No. 612,509. Patented Oct. 18, 1898.

C. C. & F. TRAPP.

CHAIR IRON.

(Application filed June 9, 1898.)

(No Model.)

Fig. 1.

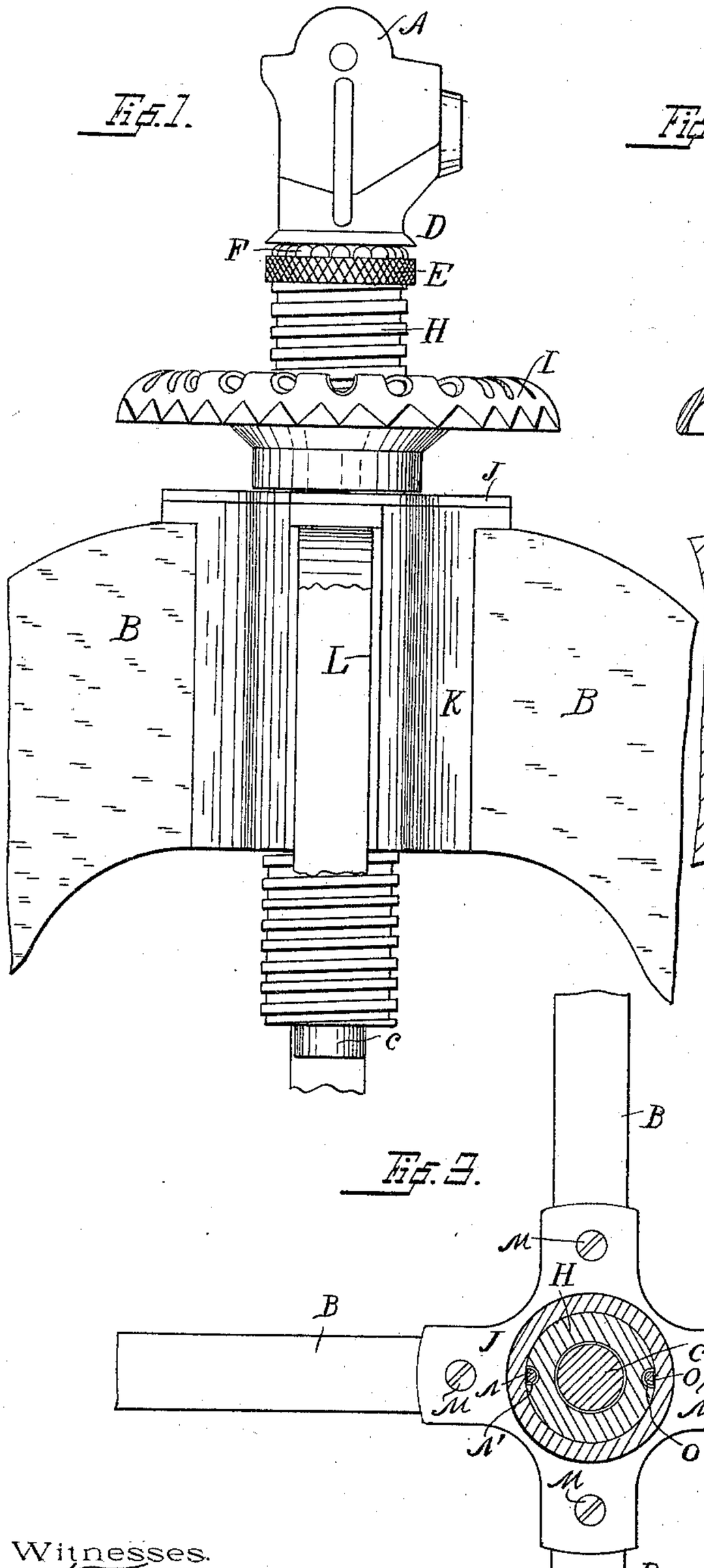


Fig. 2.

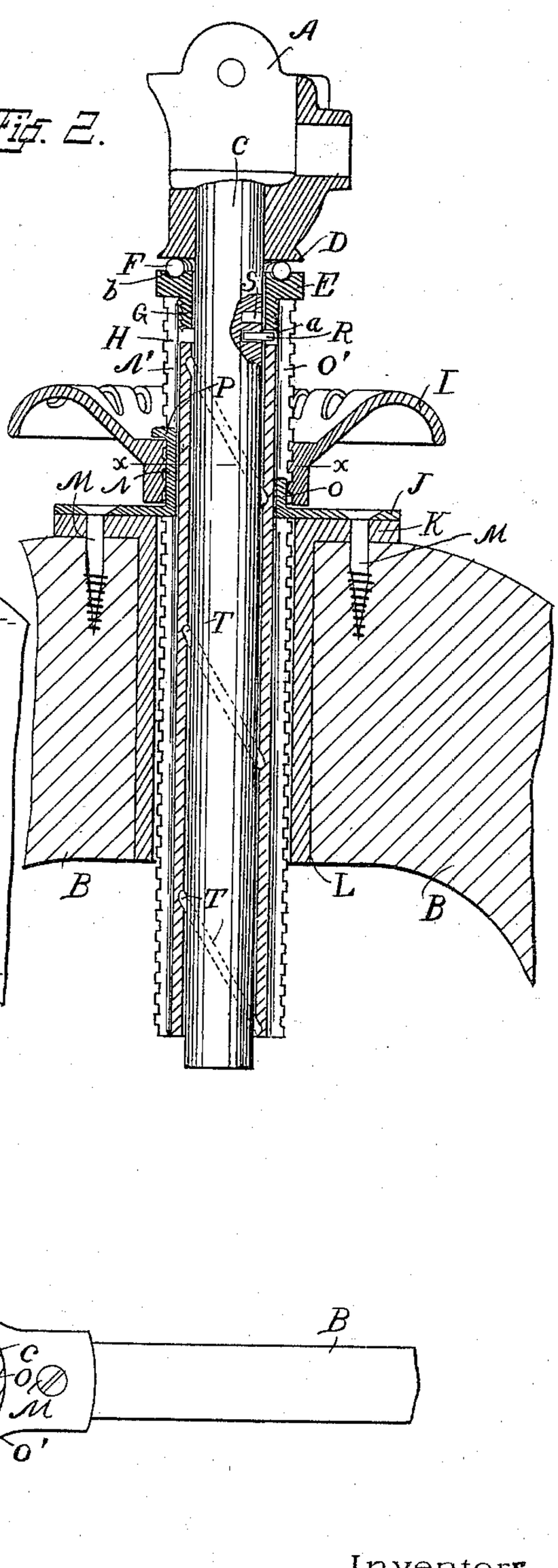
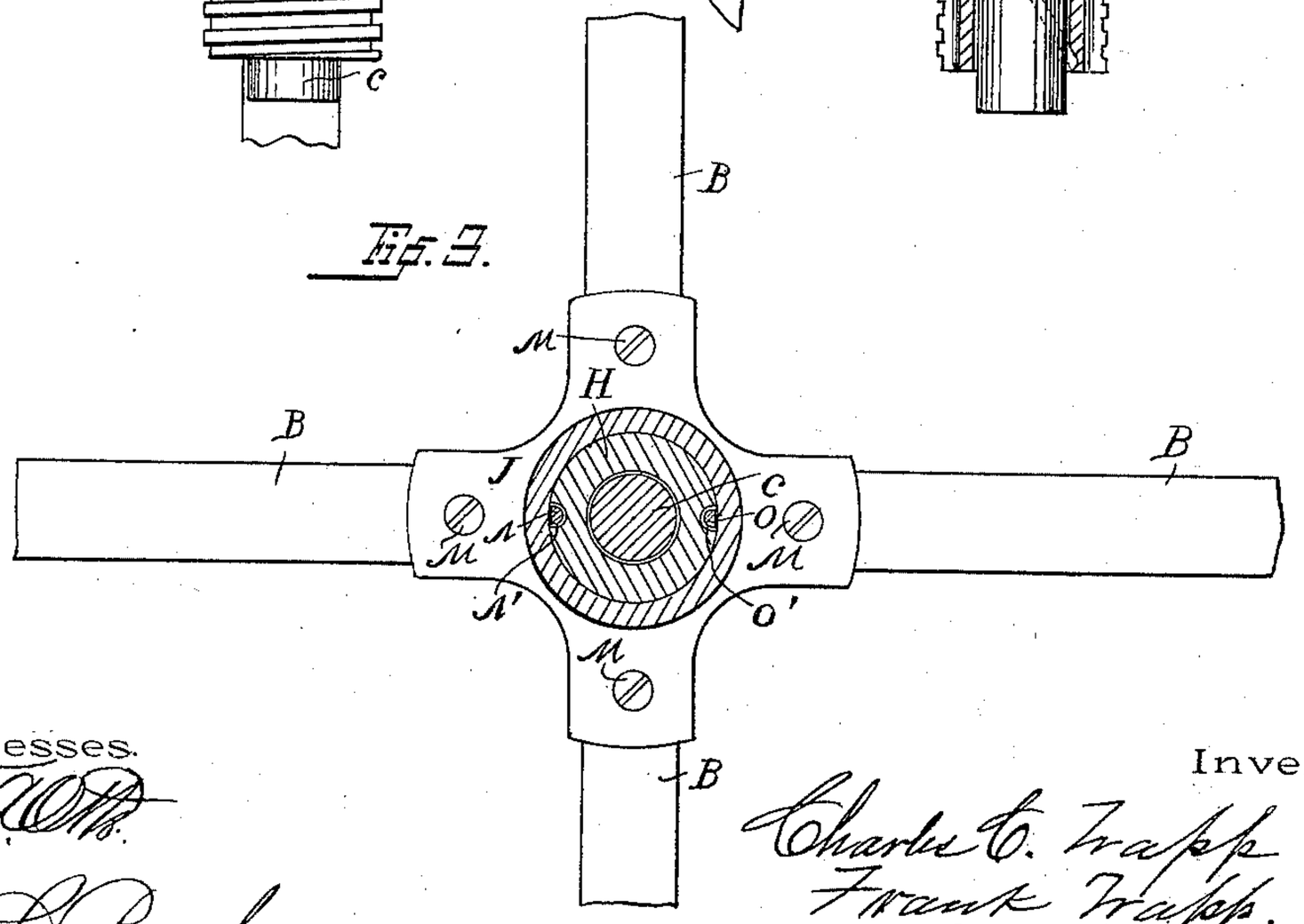


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES C. TRAPP AND FRANK TRAPP, OF MILWAUKEE, WISCONSIN.

CHAIR-IRON.

SPECIFICATION forming part of Letters Patent No. 612,509, dated October 18, 1898.

Application filed June 9, 1898. Serial No. 682,995. (No model.)

To all whom it may concern.

Be it known that we, CHARLES C. TRAPP and FRANK TRAPP, citizens of the United States, residing at South Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Chair-Irons, of which the following is a specification.

Our invention relates to improvements in chair-irons; and it pertains to the device by which the seat is revolubly supported upon a vertically-adjustable screw.

The construction is explained by reference the accompanying drawings, in which—

Figure 1 is a side view, partly in section. Fig. 2 is a vertical section, and Fig. 3 is a top view.

Like parts are referred to by the same reference-letters throughout the several views.

A represents a seat-supporting bracket of an ordinary tilting-chair. The bracket A is supported from the legs B through the central revoluble shaft C, supporting-collars D and E, ball-bearings F, sleeve G, adjustable screw-threaded spindle H, spindle-supporting hand-wheel I, wheel-supporting bearing-plate J, and base-bracket K.

The bracket K is provided with radial recesses L for the reception of the legs B. The wheel-supporting bearing-plate J and legs B are both screwed to the base-bracket K by the screws M. The hand-wheel I is provided with an interior screw-thread which operates in the exterior screw-thread of the spindle H, whereby it is obvious that by turning said hand-wheel toward the right and left said spindle H is raised and lowered, carrying with it the central shaft C, seat-supporting bracket A, and the intermediate collars and bearings.

The spindle H is prevented from turning with the hand-wheel I by the vertical arms N and O, which arms are formed integral with the stationary bearing-plate J, said spindle H being provided with longitudinal channels or grooves N′ and O′ for the reception of said arms. To prevent the hand-wheel I and the intermediate parts from being raised with the seat from the base-bracket, the arm N is provided with an angular bend or bearing P, which engages upon the upper bearing-surface of the hand-wheel.

The sleeve G has an exterior screw-threaded bearing, which engages in a corresponding screw-thread formed in the inner wall of the spindle H. When said sleeve G is screwed down in place, an annular recess or channel *a* is left beneath it for the reception of the protruding end of the stop-pin R. The stop-pin R is rigidly secured to the central shaft C and turns with it as the chair-seat is turned, while said sleeve G bears against said stop-pin and prevents said shaft from being drawn from the spindle, while it also holds said collar E in its proper relative position to the bearing-collars D, whereby the roller-bearings F are retained in place within the channel *b*.

T is a channel formed in the inner wall of the spindle H for the reception of a lubricant. If desired, a flat metallic washer may be substituted for the ball-bearings F, in which case the stop-pin R is placed in the upper aperture S provided therefor.

It is obvious that by the construction shown the weight of the seat and occupant is brought to bear directly upon the bearing-plate J and base-bracket K through the collar E and spindle H, while the arms N and O serve simply to prevent the spindle from turning with the chair and the hand-screw, and also that the chair and supporting-shaft are free to turn without wearing or moving the adjustable spindle.

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

1. In a device for supporting a revoluble chair-seat through a vertically-adjustable non-revoluble spindle, the combination of a base-bracket provided with a central aperture; a supporting bearing-plate secured to said base-bracket; spindle-supporting hand-wheel supported from said bearing-plate; screw-threaded spindle supported within said base-bracket from said hand-wheel; a revoluble seat-bracket, bracket-supporting bearings located between said bracket and said spindle, and a central shaft suspended from said seat-bracket within said spindle, substantially as and for the purpose specified.

2. In a device for supporting a revoluble chair-seat through a vertically-adjustable non-revoluble spindle, the combination of a base-bracket provided with a central aperture; a bearing-plate provided with vertical

bearing-arms adapted to register with, and engage in, corresponding channels formed therefor in a vertically-adjustable spindle, said bearing-plate being rigidly secured to said base-bracket; a spindle-supporting hand-wheel supported from said bearing-plate; a screw-threaded spindle supported from said hand-wheel within said base-bracket and provided with longitudinal grooves for the reception of said vertical bearing-arms; a revoluble seat-bracket, bracket-supporting bearings located between said bracket and said spindle; a central seat-retaining shaft suspended from said seat-bracket within said spindle; and means for retaining said central shaft within said spindle, substantially as and for the purpose specified.

3. In a device for supporting a revoluble chair-seat through a vertically-adjustable non-revoluble spindle, the combination of a base-bracket provided with a central aperture; a bearing-plate provided with vertical bearing-arms adapted to register with, and engage in, corresponding channels formed therefor in a vertically-adjustable spindle, said bearing-plate being rigidly secured to said base-bracket; a spindle-supporting hand-wheel supported from said bearing-plate; a screw-threaded spindle provided at its upper end with screw-threaded bearings for the reception of a bracket-supporting sleeve; a bracket-supporting sleeve secured to the upper end of said spindle within said screw-threaded bearings, and provided with an annular bearing-collar having in its upper surface an annular groove for the reception of a series of ball-bearings; a series of ball-bearings located in said annular groove and adapted to form a bearing-surface for the seat-supporting bracket, said screw-threaded spindle being supported from said hand-wheel within said base-bracket and provided with longitudinal grooves for the reception of said vertical bearing-arms; a central seat-retaining shaft suspended from the seat-supporting bracket within said spindle; and a stop-pin affixed to said central shaft beneath said roller-bearing sleeve, adapted to prevent said shaft from being withdrawn from the inclosing spindle, all substantially as and for the purpose specified.

In testimony whereof we affix our signatures in the presence of witnesses.

CHARLES C. TRAPP.
FRANK TRAPP.

Witnesses:
CLARA L. ROESCH,
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