Nov. 18, 1952 W. H. SCOTT 2,618,315

SEAT SWIVEL

Filed Feb. 28, 1949 2 SHEETS—SHEET 1

FIG. 1.

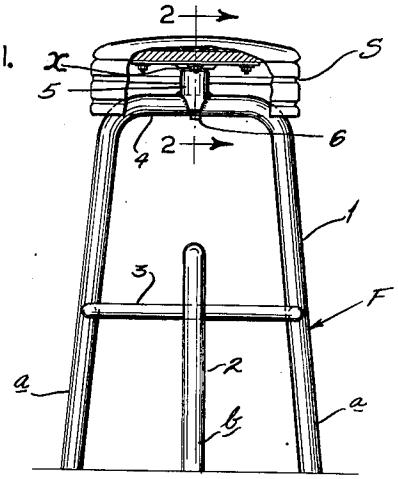


FIG. 2.

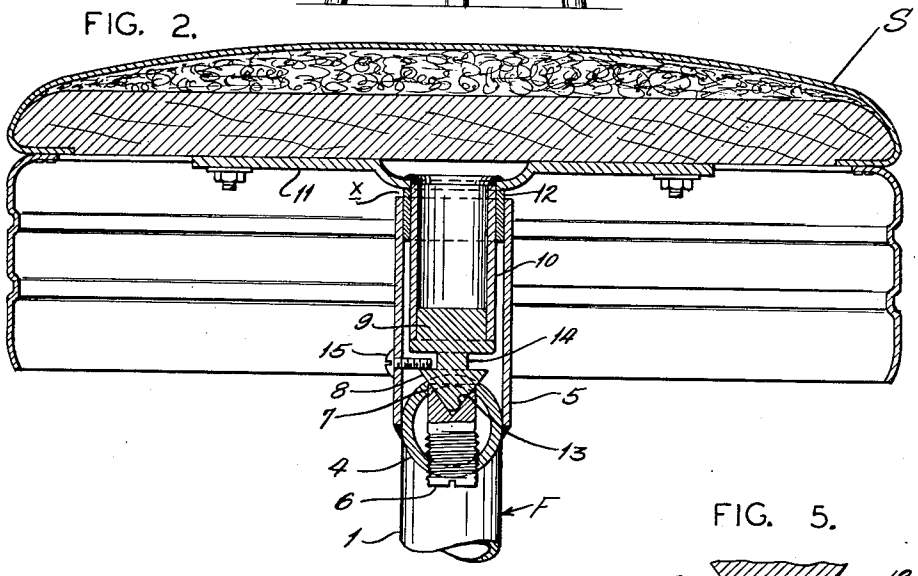


FIG. 3.

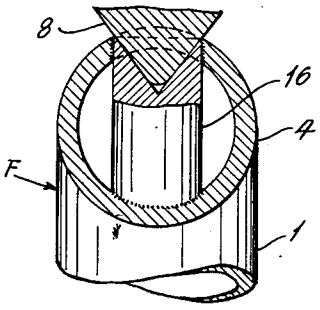


FIG. 4.

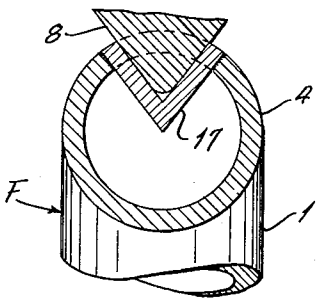
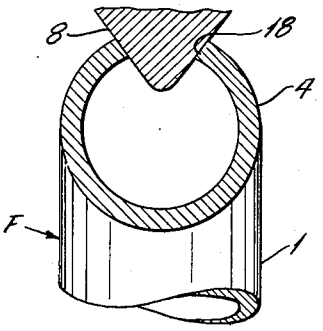


FIG. 5.



INVENTOR:
WILMOT H. SCOTT

BY Harry A. Beinus
ATTORNEY

Nov. 18, 1952 W. H. SCOTT 2,618,315

SEAT SWIVEL

Filed Feb. 28, 1949 2 SHEETS—SHEET 2

FIG. 6.

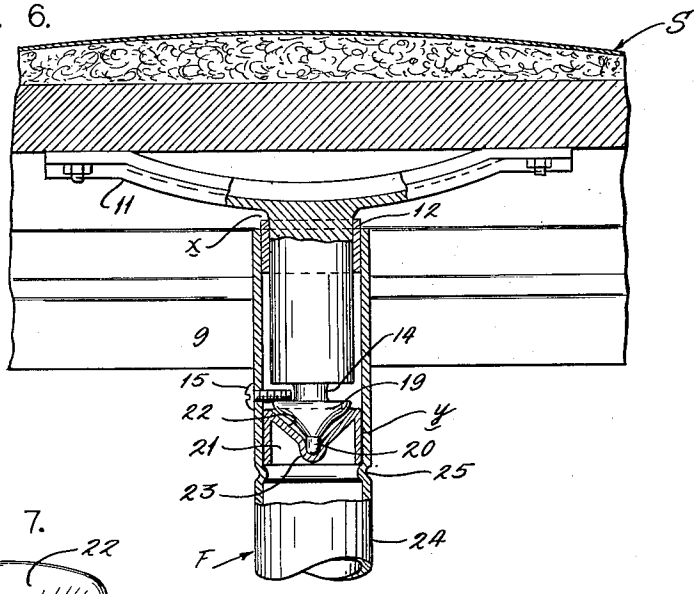


FIG. 7.

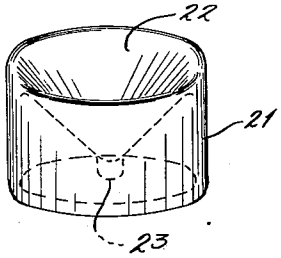


FIG. 8.

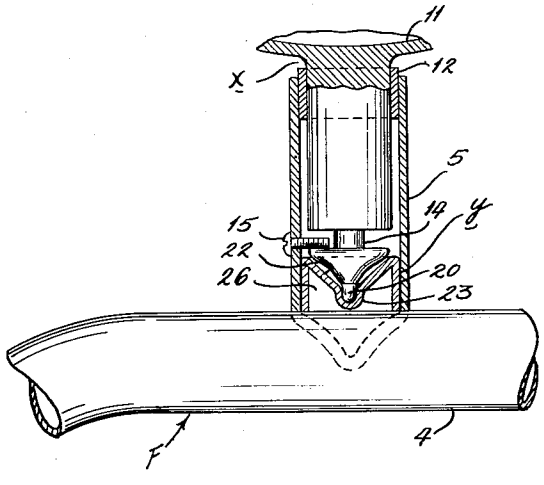
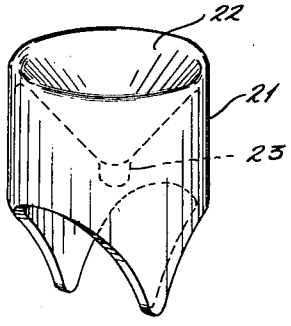


FIG. 9.



INVENTOR:
WILMOT H. SCOTT

BY Harry A. Bennett

ATTORNEY.

Patented Nov. 18, 1952

2,618,315

UNITED STATES PATENT OFFICE

2,618,315

SEAT SWIVEL

Wilmot H. Scott, Clayton, Mo., assignor to Vitro Products Company, St. Louis, Mo., a corporation of Missouri

Application February 28, 1949, Serial No. 78,704

2 Claims. (Cl. 155—95)

1

My invention has relation to improvements in seat swivels for counter stools and it consists in the novel features of construction more fully set forth in the specification and pointed out in the claims.

The invention consists primarily in a swivel construction wherein the weight imposed on the seat is imposed on a conical element of ball-point and the lateral thrust is imposed on a sleeve in spaced relation with said ball-point.

The principal advantage of this construction is that the seat is perfectly centered and the sleeve for taking the lateral thrust reduces to a minimum side play which is so common in the seat supports of ordinary construction.

A further advantage of the invention is that the supporting socket for the weight supporting ball-point may be removed so that when excessive wear occurs it can be replaced by a new socket.

These advantages, together with others inherent in the invention, will be better apparent from a detailed description thereof in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a stool embodying my improved invention, parts of the seat being broken away; Figure 2 is an enlarged cross-sectional view taken on the line 2—2 of Figure 1 showing the upper frame member and tubular standard containing the seat swivel; Figures 3, 4 and 5 show cross-sectional views of modifications of the various forms of conical elements and seats that may be employed; Figure 6 shows a further modification wherein the seat support consists of a ball-point resting in a seat supporting element; Figure 7 is a perspective view of the seat supporting element shown in Figure 6; Figure 8 shows a similar construction to Figure 6, except that instead of a vertical standard a horizontal frame member supports the tubular standard for receiving the seat swivel; and Figure 9 shows a perspective view of the supporting seat shown in Figure 8.

Referring to the drawings (for the present Figures 1 to 5, inclusive) F represents a supporting frame comprising an inverted U-shaped member 1 and a second inverted U-shaped member 2 disposed transversely to the U-shaped member 1, the leg elements *a*, of the member 1 and the leg elements *b*, of the member 2 being connected by a ring 3. Projecting upwardly from and welded to the cross member 4 of the frame member 1 is a tubular upright 5. The cross member 4 has a seat member 6 screwed into it from the bottom (Figure 2) which seat member enters an

2

opening 7 formed in the upper surface of the cross member 4 so as to receive the conical head 8 of a plug 9 which is driven or otherwise securely fixed into tubular member 10 which carries supporting bracket 11 on its upper end. The supporting bracket 11 is preferably welded to the tube 10 and supports the seat S of the stool. A sleeve 12 is driven or sweated on to the tube 10 so as to be more or less an integral part thereof, said sleeve, tube 10, and plug 9 constituting the supporting stem for the stool seat S. This stem may be inserted into the tube 5 so that the conical head 8 is seated in a recess 13 at the upper end of screw 6 and so that the sleeve 12 engages the upper part of tube 5 in intimate relation. Preferably the sleeve 12 is of a softer material, such as brass, than the tube 5 which is preferably of steel, and there is also a clearance provided as at *x* between the upper edge of the tube 5 and the bracket 11 to allow for wear between the conical head 8 and socket 13 where the vertical thrust is taken. In order that the seat S may not be readily lifted from the tube 5 a channel 14 is provided in the plug 9 and a screw 15 is threaded through the tube 5 so as to enter said channel. Obviously in order to remove the seat S the screw 15 must first be removed, after which the seat S may be lifted from the supporting tube 5.

Obviously there are various methods in which the seat S for the conical head 8 may be secured into the cross member 4 of frame F. In Figure 3, I show a cylindrical seat member 16 welded into the cross member 4. In Figure 4, I show a conical seat member 17 welded into the upper part of the member 4. In Figure 5, I merely show a tapered opening 18 in the upper part of the member 4 in which the conical head 8 may be seated.

In Figure 6, I show a further modified form of the construction wherein the conical head 19 is formed with a concave surface and a ball-point 20 and the seat wherein the ball-point rests consists of a cylindrical member 21 with a conical depression 22 terminating in a ball-socket 23 in which rests the ball-point 20 of the supporting head 19. The construction shown in Figure 6 is particularly adapted to a stool wherein the frame construction embodies a tubular upright 24 and the seat member 21 may be dropped therein and supported by a beaded ring 25 formed at the proper distance from the upper end of the upright 24. In this construction there is no separate tubular member to receive the seat stem as

the supporting socket for the seat stem is integral with the upright **24**.

However, in a stool construction wherein an upright tubular member **5** is necessary to support the seat stem as in Figures 1 and 2, the seat member **26** must be properly shaped to straddle the cross member **4** of the frame, as shown in Figures 8 and 9.

In the construction shown in Figures 6 to 9, inclusive, it will be noticed that the seat members **21** and **26** are not rigidly secured to the member **4**, but merely rest thereon and have a certain amount of side clearance as indicated by *y*. The advantage of this is that the seat for the seat stem will then be self-centering.

From the foregoing it is apparent that I have evolved a seat swivel wherein the main burden of the weight or vertical thrust is taken on a seat which may be, as occasion requires, replaced, and that the lateral thrust is taken on a sleeve specially adapted for this purpose. It is also apparent that the self-centering feature of the seat support will result in a minimum of wear and long life for the stool.

Having described my invention, I claim:

1. In a stool, a supporting frame, a seat and a swivel structure rotatably connecting said seat to said frame, said structure including a housing having a cylindrical wall and having its axis extending vertically, a cup-shaped member removably disposed in said housing, said member presenting an upwardly facing depression, means supporting said member at a predetermined distance from the bottom of said housing, a stem secured to said seat and extending into said housing, said stem having a bearing face at its lower end of a shape complementary to the face of the depression of the cup-shaped member, the internal diameter of said housing and the external diameter of the cup-shaped member being such as to permit a small amount of side-play there between, and the length of said stem being sufficient to support the seat out of contact with the top of said housing.

2. In a stool, a supporting frame, a seat and a swivel structure rotatably connecting said seat to said frame, said structure including a housing having a cylindrical wall and having its axis extending vertically, an annular flange within the housing at a predetermined distance from the bottom thereof, a cup-shaped member loosely resting on said flange, said member presenting an upwardly facing depression, a stem secured to said seat and extending into said housing and provided at its lower end with a bearing face having a shape complementary to the face of said depression, and the length of said stem being sufficient to support said seat out of contact with the top of said housing.

WILMOT H. SCOTT.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
320,916	Dunlap	June 30, 1885
1,766,486	Collier	June 24, 1930
1,897,676	Ries	Feb. 14, 1933
2,306,891	McArthur	Dec. 20, 1942
2,364,516	Buckstaff	Dec. 5, 1944

FOREIGN PATENTS

Number	Country	Date
136,003	Switzerland	June 2, 1930