March 16, 1926. 1,576,881

C. VITEK

AUTOMATICALLY ADJUSTABLE STOOL

Filed March 5, 1924

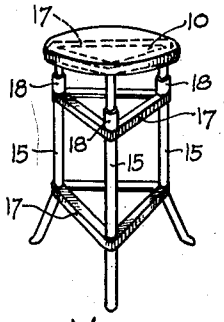


FIG. 2.

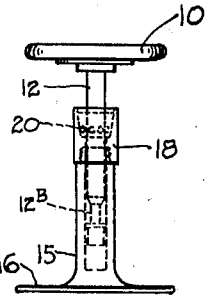


FIG. 1.

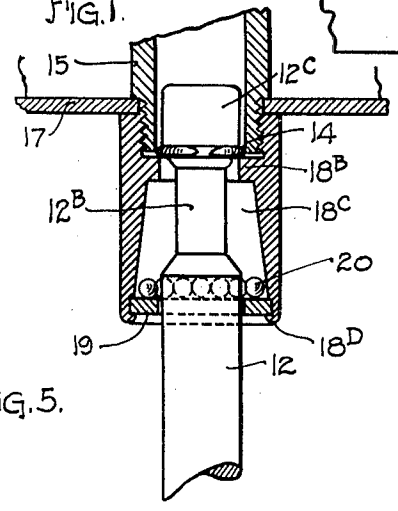


FIG. 5.

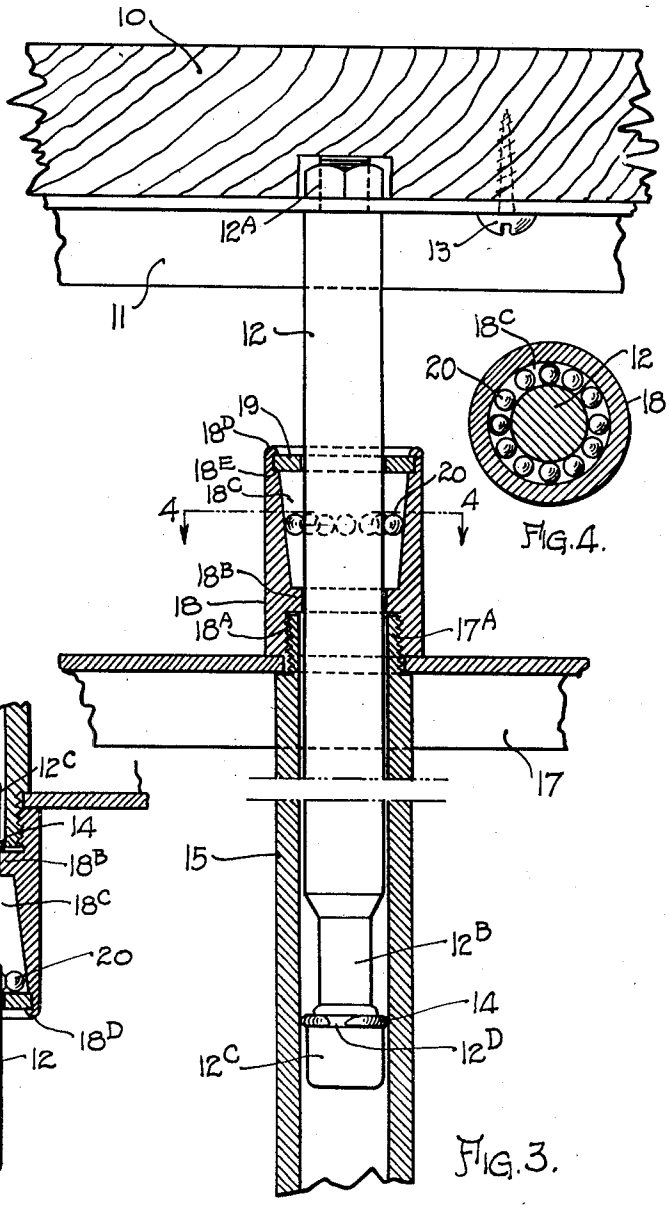


FIG. 3.

FIG. 4.

INVENTOR.
Charles Vitek
BY Frank J. Schraeder Jr.
ATTORNEYS.

Patented Mar. 16, 1926. 1,576,881

UNITED STATES PATENT OFFICE.

CHARLES VITEK, OF OMAHA, NEBRASKA.

AUTOMATICALLY-ADJUSTABLE STOOL.

Application filed March 5, 1924. Serial No. 697,055.

To all whom it may concern:

Be it known that I, CHARLES VITEK, a citizen of the Republic of Czechoslovakia, residing at Omaha, in the county of Douglas and State of Nebraska, have invented new and useful Improvements in Automatically-Adjustable Stools, of which the following is a specification.

This invention relates to improvements in adjustable stools and has particular reference to retaining means for automatically locking or retaining the stool in the desired raised position.

It is one of the objects of this invention, therefore, to provide an automatically locking retainer for the stool support.

Another object is to provide a locking retainer which utilizes frictional means for supporting the stool in elevated position.

A still further object contemplates the provision of an arrangement on the stool support to permit the release of same from the locking or retaining means when the stool is raised to its uppermost position.

With these and other objects in view, my invention consists in the novel combination and construction of the parts and members described in the following specifications shown in one embodiment in the accompanying drawing, and particularly pointed out in the appended claims.

Referring to the illustrations in which like reference characters indicate like or corresponding parts, Figure 1 is a side elevation of a stool embodying my invention and Figure 2 a modified stool having a plurality of supporting legs. Figure 3 is an enlarged detail showing in vertical section my improved automatically locking retainer for the stool support. Figure 4 is a cross section taken on line 4—4 of Figure 3 showing the ball-bearings which act as a wedge for the stool support in retaining position. Figure 5 is a vertical section of the retaining means in inverted position and showing my improved means for releasing the stool support when raised to its uppermost elevated position.

Referring to the drawings: 10 indicates the stool seat which is rigidly connected to the support 12 by means of an angle iron frame 11 and screws 13. The support 12 is provided with a nut 12^A which is countersunk in the bottom of the seat 10.

The support 12 is preferably made of a solid bar of round cross section and terminates in a portion 12^B of decreased diameter or cross section, which portion 12^B is located near the lower end thereof. The end 12^C is grooved at 12^D for the spring stop collar 14.

It is obvious that the stool may be made with a single pedestal leg 15 mounted on the base 16, as shown in Figure 1 or the stool may be made with a plurality of legs 15 as shown in Figure 2. In either case, the leg 15 comprises a hollow or tubular member of an internal diameter slightly greater than the support 12.

In the construction shown in Figure 2, the legs 15 are supported near the bottom by lateral struts 17 of L cross section through which the legs extend and to which they are welded or secured in any other suitable manner. The upper struts 17 and upper ends of the legs are held together by the screw connection 17^A within the retainer 18.

The retainer 18 comprises a comparatively short tubular member, the lower end of which is threaded at 18^A to receive the threaded end of the tubular legs 15. A partition wall 18^B separates the lower threaded chamber 18^A from the upper chamber 18^C. The face of wall in the chamber 18^C converges gradually from the opening at the top toward the bottom at the partition wall 18^B. The top of the chamber 18^C is closed with a disk 19 which, like the wall 18^B, is provided with a central opening for passage of the support 12. The disk 19 is supported on a ledge 18^E in the chamber and the rim 18^D is flanged over it to prevent its withdrawal. Within the chamber 18^C, I provide a plurality of ball bearings 20 which by their contact with the face of the support 12 and the sloping face of the inner wall of the chamber 18^C act as a fractional wedge and thus support the member 12. It is now apparent that the seat 10 and its support 12 can readily be raised, as in raising the ball bearings 20 are also raised into the enlarged portion of the chamber 18^C. After raising the seat 10 to the desired elevation, the ball-bearings automatically lock or wedge in between the support 12 and the chamber wall to retain same against downward movement. If now it is desired to lower the seat, it is only necessary that the stool be inverted or turned up with the seat on the floor, the legs up. A slight pull on the legs then will release the locking engagement of the ball bearings 20 which will fall into the enlarged portion of the chamber 18^C as clearly shown

in Figure 5. A further pressure on the legs will telescope the supports 12 within the legs.

It will be noted that when the stool is inverted, it is necessary to slightly pull upwardly on the legs to release the ball bearing wedge, but if the stool were made without the portion 12^B of decreased diameter it would not be possible to so release the ball bearings had the stool been elevated to its extreme raised elevation. It is now apparent, when viewed in Fig. 5, that the portion 12^B of decreased diameter provides a play or additional room for the ball bearings 20 and so permits that drop in the chamber 18^C when the stool is raised to the extreme elevation.

It is also apparent that the support 12 could be of square section and rollers could be substituted for the balls 20 without departing from the spirit of my invention.

I claim:

1. In an adjustable stool having a seat and a support cylindrical in cross-section for said seat, a retainer comprising a tubular casing having a chamber whose interior walls converge toward the bottom thereof, said support being slidably mounted in said casing, and a plurality of free rolling bearings in said chamber engaging said walls and adapted to freely move about and longitudinally of said support and wedge between said support and walls of the chamber to frictionally retain said support and seat, said retainer being arranged to release said support by inverting the stool to permit said bearings to drop within said casings.

2. In an adjustable stool having a seat and a support cylindrical in cross-section for said seat and having a reduced section at its lower end, a retainer comprising a tubular casing having the interior chamber thereof converging toward the bottom of the casing, said support being slidably mounted in said casing, and a plurality of free rolling bearings in said chamber adapted to move about and longitudinally of said support and wedge between said support and casing, and said retainer being arranged to release said support by inverting the stool to permit said bearings to drop within said casing and permit said roller bearings to be released by the reduced section at the lower end of the support when said seat and support are at their extreme upper adjusted positions.

3. An adjustable stool comprising a seat, a plurality of supports cylindrical in cross-section for said seat, tubular members slidably embracing said supports, and locking means for automatically locking said supports and seat at desired elevations in said tubular members comprising a retainer having a chamber whose interior walls converge towards the bottom thereof for each tubular member and connected with same, and a plurality of free ball bearings in each of said chambers adapted to move about and longitudinally of said supports and wedge between said supports and walls of the chambers to frictionally retain said seat and supports, said ball bearings adapted to release said supports by inverting the position of the stool.

In witness whereof I affix my signature.

CHARLES VITEK.