

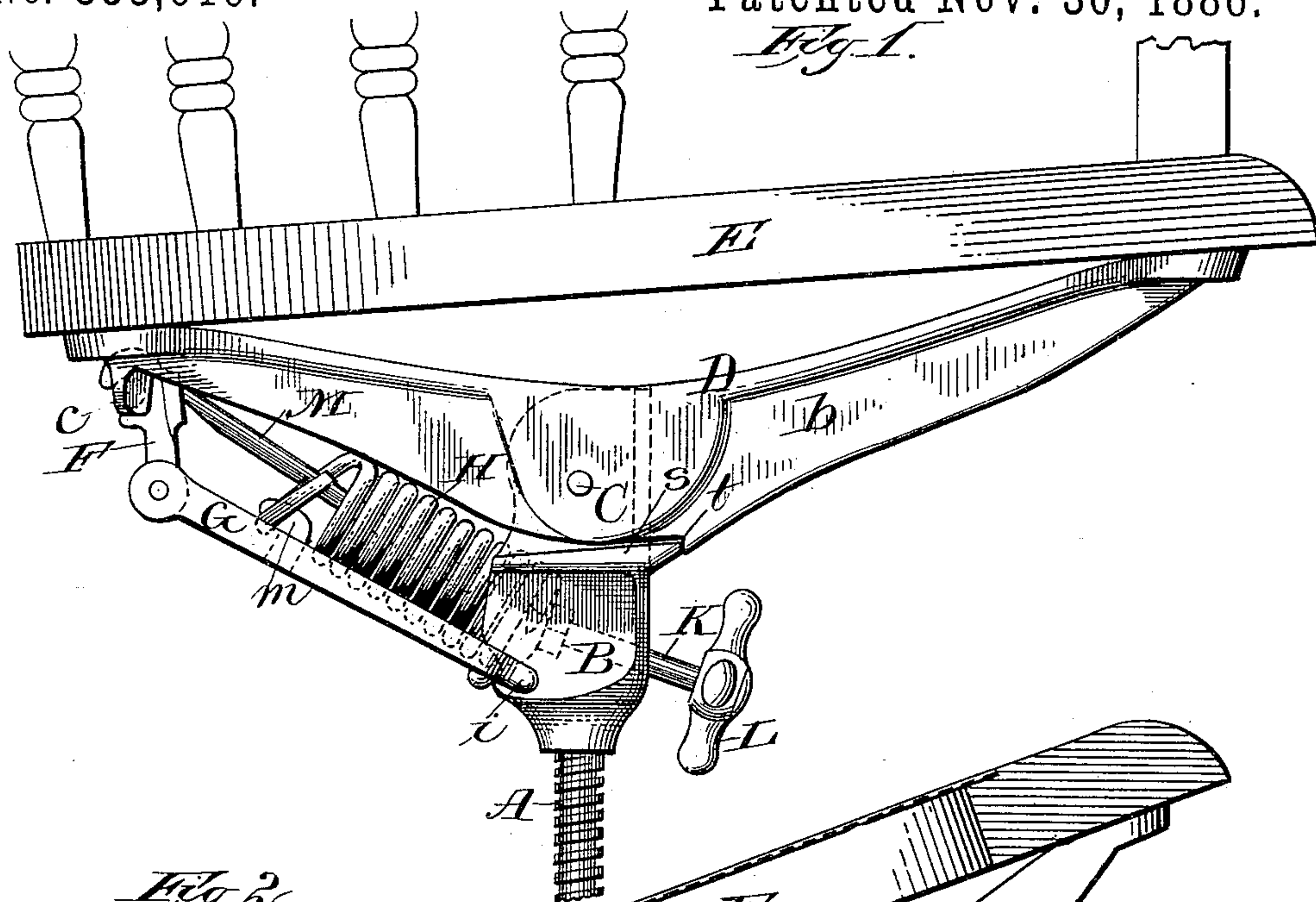
(No Model.)

H. WOLFF.  
TILTING CHAIR IRON.

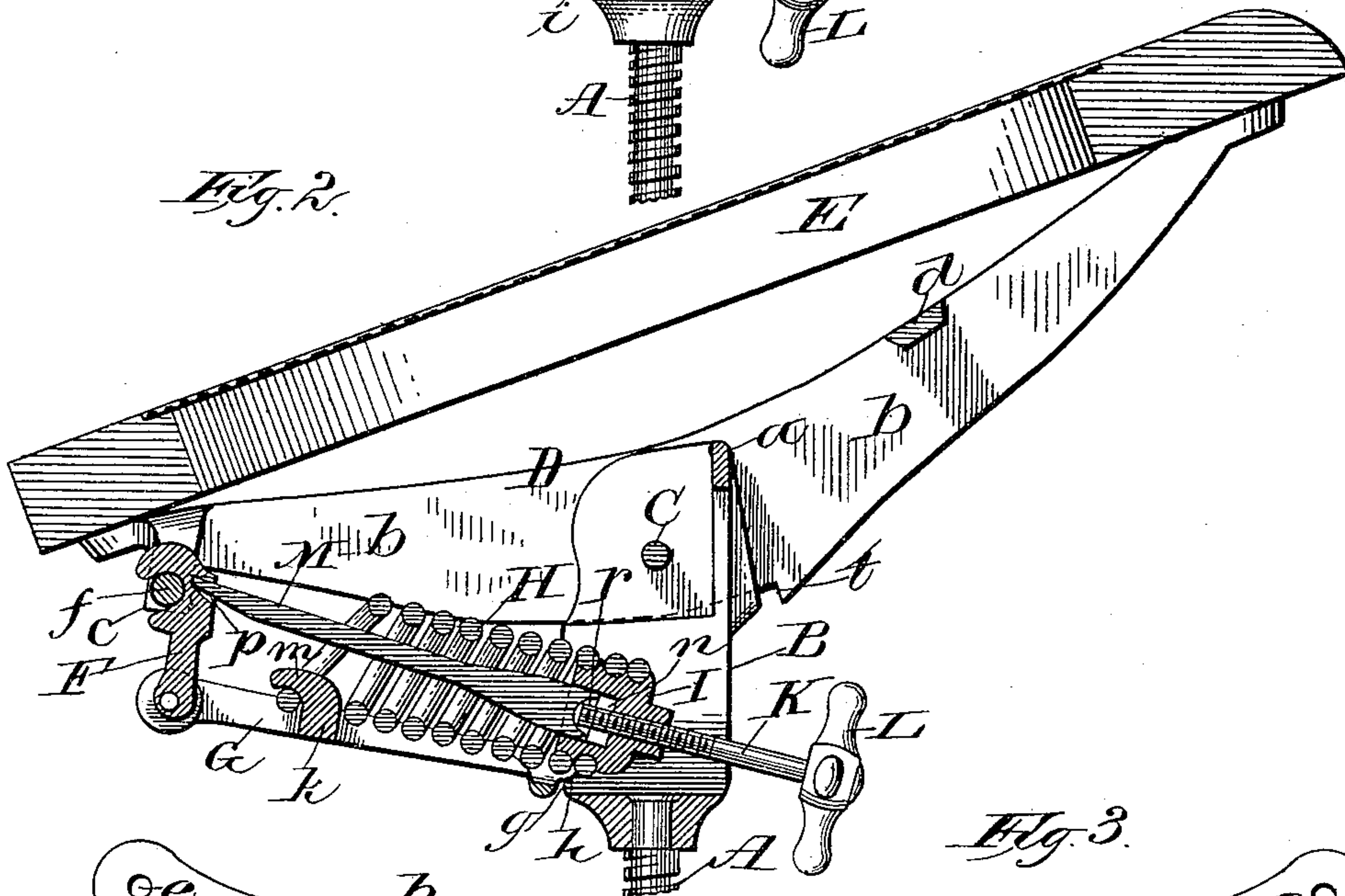
No. 353,616.

Patented Nov. 30, 1886.

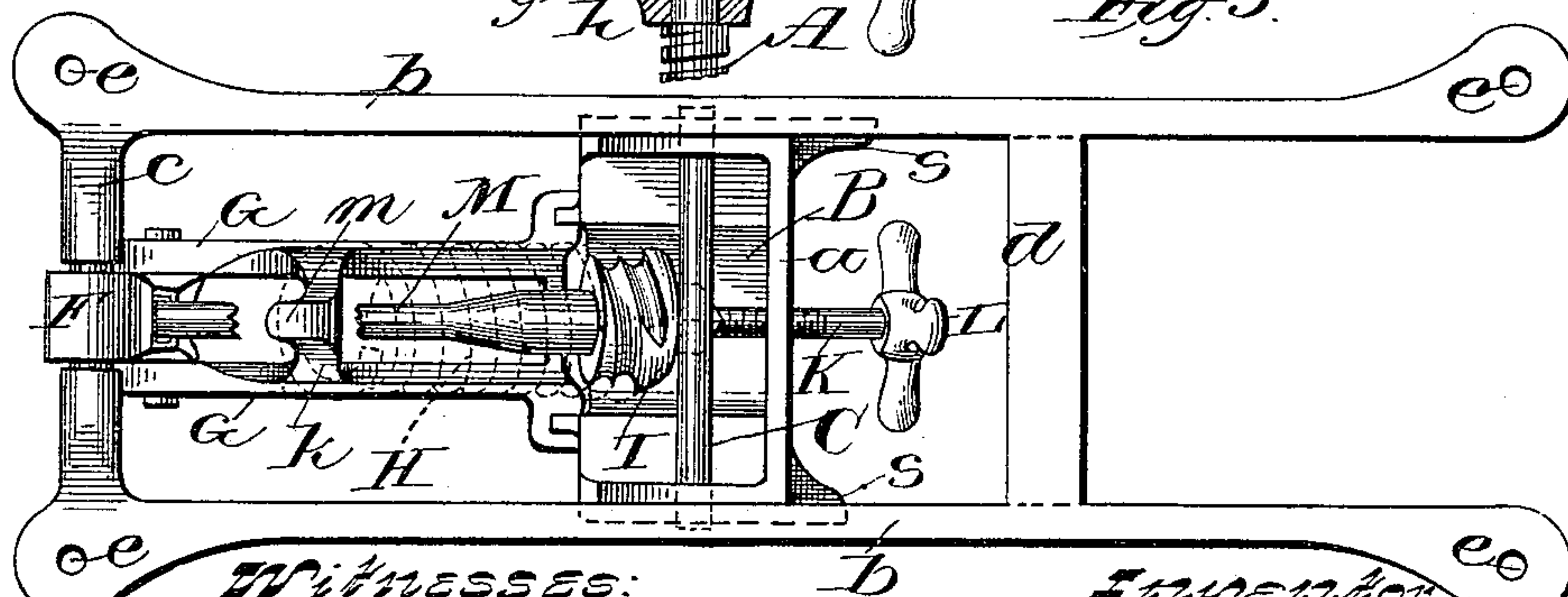
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

HERMANN WOLFF, OF MILWAUKEE, ASSIGNOR TO THE WEBSTER MANUFACTURING COMPANY, OF MENASHA, WISCONSIN.

## TILTING-CHAIR IRON.

SPECIFICATION forming part of Letters Patent No. 353,616, dated November 30, 1886.

Application filed May 1, 1886. Serial No. 200,760. (No model.)

*To all whom it may concern:*

Be it known that I, HERMANN WOLFF, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Tilting-Chair Irons; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to tilting-chair irons; and it consists in certain peculiarities of construction, as will be fully described hereinafter with reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of my chair-iron in operative position; Fig. 2, a longitudinal vertical section, and Fig. 3 a top plan view, of the same.

Referring by letter to the drawings, A represents an elevating screw or spindle socketed at its upper end to a bifurcated standard, B, the bifurcations of the latter being joined at the top by a cross-piece, *a*. A transverse bolt, C, serves to pivotally unite the standard B with a spider-frame, D, to which latter the chair-seat E is secured. The spider-frame consists of a single casting comprising two longitudinal bars, *b*, united by cross-pieces *c* *d*, the ends of the bars being enlarged and provided with perforations *e*, for the screws that serve to secure said frame to the chair-seat E. The rear cross-piece, *c*, is centrally reduced and rounded, as shown at *f*, to form a bearing for the upper jaw end of a link, F, that forms a toggle-connection with a rectangular link, G, the latter having its front end shouldered and reduced, whereby bearings *g* are formed in notches *h* of the standard B, and flanges *i* are formed to come upon the outside of said standards to prevent lateral displacement of this link. A cross-piece, *k*, of the link G is provided with a central hook-shaped lug, *m*, that serves to engage the rear end of a spiral spring, H, that is supported by the sides of said link, the forward end of this spring being fitted to a threaded bushing, I, operative on a screw-rod, K, that is provided at its free end with a hand-wheel, L.

The bushing I has a central recess, *n*, that receives the enlarged end *o* of a bar, M, the rear or reduced end of this bar being received by a notch, *p*, in the toggle-link F. The enlarged end of the bar M that comes within the bushing I is hollowed out, as shown at *r*, to

form a bearing for the screw-rod K. By operating the screw-rod K the bushing I is moved to or fro, as may be found desirable, thereby effecting a correspondingly increased or diminished tension of the spring H.

The longitudinal bars *b* of the spider-frame D have a rocker bearing on shoulders *s* of the standard B, and to limit the movement of this frame these side bars are sufficiently enlarged to form right-angular stops *t*, designed to impinge against the forward ends of said standard-shoulders.

In some instances it may be desirable to employ two springs, instead of one, as above described, thereby securing an easier working chair, and this construction is readily effected by increasing the width of the spider-frame and duplicating the spring and the parts necessary to its operation.

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

1. The combination, with a standard fast to a spindle and a spider-frame pivotally united to the standard, of a rectangular link toggled at its rear end to the spider-frame and having its forward end provided with bearings designed to engage notches in said standard, a spiral spring connected at one end to the link and at the other to a bushing operative on a screw-rod, and a bar having its ends respectively received by the toggle and bushing, as set forth.

2. The combination, with a standard fast to a spindle and a spider-frame pivotally united to the standard, of a toggle-link uniting the spider-frame with a rectangular link, the latter having a bearing in the standard, a spiral spring secured at one end to the rectangular link and at the other to a recessed bushing operative on a screw-rod, and a bar having its front end adapted to fit said bushing and its rear end received by a notch in the toggle-link, as set forth.

3. The combination of a bifurcated standard fast to a spindle and provided with shoulders, and a spider-frame pivoted to the standard and having rocker-bearings on the shoulders thereof, with a spiral spring secured at its rear end to a link toggled to said spider-frame, and a bushing threaded to receive the forward end of the



spring and operative on a screw-rod that bears against a rod extending from the bushing to the toggle-connection of the spider-frame, as set forth.

5 4. In a tilting chair iron, a spider-frame comprising longitudinal side bars having enlarged perforated ends and integral cross-pieces uniting the side bars, the rear cross-piece centrally reduced to form a bearing, and said bars pivotally connected to a bifurcated standard fast  
10 on a spindle, in combination with a toggle-link operatively connected to the rear cross-piece of the spider-frame, a rectangular link pivoted to the toggle-link, a spiral spring connected at  
15 one end to said rectangular link, a bushing operative on a screw-rod and in turn connected to the other end of the spring, and a bar arranged to have its respective ends in impingement against said toggle-link and screw-rod,  
20 as set forth.

5. In a tilting chair iron, a rectangular link having its front end shouldered and reduced and its rear end toggled to a spider-frame pivotally connected to a standard that is fast on a spindle and provided with notches for the  
25 reduced end of the link, in combination with a spiral spring secured at one end to the rectangular link and at the other to a recessed bushing operative on a screw-rod, and a bar fitting the recessed portion of the bushing and  
30 impinging against the toggle-connection of the spider-frame and said link, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses. 35

HERMANN WOLFF.

Witnesses:

H. G. UNDERWOOD,  
MAURICE F. FREAR.