July 1, 1969 L. A. LUCIETTO ETAL 3,452,954

BRACKET FOR MOUNTING ON APERTURED PANEL

Filed Aug. 4, 1967 Sheet 1 of 2

FIG. 1

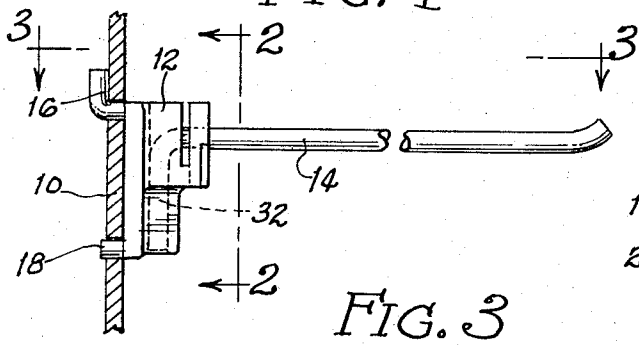


FIG. 2

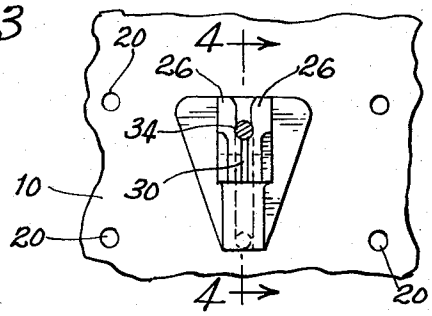


FIG. 3

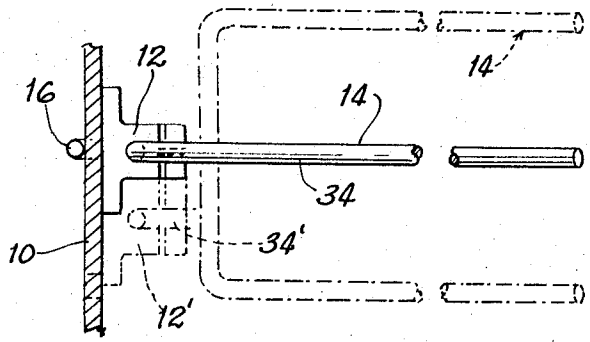


FIG. 4

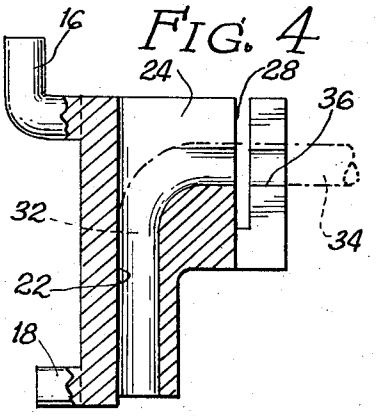


FIG. 6

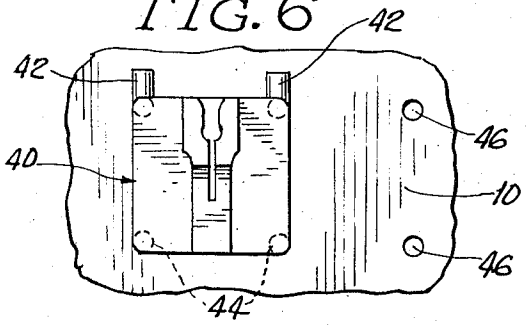


FIG. 5

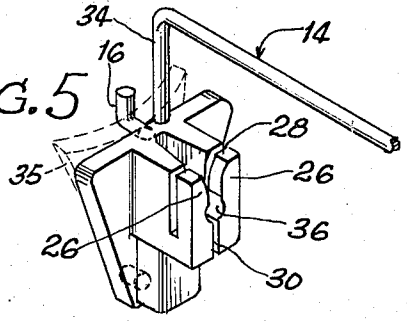


FIG. 7

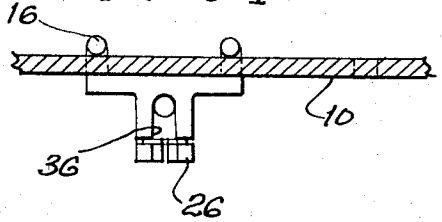
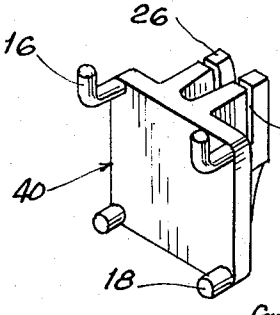


FIG. 8



INVENTORS
Lambert A. Lucietto
Ledo B. Lucietto
by McDougall, Hersh, Scott and Ladd
Attys

July 1, 1969 L. A. LUCIETTO ET AL 3,452,954

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Filed Aug. 4, 1967 Sheet 2 of 2

FIG. 9

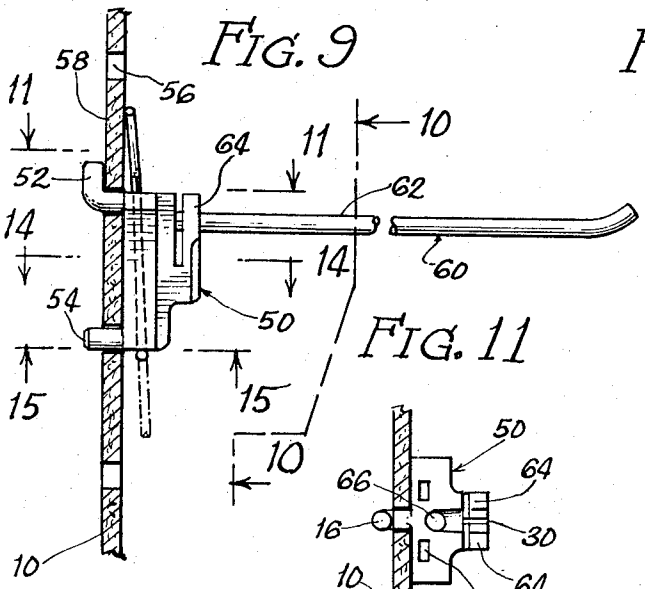


FIG. 10

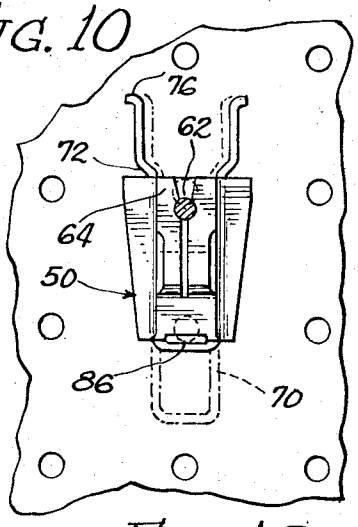


FIG. 11

FIG. 12

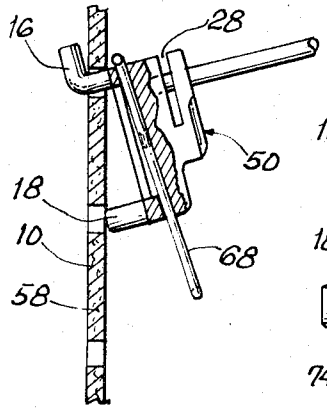


FIG. 13

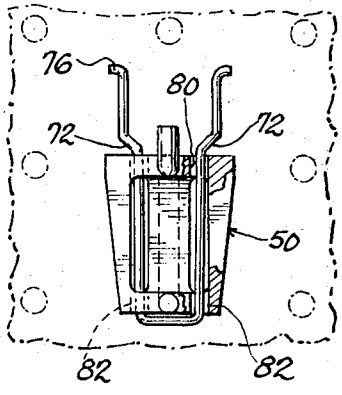


FIG. 14

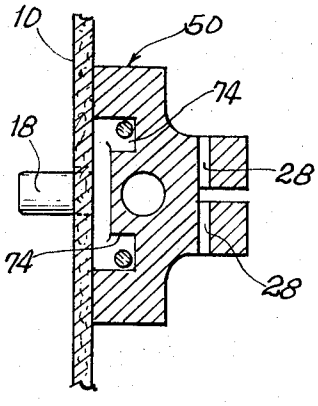


FIG. 15

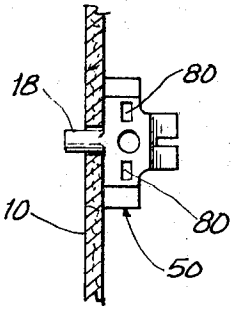
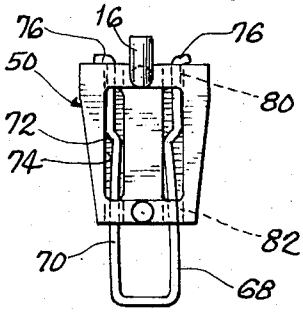


FIG. 16



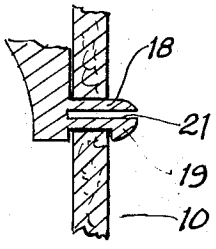


FIG. 17

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3,452,954

BRACKET FOR MOUNTING ON APERTURED PANEL

Lambert A. Lucietto, 2341 N. Melvina Ave., Chicago, Ill. 60639, and Ledo B. Lucietto, 3721 N. Scott St., Schiller Park, Ill. 60176

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Int. Cl. E06b 7/28
U.S. Cl. 248—220.5 13 Claims

ABSTRACT OF THE DISCLOSURE

A structure comprising a bracket for attachment to an apertured panel. The bracket includes a main body portion defining a vertical opening for receiving the bent-over end of an article supporting rod and a channel at the top of the bracket for receiving the shank of the rod. The channel is defined in part by opposed arms which are spread apart as the shank is forced into the channel whereby the rod will be firmly held. The bracket may include a locking member carried by passages formed in the body portion of the bracket. The locking member is reciprocally movable between a locked position and an unlocked position. In the locked position, it bears against the apertured panel to firmly maintain the bracket in place.

This invention relates to a structure adapted to be attached to an apertured panel such as a perforated board. The structure comprises a bracket, and an article supporting rod releasibly held by the bracket. In addition, the invention relates to a retaining means for such brackets whereby the brackets will be held firmly in position on the panel.

Perforated boards customarily comprise panels of metal or composition materials having apertures uniformly formed across their surface. Brackets of many types have been designed for such perforated boards. These brackets all include hook means which fit into one or more of the apertures whereby the brackets will be supported on the board with the brackets in turn being used for holding various articles.

The perforated boards have distinct advantages primarily because the brackets can be placed in any desired position. This simplifies the initial use of the board and it permits changing of the arrangements on the board when desired.

Certain limitations are recognized in available brackets utilized for perforated boards. Most brackets are integral pieces designed to hold a particular type of article. For example, where the brackets are used for supporting tools, specific brackets are provided for supporting hammers while brackets of a completely different design are utilized for screw drivers, pliers, etc. Where any rearrangement is desired, it is usually necessary to remove the entire bracket. This can be inconvenient particularly where the perforated board is positioned directly against a wall.

Many bracket designs are also undesirable because they are not firmly held in position. Thus, some brackets will tend to fall off whenever articles are removed from the brackets. Means are available for securing the brackets in position; however, these means reduce the advantages of the brackets since they impede changing the bracket positions. In some cases, these means also tend to unduly wear and enlarge the apertures or are difficult to remove.

It is a general object of this invention to provide an improved bracket design for use with perforated boards or other apertured panels whereby maximum utilization

of the bracket and perforated board concept can be achieved.

It is a more specific object of this invention to provide a structure consisting of a bracket and rod assembly which permits changing of the article supporting rods without disturbing the position of the bracket.

It is a further object of this invention to provide a bracket construction which includes a locking member which will firmly secure the bracket on a perforated board but which is readily unlocked whereby the bracket can be easily removed from the perforated board.

These and other objects of this invention will appear hereinafter and for purposes of illustration, but not of limitation, specific embodiments of the invention are shown in the accompanying drawings in which:

FIGURE 1 is a side elevation of a bracket and rod assembly characterized by the features of this invention;

FIGURE 2 is a cross-sectional view taken about the line **2—2** of FIGURE 1;

FIGURE 3 is a plan view taken about the line **3—3** of FIGURE 1;

FIGURE 4 is an enlarged vertical sectional view taken about the line **4—4** of FIGURE 2;

FIGURE 5 is an exploded perspective view of the bracket and rod assembly;

FIGURE 6 is a front elevational view of a modified form of a bracket assembly;

FIGURE 7 is a plan view of the bracket shown in FIGURE 6;

FIGURE 8 is a perspective view of the bracket shown in FIGURE 6;

FIGURE 9 is a side elevation illustrating a bracket and rod assembly including a locking member;

FIGURE 10 is a cross-sectional view taken about the line **10—10** of FIGURE 9;

FIGURE 11 is a cross-sectional view taken about the line **11—11** of FIGURE 9;

FIGURE 12 is a side elevational view of the assembly illustrated with the locking member in the inoperative position;

FIGURE 13 is a rear elevation, partially cut away, of the assembly;

FIGURE 14 is a cross-sectional view taken about the line **14—14** of FIGURE 9;

FIGURE 15 is a bottom view taken about the line **15—15** of FIGURE 9;

FIGURE 16 is an elevational view of the assembly with the locking member in the inoperative position; and

FIGURE 17 is a fragmentary cross sectional view illustrating a locking detent for the bracket.

The structure of this invention consist of a bracket which includes at least one integrally formed hook member adapted to be received in an aperture defined by a perforated board or the like whereby the bracket will be held on the perforated board. An article supporting rod is releasibly held by the bracket. The bracket defines an elongated opening for receiving a bent-over end of the rod and a channel is formed at the top of the bracket for receiving the shank of the rod. The channel is defined at least in part by opposed arms which resiliently hold the rod in place.

The invention also generally relates to a locking member which may be associated with a bracket of the type described or with brackets of other designs. The locking member may comprise a spring reciprocally mounted on the bracket and adapted to move from an inoperative position to a retaining position. In the unlocked position, the bracket can be readily attached to or removed from a perforated board. When moved to the locked position, the spring will snap into place and hold the bracket firmly in position on the perforated board. The spring can

be readily returned to the inoperative position by pressing its ends together and sliding the spring out of the retaining position. Alternatively, the invention contemplates unlocking with a tool such as a screwdriver.

FIGURES 1 through 5 illustrate an assembly mounted on a perforated board **10**. The assembly includes a bracket **12** and an article supporting rod **14**. The bracket may comprise a stamped or molded member formed of metal or a suitable plastic material. A hook **16** and a stud **18** are formed on the back side of the bracket in a conventional fashion whereby the bracket can be attached to the perforated board by inserting the hook and stud in apertures **20** defined by the board.

FIGURE 17 illustrates a modification wherein the stud **18** defines a locking detent **19**. In operation, the stud is forced into an aperture defined by the panel **10** and due to the detent **19**, a locking action takes place. A slot **21** is defined by the stud **18** to provide resilient action whereby the stud can be readily forced into position.

The bracket defines a vertically disposed opening **22** terminating in a channel **24**. Opposed arms **26** are located at the outer end of the channel, and are connected to the main body portion at their lower ends. The arms are separated from the main body portion and from each other as shown at **28** and **30** permit movement of the arms relative to each other. The body portions include shoulders **27** which extend laterally and which provide stability when the bracket is in place on a panel.

The rod **14** consists of a bent-over end **32** and a shank portion **34**. The end **32** is adapted to be received within the opening **22**. The shank portion in turn fits within the channel **24**. The combination of the opening **22** and channel **24**, the latter being defined by the arms **26**, provides ideal support for the rod **14**. Specifically, the arms are provided with a snap action which serves to restrain the rod from moving upwards. The portions of the channel rearwardly of the arms and the opening **22** keep the rod rigid in the forward position. There is thus provided resistance to bending due to the weight of the objects held by the rod.

The snap-action in the arms **26** is provided by designing the arms so that the spacing between the arms is normally slightly less than the diameter of the shank portion **34**. Accordingly, the shank portion must be forced between the arms until it is positioned in a seat **36** defined at the bottom of the channel. As best shown in FIGURE 5, the seat is larger than the spacing between the arms whereby the shank will freely snap into this seat after it has been moved downwardly between the arms **26**.

With reference to FIGURE 3, it will be noted that the rod **14** can assume various configurations. The rod shown in dotted lines comprises a two-pronged member while the solid line configuration has a single prong. The dotted line showing at **12'** illustrates an embodiment wherein two supporting arrangements are provided in a single bracket. The shank **34'** may be formed along with the shank **34** as part of a single article supporting rod structure **14**. On the other hand, two independent rods **14** could be attached to a single bracket. It will be understood that a wide variety of different configurations may comprise the article supporting section of the rod.

FIGURES 6 through 8 illustrate a further modification of the invention wherein the bracket **40** comprises a pair of hooks **42** and a pair of studs **44**. Obviously, the hooks and studs are formed to fit a perforated board having apertures **46** which are spaced apart a specific distance. The remaining sections of the bracket are identical to those described above whereby rods of various configurations can be placed in and removed from the brackets.

FIGURES 9 through 16 illustrate a bracket construction **50** which is provided with a locking member. The bracket construction includes a hook **52** and stud **54** which are adapted to be inserted in apertures **56** of the perforated board **58**. In the illustrated embodiment, a rod **60** including a shank portion **62** is positioned in the bracket. The shank is received between arms **64** and the bent-over end of the rod is received in vertically disposed opening **66**. This design essentially corresponds to the arrangement described above. It will be understood, however, that a locking member of the type contemplated by this invention may be incorporated in brackets of an entirely different design.

The locking member illustrated consists of a U-shaped spring **68**. As shown in FIGURE 16, the spring includes arms **70** which define shoulders **72** intermediate their ends. The arms are inserted in passages **74** defined by the bracket. As best shown in FIGURES 9 and 12, the passages for receiving the locking member are inclined so that the upper end of the locking member is closer to the rear of the bracket than the lower end.

The member **68** is shown in the unlocked position in FIGURES 12 and 16. In this position, the bracket can be attached to and removed from the perforated board **58** in a conventional fashion. The member **68** does not in any way interfere with these operations.

When the spring locking member is moved to the locked position as shown in FIGURES 9, 10 and 13, the free ends will extend a substantial distance above the bracket. At this time, the shoulders **72** will snap into position over the top surface of the bracket. This will effectively prevent any return to the unlocked position and, accordingly, articles can be placed on and removed from the assembly without disturbing the position of the bracket. It will be noted that the ends **76** of the locking member press against the perforated board when the locking member is in the locked position. This is provided because of the inclined positioning of the locking member, and by providing resilient pressure in this fashion, the bracket will be firmly retained on the perforated board.

The ends **76** are bent-over to provide for holding of the locking member within the bracket when it is in the unlocked position. It will be appreciated that the illustrated configuration could be varied considerably while still providing a locking member which achieves the results of this invention. For example, only a single arm need extend outwardly into pressing engagement with the pegboard. Other configurations, such as a plate member could be provided, it being understood that the critical feature of the invention relates to the use of a locking member which extends outwardly of the bracket into a position adjacent the surface of the perforated board when in the locked position. The inclined passages or the use of a curved locking member will insure this result by causing the locking member to press against the perforated board.

As shown in FIGURE 10, however, the bracket can be quickly removed by simply pressing the free ends of the spring together, and then sliding the spring downwardly to return the spring to the inoperative position. The construction thus accomplishes a secure position of the bracket on the perforated board while requiring only a minimum of effort when removal of a bracket is desired. It will also be noted that a small opening **86** is provided when the locking member is in the locked position (FIGURE 10). This permits unlocking by means of a screwdriver or similar instrument.

It will be appreciated that the bracket can readily be designed for attachment to curved surfaces. Thus, convex or concave surface are often provided for displays, particularly in stores. By providing a radius in the bracket, for example, as shown in dotted lines at **35** in FIGURE 5, all of the advantages of the invention can be accomplished.

The bracket **50** can be readily manufactured as a single piece. A pair of openings **80** can be formed in the top surface of the bracket to form the upper end of the passages **74**. The major portion of the passages can be most easily provided by simply forming a relieved area in the back side of the bracket. Openings **82** can be formed at the bottom of the bracket to provide the opposite end of the passages.

It will be understood that various changes and modifi-

cations may be made in the construction described which provide the characteristics of this invention without departing from the spirit thereof particularly as defined in the following claims.

That which is claimed is:

1. In a structure for attachment to an apertured panel whereby articles can be supported in position adjacent the surface of the panel, said structure comprising a bracket including at least one integrally formed hook member adapted to be received in one of said apertures for holding the bracket on said panel, the improvement wherein said bracket is formed of a single molded piece comprising a first body portion having an elongated opening extending substantially parallel to the front face of said bracket, a second body portion extending outwardly from said front face, the upper end of said opening terminating in a channel formed in said second body portion and extending away from said front face, a vertically extending slot formed transversely of said second body portion adjacent the outer end thereof, a pair of opposed, upwardly extending arms formed at said outer end of said channel with said slot being located between said arms and the remaining portion of said second body portion, and an article supporting rod structure, said rod structure comprising a downwardly extending bent-over end adapted to be received in said opening, and a shank portion integrally formed with said end, said shank portion being received in said channel, the upper ends of said arms being normally spaced apart a distance less than the thickness of said rod whereby said arms spread apart as said rod is forced therebetween with the bottom of said channel providing a seat for said rod when the rod is received by said bracket.

2. A structure in accordance with claim 1 wherein the shank of said rod is freely received in said seat whereby pressure is relieved on said arms after said rod is snapped into position.

3. A structure in accordance with claim 1 wherein at least two of said elongated openings and associated channels are provided in side-by-side relationship in a single bracket whereby a plurality of article supporting rod structures can be attached to a single bracket.

4. A structure in accordance with claim 1 including a stud extending outwardly from the rear surface of said bracket adapted to be received in an aperture of a panel, and including a detent formed on said stud whereby the stud will snap into a locked position when the bracket is supported on the panel.

5. A structure in accordance with claim 1 wherein the rear surface of said bracket is curved whereby the bracket can be supported on a panel having a curved surface.

6. In a structure for attachment to an apertured panel whereby articles can be supported in position adjacent the surface of said panel, said structure comprising a bracket including at least one integrally formed hook member adapted to be received in one of said apertures for holding the bracket on said panel, the improvement comprising means for locking said bracket in position on said panel, said locking means being mounted on said bracket and being positioned for reciporcal movement relative to said bracket, said locking means having an unlocked position which permits movements of said bracket for attaching the bracket to the panel and for removing the bracket from the panel, and a second position which locks said bracket into engagement with said panel, and wherein said spring defines a U-shaped configuration, a pair of passages defined by the body portion of said bracket, the opposed legs of said U-shaped spring being received in said passages and being reciprocally movable therein, one end of said spring extending a substantial distance outwardly of said bracket when the spring is in said second position, said one end bearing against said panel to accomplish the locking action of the spring.

7. A structure in accordance with claim 6 wherein said locking means comprises a spring, and wherein said spring is resiliently maintained in said unlocked position when the spring is moved to said unlocked position.

8. A structure in accordance with claim 6 including shoulders formed intermediate the length of said legs, and wherein said shoulders are positioned adjacent the ends of said passages when said spring is in said unlocked position, said shoulders serving to maintain said spring in said unlocked position.

9. A structure in accordance with claim 6 wherein said passages are inclined relative to said body portion of the bracket whereby said one end of the spring is directed into engagement with said panel when said spring is moved to said second position.

10. A structure in accordance with claim 6 wherein said passages are partially formed by a relieved area defined at the back of the body portion of said bracket.

11. In a structure for attachment to an apertured panel whereby articles can be supported in position adjacent the surface of said panel, said structure comprising a bracket including at least one integrally formed hook member adapted to be received in one of said apertures for holding the bracket on said panel, the improvement comprising means for locking said bracket in position on said panel, said locking means being mounted on said bracket and being positioned for reciprocal movement relative to said bracket, said locking means having an unlocked position which permits movements of said bracket for attaching the bracket to the panel and for removing the bracket from the panel, and a second position which locks said bracket into engagement with said panel, and wherein said bracket comprises a main body portion defining an elongated opening extending substantially parallel to the front face of said bracket, the upper end of said opening terminating in a channel which extends away from said front face, and an article supporting rod structure, said rod structure comprising a downwardly extending bent-over end adapted to be received in said opening, and a shank portion integrally formed with said end, said shank being received in said channel.

12. A structure in accordance with claim 1 including a longitudinally extending slot formed between said arms and extending through said outer end.

13. A structure in accordance with claim 11 wherein said channel is defined at least in part by a pair of opposed, upwardly extending arms, the upper ends of said arms being normally spaced apart a distance less than the thickness of said rod, and wherein said arms spread apart as said rod is forced therebetween, and including a seat for said rod at the bottom of said channel.

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ROY D. FRAZIER, *Primary Examiner.*

J. F. FOSS, *Assistant Examiner.*

U.S. Cl. X.R.

211—105.1; 248—223