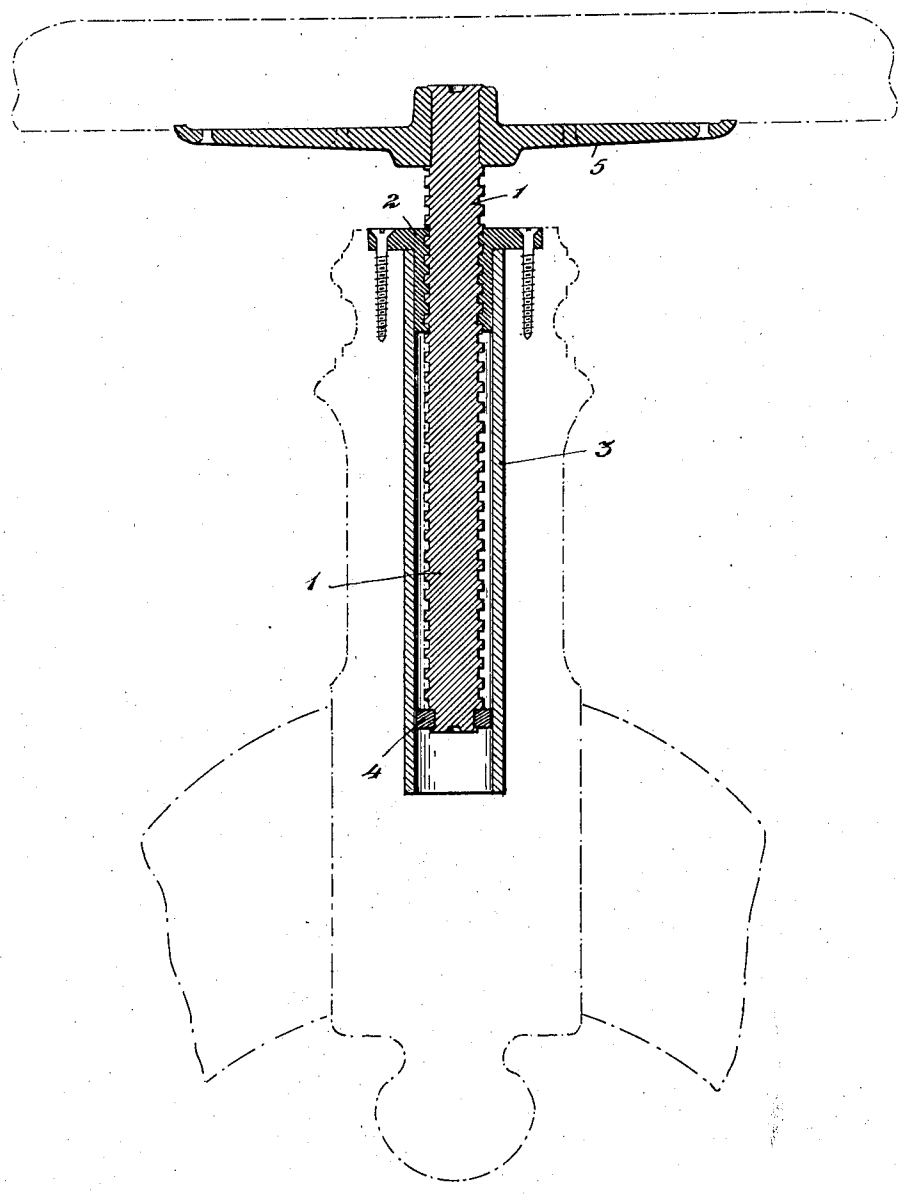
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SCREW SPINDLE FOR STOOLS, CHAIRS, AND THE LIKE.

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1,332,200. Patented Mar. 2, 1920.



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OCTAVIO EUGENIO BORGARELLO, OF BUENOS AIRES, ARGENTINA.

SCREW-SPINDLE FOR STOOLS, CHAIRS, AND THE LIKE.

1,332,200. Specification of Letters Patent. Patented Mar. 2, 1920.

Application filed June 6, 1917. Serial No. 173,106.

To all whom it may concern:

Be it known that I, OCTAVIO EUGENIO BORGARELLO, a citizen of the Argentine Republic, a mechanic, residing at Calle Maipú 671, Buenos Aires, Argentine Republic, have invented a new and useful Screw-Spindle for Stools, Chairs, and the like with Revolving Seat of Adjustable Height, of which the following is a specification.

My present invention relates to an improved screw spindle of the kind used in connection with piano stools, revolving office arm chairs and other similar types of chairs, the seat of which revolves on a central screw spindle which allows of adjusting the seat to the desired height. Said improvement has for object to considerably increase the strength of the screw spindle and the seat cross head and hence the duration not only of the said parts, but indirectly also of the entire stool or chair.

In revolving stools or chairs of common construction, the screw spindle operates within a sleeve, provided with an internal thread and secured within the pillar or supporting column of the stool. To the upper end of the said screw spindle is secured by means of rivets or otherwise a disk or cross head to which the seat is affixed. This construction practically lacks strength under several points of view. Thus, the length of the threaded sleeve on account of difficulties of construction, heretofore has been very small and owing to this fact, a short time after submitting the chair to use, the spindle no longer fits snugly within the thread and is allowed to oscillate in all directions whereby wearing away of the thread increases and the sleeve is readily broken or dismounted.

A further objection to the known arrangement consists in the manner of retaining the upper end of the screw spindle within the disk or cross head fixed to the seat.

The retention of said spindle generally is effected by mere riveting and the axial surface of contact is much restricted. The diameter of the spindle at the point or points of retention also is insufficient and in consequence when a body gravitates on any point of the seat other than the longitudinal center of the screw spindle, the aforementioned parts, if not of extremely strong structure, will get loose and the stool will become useless within a short time.

For the purpose of eliminating the above disadvantages I have devised an arrangement in which the screw spindle is guided at its lower end with a metallic sleeve so that when a body gravitates more or less on the edge of the seat, the lateral strain which would tend to incline the screw spindle, is resisted by two distant points, that is to say, by the usual threaded sleeve, onto which is forced when hot the upper end of the guide sleeve and by the lower end of the spindle which presses against said sleeve.

By this means, a sufficient degree of rigidity is obtained for securely resisting the strains to which stools and chairs of this kind are usually subjected.

With regard to the arrangement of the cross head to which is secured the seat, the same has been improved as compared with the known construction, by forcing the same, when hot, onto the upper end of the screw spindle so that it will be rigidly retained in position thereon, the same as if both parts formed a single piece. The holes for affixing the seat as well as the outer contours of the cross head may be chosen as desired or deemed most convenient and the arrangement of these parts forms no part of the present invention.

In order to facilitate a clear understanding of this specification, an illustrative drawing has been appended thereto which shows a longitudinal section of a screw spindle for revolving stools or chairs, constructed in accordance with this invention.

In said drawing, 1 indicates the screw spindle in engagement with the internally threaded sleeve 2, these being the means generally employed. The improvements which I have applied thereto, comprise a metallic sleeve or tubular section 3, forced when hot onto the sleeve 2 so that both parts will be rigidly connected together, as if formed of one single piece. To the lower end of the screw spindle is firmly secured a disk 4 which guided by the said sleeve, prevents the screw spindle from effecting any lateral motion or inclination, while serving at the same time as abutment for preventing the extraction of the spindle.

As may be seen from the drawing, owing to the small length of the sleeve 2, when this latter forms the sole point of retention of the spindle, as is the case in the arrangement actually known, the resistance which may be opposed thereby is of course much restricted, not only as regards its retention in position

within the supporting column or pillar of the stool but also for the purpose of preventing any oscillation of the spindle which causes the respective part to become worn out after a short time of use.

As will be readily understood, by using the sleeve 3 the aforesaid objection will be overcome, since by lodging the same within a recess formed in the supporting pillar of the stool and causing it to form integral part of the threaded sleeve, it will prevent the upper enlarged part or disk of the sleeve from being submitted to strains which might result in breakage of the part. As to the spindle, it will be evident that owing to the manner of guiding the same in its movement by the said sleeve as well as by the disk forced on the same at its lower end, as above set forth, said spindle will be actually prevented from oscillating in any direction, so that lateral wearing away will not take place, either in the threads of the sleeve or in those of the spindle.

In this manner, the perfect working of the spindle will be obtained and hence an increase in the duration of the whole stool or chair.

The cross head 6 to which is fixed the seat, is driven when hot, onto the upper end of the screw spindle, so that it is made to form integral part of the same. Its outer contours, size and number of perforations for the screws to be used, may vary as deemed convenient.

The manner of securing the said cross head to the screw spindle, is novel and also assists to increase the duration of the whole structure.

It will be readily understood that when a body is gravitating more or less on the edge of the seat, the spindle 1 as well as the cross head 5 will tend to incline toward the corresponding side and it is precisely at this moment when the maximum of resistance will be required in the whole structure. Such resistance is afforded by the addition of the sleeve 3 and the guidance provided thereby at the lower end of the spindle by means of the abutment or retention disk 4.

Owing to the fact that the sleeve 2 as well as the cross head 5 and the retention disk 4 have been secured in position when hot or shrunk on, none of the said pieces will be liable to get loose or detached.

I declare that what I claim as new and desire to secure by Letters Patent, is:

1. In a device of the class described, in combination, a screw spindle; a guide-sleeve adapted to surround said spindle; an interiorly screw-threaded sleeve nut with which said spindle has screw-threaded connection and which is permanently secured to the upper end of said guide-sleeve; and a guiding member for said spindle secured to the lower end thereof and having a sliding fit within said guide-sleeve.

2. In a device of the class described, in combination, a screw spindle; a cross head fast on to the upper end of said screw spindle; an interiorly screw-threaded sleeve nut with which said spindle has screw-threaded connection; a guide-sleeve adapted to surround said screw spindle, said sleeve being at its upper end fast on to said sleeve nut; and a guiding member for said spindle fast on to the lower end thereof and having a sliding fit within said guide-sleeve.

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Witnesses:
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