has been sufficiently contracted to suit the operator the pin 32 is entered in the aperture 31, adjacent to the lug 12, and the head is released, the parts being held in the aforesaid position by the engagement of the said pin 32 with the said projection 12, as clearly shown in Fig. 1.

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

1. In a spring butt-hinge, the combination, with the leaves and knuckles thereof, of a sectional tubular pintle, a spindle connecting said sections, and a spring surrounding the spindle within the sectional tubular pintle, substantially as herein shown and described.

2. In a spring butt-hinge, the combination, with the leaves provided with knuckles, of a sectional tubular pintle, a sectional and jointed spindle connecting the said sections, and a spring surrounding the spindle within the tubular pintle, substantially as herein shown and described.

3. In a butt-hinge, the combination, with the leaves and knuckles thereof, of a sectional tubular pin or pintle, a divided spindle having one section revolving upon the other, the outer ends of which spindle are held in the respective pintle-section, and a spring held upon said spindle and controlled thereby, substantially as shown and described.

4. In a spring butt-hinge, the combination, with the leaves and knuckles, of a sectional tubular pin or pintle, a divided spindle having one section revolving upon the other, the outer ends of which spindle are held in the respective pintle-sections, a spring held upon said spindle and controlled thereby, and means, substantially as shown and described, for retaining the spring in a contracted position, as and for the purpose specified.

HENRY F. KEIL.

Witnesses:
HENRY G. GABAY,
W. CAFFRY.