March 16, 1943. S. SEGAL 2,313,776

TOILET PAPER HOLDER

Filed Dec. 4, 1940

Fig. 1.

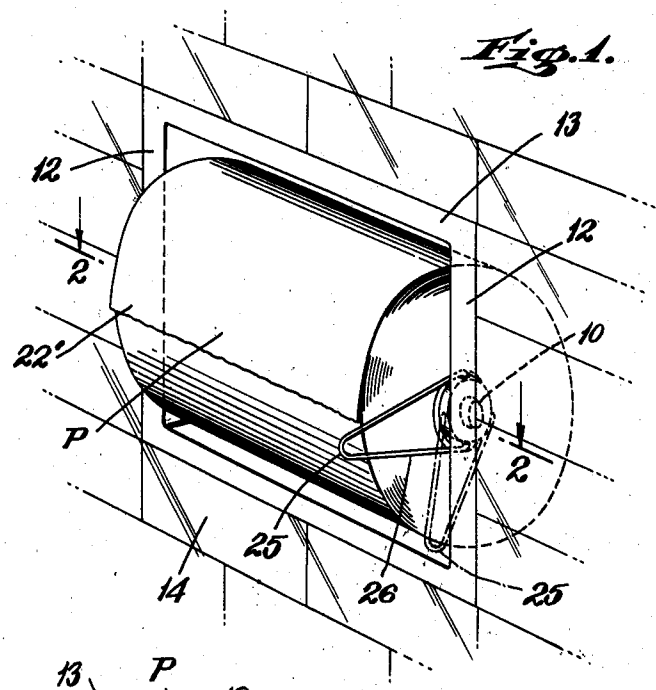
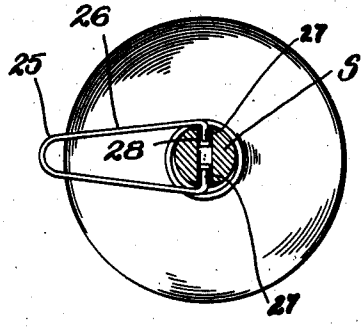


Fig. 4.



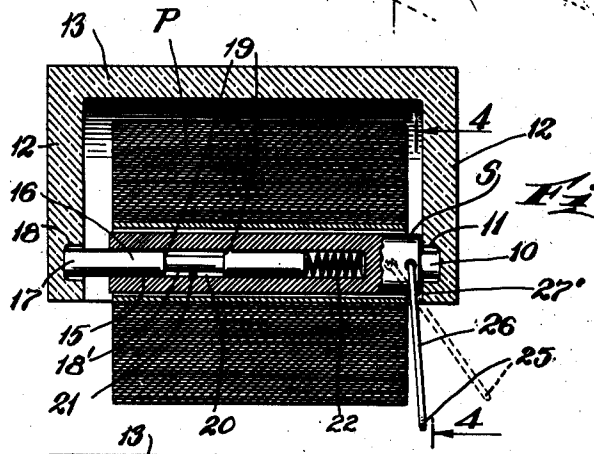
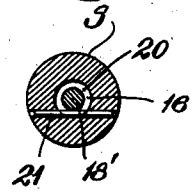


Fig. 2.

Fig. 5.



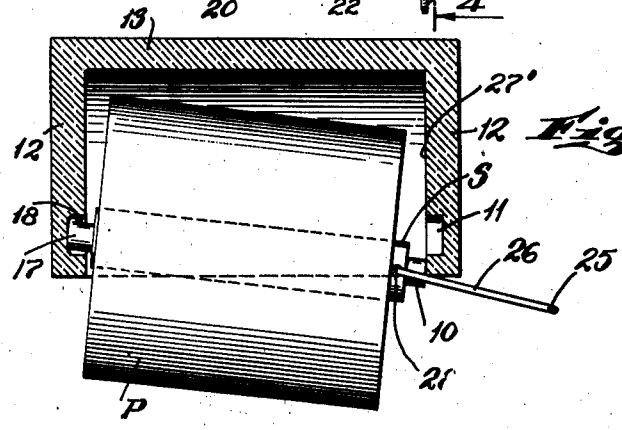


Fig. 3.

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UNITED STATES PATENT OFFICE

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TOILET PAPER HOLDER

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Application December 4, 1940, Serial No. 368,553

13 Claims. (Cl. 242—55.2)

The invention is directed to a paper roll support and particularly is concerned with an improved spindle for supporting a paper roll desirably utilized for toilet purposes.

The dominant object of the invention resides in the provision of greater convenience in the matter of removing the paper roll spindle from its supporting housing and in the matter of setting thereof therein.

In the accompanying drawing which illustrates a preferred embodiment of the invention:

Fig. 1 is a perspective view of the paper roll support and the spindle actuator in the form of a swingable handle.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1, illustrating the spindle in its set or locked position.

Fig. 3 is a view similar to Fig. 2 but illustrating the actuator cooperating with a side of the supporting housing for readily unlocking the spindle therefrom,

Fig. 4 is a sectional view on the line 4—4 of Fig. 2, and

Fig. 5 is a transverse sectional view of Fig. 2.

According to the invention, a cylindrical spindle S rotatably supports a roll of tissue paper P to which convenient access is desired.

Fixedly projecting from one end of the spindle is the trunnion or stud 10 removably sustained in socket or bearing 11 in one of the sides 12 of a casing 13 fixedly mounted in the wall 14.

Slidably mounted within the bore 15 of spindle S is the cylindrical rod 16 having its outer end or trunnion 17 removably retained in socket or bearing 18 of another side of the casing.

This rod is provided with a reduced portion 18' defining with the body, the spaced shoulders 19 and with the sides of bore 15 the annular gap 20.

Movement of rod 16 axially of and relative to the spindle is limited by the fixed stop pin 21 passed through the spindle substantially diametrically thereof and traversing gap 20 to cooperate with either of the shoulders 19.

Normally the helicoidal spring 22 confined within bore 15 is expanded thus causing rod 16 to appreciably project beyond the spindle and be desirably retained in socket 18.

With the roll of paper rotatably and loosely mounted on the spindle and the trunnions of the latter retained in the spaced sockets or bearings 11 and 18, the free end 22' of the paper roll may be readily grasped to rotate the roll until a desired amount of paper has been unravelled. In use of course the supporting roll of paper becomes exhausted and a new roll therefore is substituted.

In practice considerable difficulty has been met in the matter of readily disconnecting the spindle from its bearings for the purpose of supporting a new roll thereon.

Consequently it is a primary object of the invention to provide means for conveniently and readily attaching and detaching the spindle to the housing or casing and to this end a swingable bail 25 or handle is employed to actuate the body of the spindle relative to rod 16.

More specifically the handle or actuator 25 is in the form of a wire hairpin loop having sides 26 straddling the spindle and including inwardly turned trunnions 27 rotatably disposed and confined in the hollow ferrules 28 fastened into diametrical parts of the spindle.

By this arrangement advantage is taken of the inherent tendency of the sides or arms 26 of the bail or control means 25 to move toward each other and consequently the trunnions 27 are prevented from accidental removal from the sockets 23.

Moreover the bail can be conveniently swung relative to the spindle and if desired toward and against an inner side face 27' of the hollow casing 13 whereby the spindle is bodily shifted relative to rod 16 to compress spring 22.

It follows therefore that trunnion 10 is bodily moved out of its bearing 11 and thereafter the spindle falls into an inclined relation as shown in Fig. 3 after which it is readily withdrawn from the casing for supporting thereon a new roll of paper.

Having supplied a new roll, the spindle is conveniently reset in the housing. This is accomplished by first positioning trunnion 17 in bearing 18. Subsequently the swingable handle is grasped and forced in such a direction to again bodily shift the spindle relative to rod 16. This action permits the fixed trunnion to be shifted clear of side face 27'. Thus this trunnion may be readily lifted by the aid of the handle to the waiting bearing 11 where it enters automatically on the retraction of the spindle due to the release or expansion of spring 22.

Where therefore the spindle is desired to be removed from the housing or casing, it is merely necessary to tilt the swingable handle to cooperate with the side of the casing as described for conveniently and desirably removing the trunnions from the casing and of course such removal may be attained even without the aid of the side face 27' in instances where the handle is first

grasped and urged towards and against the resistance of the spring although less effort is required in the preferred manner as for example, by tilting the handle against the casing, thus obtaining added leverage.

Various changes may be made in the details of construction and arrangement of parts without departing from the spirit of the invention or sacrificing any of the advantages thereof inherent therein.

I claim:

1. In combination, a spindle having a bore, a rod at least in part movably disposed in said bore, spring means within said bore for normally projecting a part of said rod outside of said spindle, a stud carried by said spindle, and a handle swingably mounted on and carried by said spindle for bodily shifting the latter relative to and longitudinally of said rod.

2. In combination, a spindle having a bore and including a pair of spaced and transversely arranged end faces, a rod carried by said spindle and slidably guided relative to said bore, spring means within said bore for normally projecting an appreciable part of said rod outside of said spindle beyond one of said faces, a stud carried by said spindle and projecting beyond the other end face of said pair, and a control handle carried by and swingably connected to said spindle for bodily shifting the latter relative to and longitudinally of said rod.

3. In combination, a spindle having a bore and including a pair of spaced and transversely arranged end faces, means comprising a rod at least in part movably guided in said bore, spring means within said bore for normally projecting a part of said rod outside of said spindle beyond one of said faces, a stud carried by said spindle and projecting beyond the other end face of said pair, and an acuator swingably carried by said spindle for bodily shifting the latter relative to and longitudinally of said rod.

4. In combination, a spindle for rotatably supporting a roll and having a bore and including a pair of spaced end faces, a rod carried by said spindle and slidably guided relative to said bore, spring means within said bore for normally projecting a part of said rod outside of said spindle beyond one of said faces, a stud carried by said spindle and projecting beyond the other end face of said pair, spaced bearings on said spindle, and a handle having trunnions rotatably sustained in said bearings.

5. In combination, a spindle for rotatably supporting a roll and having a bore and including a pair of ends, an axial member movably guided relative to the wall of said bore, spring means within said bore for normally projecting a part of said rod outside of said spindle beyond one of said ends, a stud carried by said spindle at the other end of said pair, spaced bearings on said spindle, and a spring handle having spaced arms straddling said spindle and including trunnions rotatably sustained in said bearings.

6. In combination, a spindle for rotatably supporting a roll and having a bore and including a pair of spaced ends, a rod carried by said spindle and slidably guided relative to the wall of said bore, spring means within said bore for normally projecting a portion of said rod outside of said spindle beyond one of said ends, a stud carried by said spindle and projecting beyond the other end of said pair, spaced bearings on said spindle, a swingable handle having trunnions rotatably sustained in said bearings, and a housing for receiving a part of said roll and including spaced sockets for removably sustaining said portion and said stud.

7. In combination, a spindle for rotatably supporting a roll and having a bore and including a pair of spaced ends, a rod carried by said spindle and slidably guided relative to the wall of said bore, spring means within said bore for normally projecting a portion of said rod outside of said spindle beyond one of said ends, a stud carried by said spindle and projecting beyond the other end of said pair, a housing having spaced means for removably sustaining said portion and stud, spaced bearings on said spindle, and a handle having trunnions rotatably sustained in said bearings and adapted to cooperate with a part of said housing for bodily shifting said spindle longitudinally of said rod for removing said stud from one of said spaced means.

8. A paper supporting spindle adapted to be removably sustained in a pair of spaced sockets in spaced sides of a housing, said spindle comprising a bore, a spring within said bore, a slidably guided rod controlled by said spring and projecting in part outside of said spindle and adapted to be removably sustained in one of said sockets, a stud extending from said spindle and adapted to be removably sustained in the other socket of said pair, and a handle swingably mounted on and carried by said spindle and cooperating with one of said sides to shift said spindle relative to said rod for removing said stud from said last mentioned socket.

9. A paper supporting spindle adapted to be removably sustained in a pair of spaced sockets in spaced sides of a housing, said spindle comprising a bore, a spring within said bore, a slidably guided rod controlled by said spring and projecting in part outside of said spindle and adapted to be removably sustained in one of said sockets, a stud extending from said spindle and adapted to be removably sustained in the other socket of said pair, and a handle having arms straddling said spindle and having rotatable connections with said spindle and cooperating with one of said sides to shift said spindle relative to and in a direction towards said rod for removing said stud from said last mentioned socket.

10. A paper supporting spindle adapted to be removably sustained in a pair of spaced sockets in spaced sides of a housing, said spindle comprising a bore, a spring within said bore, a slidably guided rod in part projecting outside of said spindle and adapted to be removably sustained in one of said sockets, a stud extending from said spindle and adapted to be removably sustained in the other socket of said pair, and a handle swingably mounted on and carried by said spindle to allow said handle to abut one of said sides when swung towards said last mentioned side to shift said spindle bodily relative to said rod and away from said last mentioned side and against the resistance of said spring for removing said stud from said last mentioned socket.

11. A paper supporting substantially cylindrical spindle adapted to be removably sustained in a pair of spaced sockets in spaced sides of a housing, said spindle comprising a bore, a spring within said bore, a slidably guided rod disposed axially of and in part projecting outside of said spindle and adapted to be removably sustained in one of said sockets, a stud disposed axially of and extending from said spindle and adapted to be removably sustained in the other socket of said pair and, a resilient loop comprising spaced arms

swingably straddling said spindle and having rotatable connections therewith to permit said loop to abut one of said sides when swung towards said last mentioned side to shift said spindle bodily and linearly relative to and in a direction towards said rod and away from said last mentioned side and against the resistance of said spring for removing said stud from said last mentioned socket.

12. A paper supporting spindle adapted to be removably sustained in a pair of spaced sockets in spaced sides of a housing, said spindle comprising a bore disposed longitudinally thereof and spaced bearings, a spring within said bore, a slidably guided rod in part projecting outside of said spindle and adapted to be removably sustained in one of said sockets, a stud extending from said spindle and adapted to be removably sustained in the other socket of said pair, and a pivoted handle in part within said housing and disposed adjacent to one of said sides and having spaced trunnions rotatably and yieldingly retained in and guided in said bearings to allow said handle to abut said last mentioned side when swung in a direction thereto for actuating said spindle bodily relative to and in a direction towards said rod and linearly away from said last mentioned side and against the resistance of said spring for removing said stud from said last mentioned socket.

13. In combination, a spindle having a bore and including a pair of spaced and transversely arranged end faces, a rod slidable relative to said spindle and carried thereby, spring means within said bore for normally projecting a part of said rod outside of said spindle beyond one of said faces, a stud carried by said spindle and projecting beyond the other end face of said pair, and an actuator swingably mounted on and sustained by said spindle for bodily shifting the latter relative to and longitudinally of said rod.

SAMUEL SEGAL.