

Aug. 2, 1938.

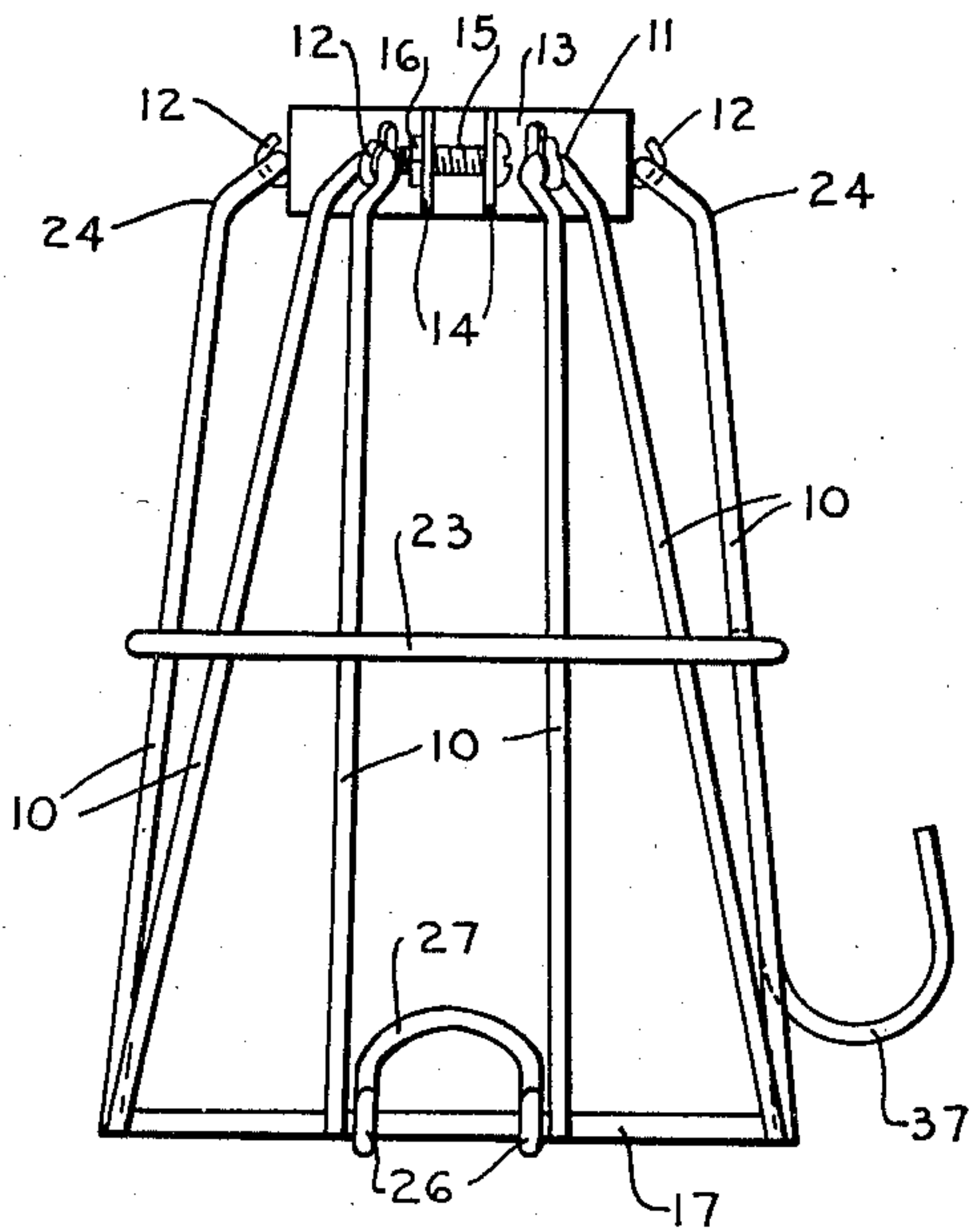
J. P. KNOWLES

2,125,450

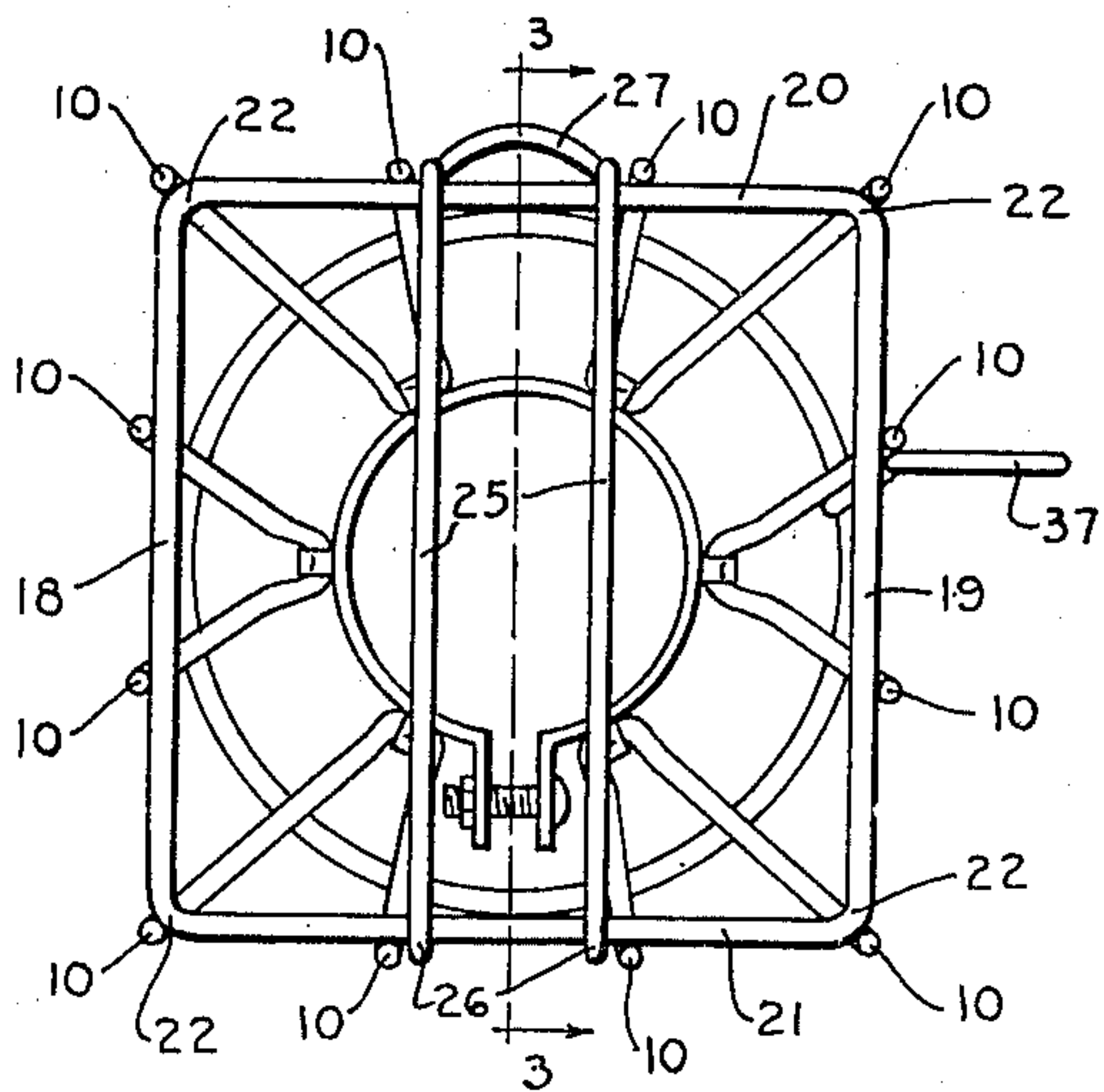
LAMP GUARD

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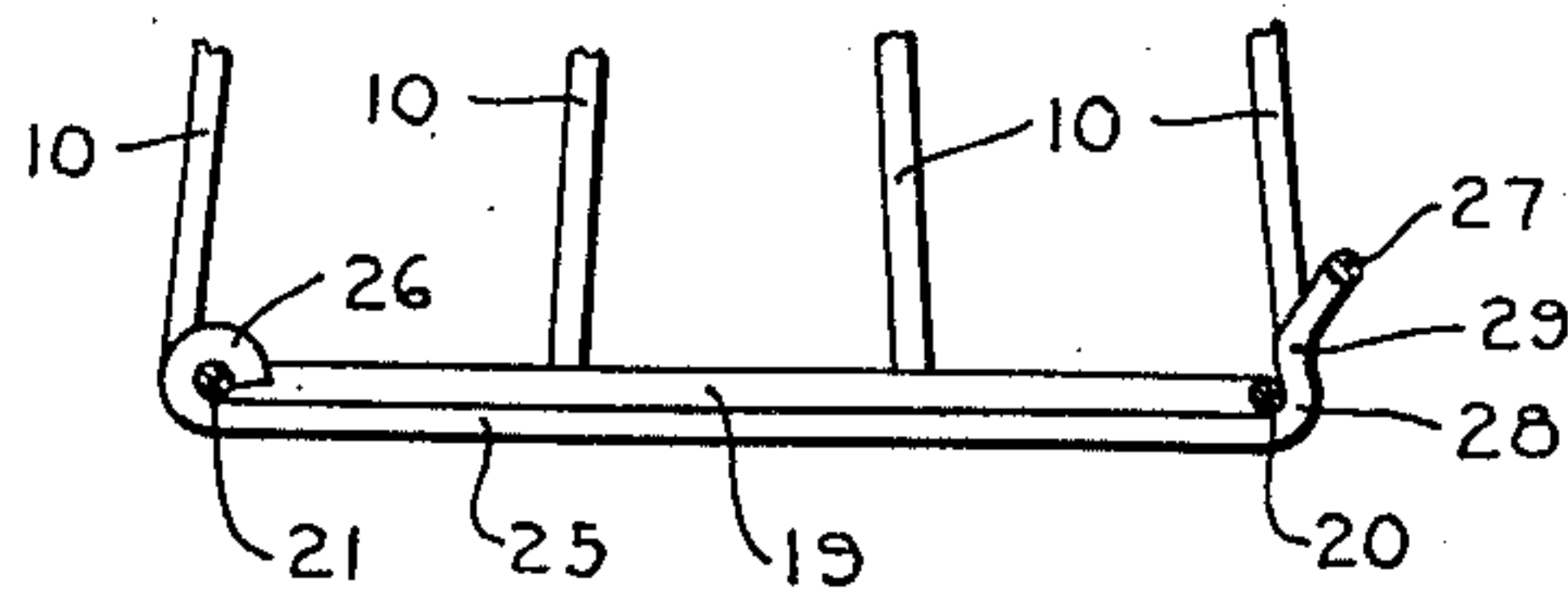
*Fig. 1*



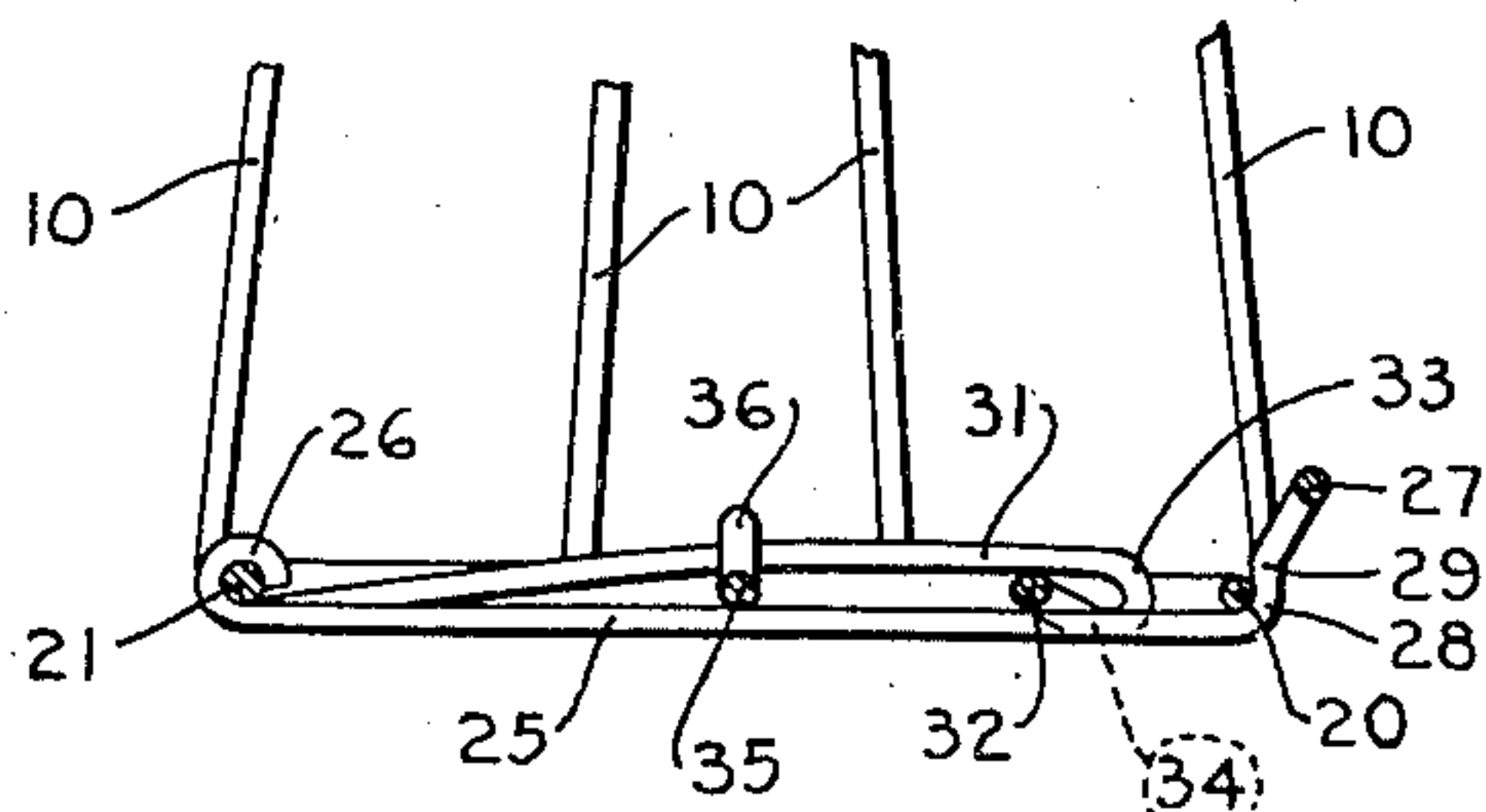
*Fig. 2*



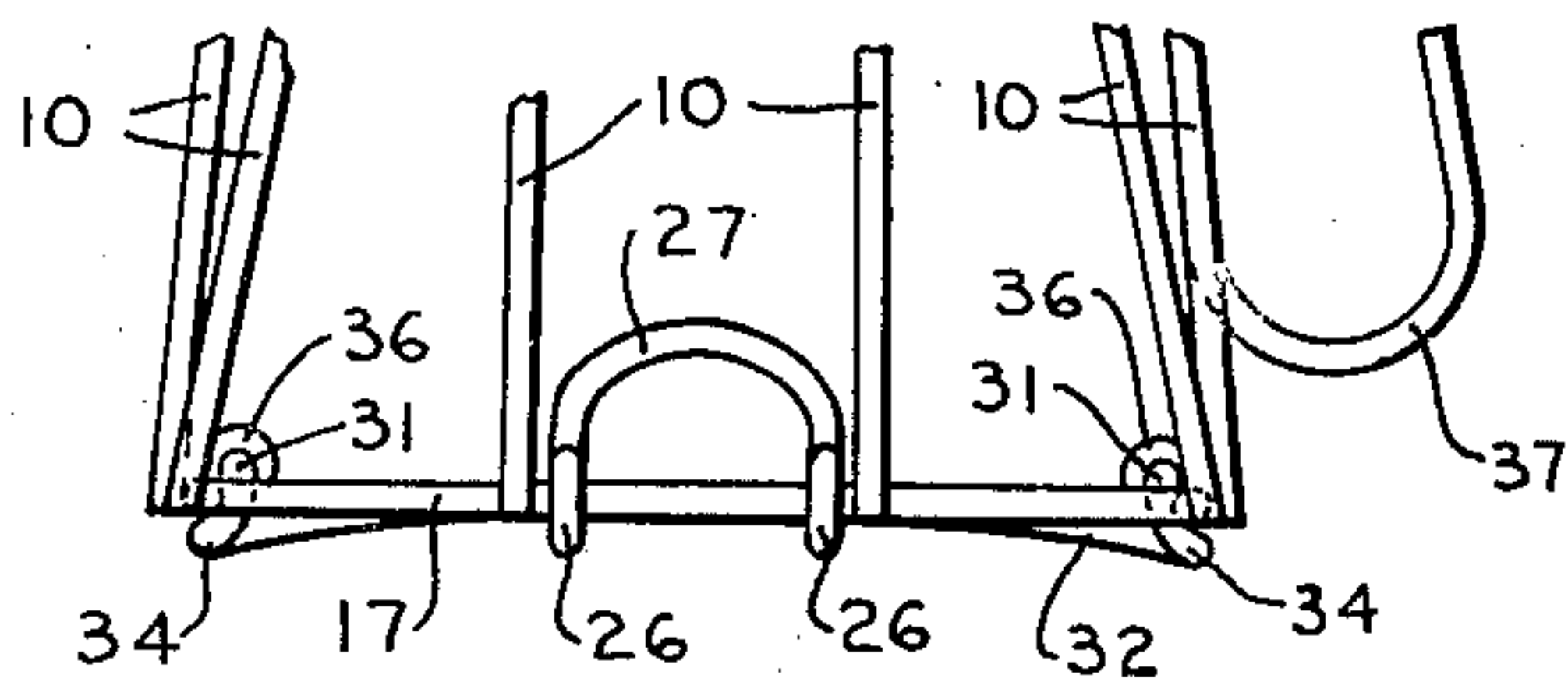
*Fig. 3*



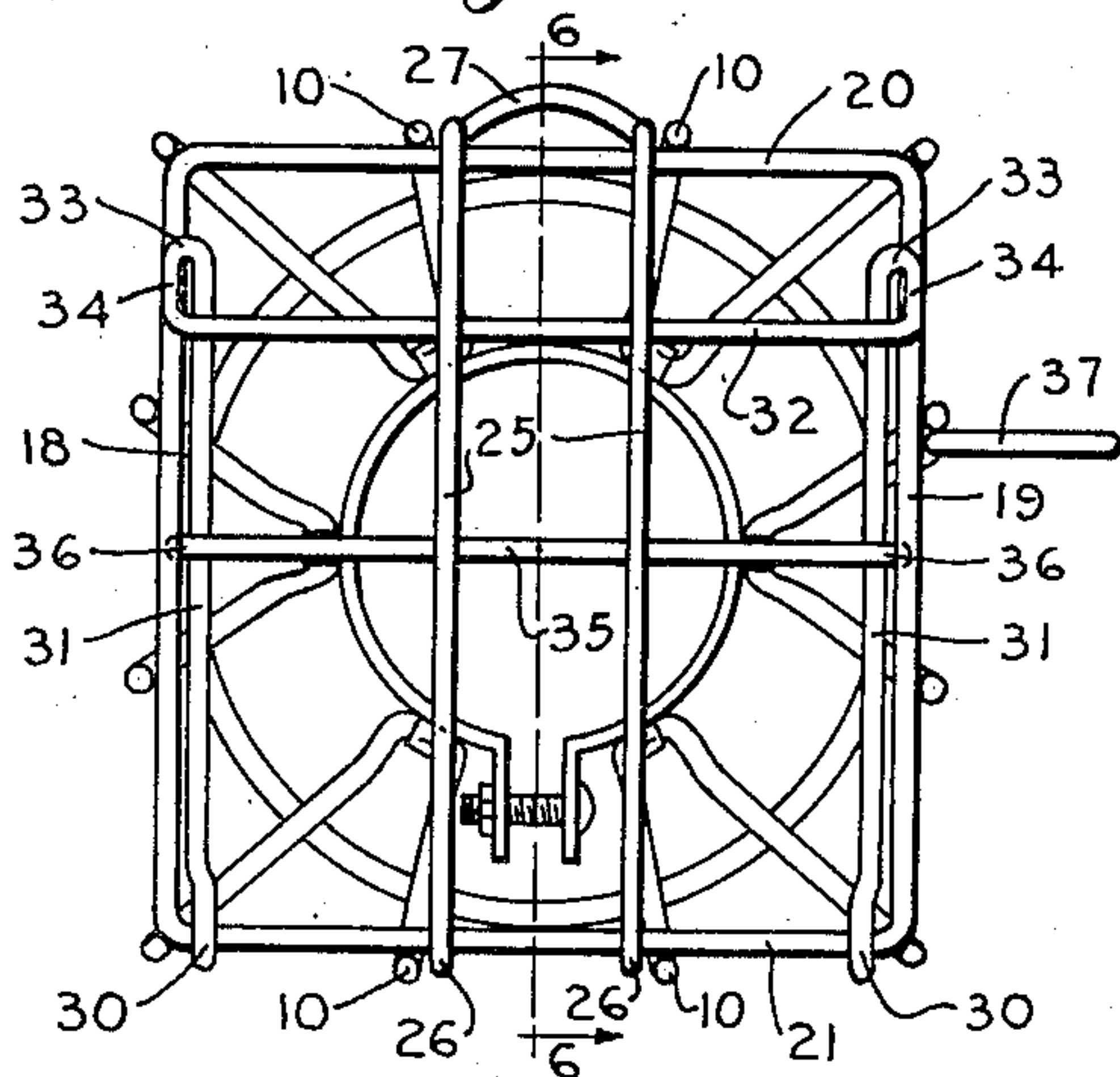
*Fig. 6*



*Fig. 4*



*Fig. 5*



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## UNITED STATES PATENT OFFICE

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## LAMP GUARD

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3 Claims. (Cl. 240—102)

My invention relates to lamp guards, and more particularly to a lamp guard such as is provided for use in protecting electric lamp bulbs in work-shops, garages and similar places, the guard being particularly adapted for use with the apparatus commonly known as a "trouble lamp". This application is a continuation in part of my application Serial No. 36,379, filed August 15, 1935.

10 It is an important purpose of my invention to provide a lamp guard of the above mentioned character that is so constructed that it will not roll when placed on any surface and which is furthermore so constructed that a very simple and effective means is provided for closing the open end thereof through which the lamp bulb is inserted so as to provide a guard, or protective means, preventing damage to the lamp by any means entering through said open end.

20 More particularly my invention comprises a lamp guard that is provided with a cage-like body portion that is provided with a rectangular opening in the end thereof, through which the lamp is inserted, said opening being provided by means of a rectangular frame forming one end of said guard. Said rectangular frame serves the double purpose of preventing rolling of the guard on any surface on which it may be placed and providing a very desirable mounting for a movable guard member that closes the opening through which the lamp is inserted.

In lamp guards that are provided with circular end forming portions, it is a well known fact that any closure that is provided for said circular end, which is mounted for swinging, or hinging, movement on the body of the lamp guard, does not hinge accurately, that is, there is a tendency for the swingingly mounted member to move at an angle to the direction of movement desired. Inasmuch as a hook, or other similar fastening means, must be provided for such swinging guard means, or closure, this hook, or similar means, frequently does not engage with the most remote point of the circle from that at which the hinging means is provided, but to one side thereof, thus not holding the closure member tightly in position and causing the same to become disengaged. If a closure member is provided that has a pair of hinges mounted on a circular end member on the body portion of the guard, there is a tendency for the same to bind. I have found that all these difficulties are avoided by providing the rectangular end frame on my improved guard and hinging the guard means on one of a pair of opposed parallel sides of said rectangular

frame and providing said guard means with a hook that engages the other of said pair of parallel opposed side members of the rectangular frame. By doing this the guard member will swing truly on its hinges, particularly where these are spaced a considerable distance apart on the straight side of the rectangular frame, and furthermore, a very effective and tight securing means is provided for the guard to hold it in closing position due to the fact that a hook-like portion is provided thereon that is relatively wide and has bearing on another straight side member of the frame at spaced points, said straight side member being capable of being sprung considerably out of position when the hook is forced into engagement therewith, thus causing a secure inter-engagement between the hook and said side member.

Preferably, a single guard means is provided extending in the manner referred to above, but if desired, an additional guard means can be provided, which engages hingedly with the same member of the rectangular frame with which the above mentioned guard means engages, but which instead of engaging the opposite side members adjacent the side member to which the guard means is hinged, is hinged to the side members extending substantially perpendicularly to the side member to which the guard means is hinged. In such case the guard means previously mentioned acts as positive means for holding said last mentioned guard means in closed position, as it overlies the same.

It is a further purpose of my invention to provide a lamp guard of the above mentioned character, which is provided with a clamping member in the form of a split ring at one end thereof and a rectangular frame of fixed size at the other end thereof, said lamp guard changing from a rectangular contour to a circular contour between said ends and being provided with a connecting ring, preferably, substantially circular, intermediate the ends of the longitudinally extending members of the guard, the longitudinally extending members being secured to said ring except for one thereof adjacent the split in the clamping ring to permit the clamping ring to function easily without any interference therewith by said bracing ring of fixed diameter mounted intermediate the ends of the longitudinally extending members.

Other objects and advantages of my invention will appear as the description of the drawing proceeds. I desire to have it understood, however, that I do not intend to limit myself to the



particular details shown or described, except as defined in the claims.

In the drawing:

Fig. 1 is a view in side elevation of my improved lamp guard, showing the preferred form thereof.

Fig. 2 is an end elevation thereof as viewed from the bottom of Fig. 1.

Fig. 3 is a fragmentary section taken substantially on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary side elevational view of a modification.

Fig. 5 is an end view of said modification, as viewed from the lower end of Fig. 4, and

Fig. 6 is a fragmentary section taken substantially on the line 6—6 of Fig. 5.

Referring in detail to the drawing, my improved lamp guard comprises a cage-like body portion made up of the longitudinally extending members 10, which are made of lengths of wire that are bent back on themselves at 11 and engage with struck out hooks 12 provided on a split metal ring 13 having outwardly extending ears 14 thereon, which are connected by means of a bolt 15 extending through said ears, which bolt is provided with a nut 16. The split ring made of a flat band of metal is permanently connected with the wires at the bent portions 11 by means of the hooks 12, which are bent back toward the body portion of the ring so as to prevent any accidental disengagement of said ring from the longitudinally extending members. Said longitudinally extending members 10 diverge from the bent portions 11 thereof toward the other end of the lamp guard where the same are fixedly secured to a rectangular end member 17. The member 17 is provided with the four straight sides 18, 19, 20 and 21, the sides 18 and 19 and the sides 20 and 21 being substantially parallel to each other and being joined by means of curved portions 22. The longitudinally extending members 10 are secured at their ends to this rectangular frame 17 by means of welding, brazing or soldering, or are otherwise fixedly secured thereto. One member 10 is, preferably, secured at each corner of the frame to the curved portion 22 and a pair of members 10 is furthermore connected with each of the sides of the rectangular end frame 17. Said rectangular frame is, preferably, made square, as shown in the drawing.

A wire ring 23 is provided, which is welded, brazed, or secured by solder, or any other means, to the outer sides of the members 10 intermediate the ends thereof, said ring 23 being circular, or substantially circular, and being larger than the split ring 13, but smaller than the rectangular endless frame 17. It will thus be seen that the members 10 diverge outwardly from their points of securement to the split ring 13 to their points of securement with the square frame 17. Also it will be noted that the cage-like body portion thus formed is circular in contour from the ring 23 to the split ring 13, necking in abruptly at the bent portions 24 in the members 10 adjacent the points of securement thereof to said split ring 13, and that from the ring-like member 23 to the frame 17 said cage-like body portion gradually changes from a circular contour to a rectangular contour. It will thus be evident that the cage-like body portion is so made that the split ring 13 can be readily secured to a lamp socket, or similar member, with which the guard may be associated, and is furthermore prevented from excessive rolling when placed on any surface, such as an inclined surface, as the straight sides of the frame 17 will reduce, or entirely prevent such rolling action. In

order to permit the split ring to function without difficulty in such clamping action, it may be desirable to leave one of the members 10 adjacent the split in the ring free of the ring 23 so that the ring 23 will not interfere with the expansibility of the member 13.

Said cage-like body portion of the guard is provided with means for closing the end thereof at the rectangular frame 17 so as to prevent any objects from entering said lamp guard that might damage the lamp bulb within the guard. Ordinarily all that is necessary to prevent this is a guard member, or closure member, that extends across the mid-portion of the rectangular opening formed in the open end of the lamp guard and one of the important features of my invention is the provision of simple and effective means for closing this opening, or guarding this opening from the entrance of objects, that might damage the lamp bulb, into the guard, which means is very simple in construction and yet very positive in operation, and which, in combination with the rectangular frame, provides a guard means which will not accidentally be released and which will, although extremely simple in construction, operate reliably and accurately.

Said means comprises a substantially U-shaped guard member, which has a pair of parallel, or substantially parallel, leg portions 25, which terminate in loops, or eyes, 26 that extend around the one side member 21 of the rectangular frame 17 so as to form a pivotal, or a hinge connection, of the U-shaped guard means with the member 21. Said loops 26 are, preferably, located closely adjacent and between the members 10 that are connected with the member 21 and may engage slightly therewith, thus providing an exact location for the hinge loops 26 on the member 21. This is partly due to the fact that the U-shaped member is made of wire, which has a certain amount of springiness, which is present therein partially due to the curved connecting portion 27 joining the legs 25 to complete the U-shaped member. The curved portion 27 joins the straight legs 25 by means of a hook-like portion, curved first in one direction, as indicated at 28, and then in the opposite direction, as indicated at 29, so as to form portions on opposite ends of the connecting portions 27 at the junction of the connecting portion 27 with the legs 25 that hook around the straight side member 20 of the rectangular frame 17, thus providing a wide hook at the opposite end of the guard means from that end that is hinged to the member 21, which engages the member 20 at widely spaced points closely adjacent and between the members 10 that are secured to the member 20. The hook portion of the guard means is thus definitely located relative to the member 20, and furthermore will have a very firm engagement with the member 20 due to the fact that it engages the same at spaced points. Furthermore, due to the fact that said U-shaped member is made of wire, which has a certain amount of resiliency, the hook portions formed by the curved portions 28 and 29 will spring around the rounded wire side member 20 of the frame and interengage therewith in the manner shown in Fig. 3, this being aided by the fact that the member 20 is straight and will tend to bend slightly under the force exerted by the cam-like character of the portion 29 so as to permit the springing of the portion 29 back of the member 20, it being obvious that a circular ring-like member, such as the member 23, would not have this springi-



ness that a rectangular or other polygonal frame has, which is provided with straight sides. Also the fact that the member 21 is straight aids in this action because there will be a slight inward springing of the member 21 toward the member 20 at the time that such forcing of the hook-like formation on the U-shaped member into engagement with the member 20 takes place. This makes it possible to make a much greater offset in the hook portions than would otherwise be possible, and yet obtain engagement of the hook portions with the frame, a very positive and very firm engagement of the hook portions being thus obtained. When a considerable pull is exerted on the U-shaped guard means, disengagement of the guard means can, however, be readily obtained from the member 20 because the curved portion 29 acts as a cam also when swung away from the member 20, as well as when swung toward the member 20.

In case it should be desired to provide a closure for the opening in the end of the guard at which the frame 17 is provided, that will prevent the entrance of even smaller objects into the guard, an additional closure means can be provided, which is shown in Figs. 4, 5 and 6, and which is provided with the hinge loops 30 engaging pivotally with the side member 21 and provided with side bars 31, which lie closely adjacent the side members 18 and 19 when in closing position, and which are connected by means of a transverse member 32 by means of elongated loops 33, which have portions 34 that engage the outer sides of the side members 18 and 19. An additional cross bar 35 is provided, which is secured by welding, brazing, soldering, or in any other manner, to the arms 31 and is provided with the loop portions 36 at the ends thereof extending around the members 31 and projecting laterally to such an extent that the same will engage with the members 18 and 19 as the closure member is swung to closing position, camming these members 18 and 19 outwardly and causing the loop portions 36 to spring back of the members 18 and 19, thus engaging said members 18 and 19 on the opposite sides thereof from the portions 34 of the loops 33. The closure member, or U-shaped guard means, is, however, utilized in this case also and holds the secondary closure means comprising the members 31, 32 and 35, in closing position, operating in the manner previously described, the legs 25 thereof engaging the cross bars 32 and 35 to hold said secondary closure member in closing position and in engagement with the sides 18 and 19 of the rectangular frame in the manner previously described.

If desired, a hook 37 may be provided in either form of the invention, for hanging up the lamp guard, or the lamp and other apparatus with which the guard is associated. It will thus be seen that means is provided on the secondary closure member for holding the same in engage-

ment with the rectangular frame, and also preventing said secondary closure means from being forced inside the cage-like body portion, due to the provision of the portions 34 of the loops 33. Also it will be noted that it is absolutely impossible for the guard means to become accidentally disengaged and moved to open position in either form of the invention because of the provision of the U-shaped member having the leg portions 25 and the hook-like connecting portion 27, which is positively inter-engaged with the side member 20 in the manner previously described.

I claim:

1. A guard for portable electric lamps comprising a wire housing, means for securing the housing in position on an electric lamp socket, a closure embodying spaced transverse bars, the ends of the bars cooperating with the housing in securing the closure in its closed position, a closure fastener embodying spaced arms pivotally connected to the housing, said arms overlying the bars and contacting with the bars, said arms extending at right angles to the bars, the outer end of the fastener engaging the housing, holding the closure in its closed position.

2. A guard for portable electric lamps, comprising a wire housing, means for securing the housing in position on an electric lamp socket, a rectangular member at the outer end of the housing, a rectangular closure adapted to close the rectangular member, a cross member having its ends secured to the closure, portions of the cross member extending beyond the sides of the closure and adapted to engage the rectangular member holding the closure in its closed position, and a securing member connected to the rectangular member and overlying the closure, securing the closure in its closed position.

3. In a lamp guard, a cage-like wire body portion comprising a plurality of longitudinally extending members connected at one end with a clamping ring and at the other end thereof with a rectangular frame, whereby the opposite sides of said frame are adapted to be sprung toward each other between their ends out of straight line position, and having an intermediate substantially circular connecting ring, said rectangular frame providing a rectangular open end on said body portion, and a guard member swingable into and out of position across said opening, said guard member comprising a pair of spaced arms hinged at one end at spaced points on one side of said rectangular frame and having a wide hook portion at its other end comprising a gradually curved inclined connecting portion adapted to engage the opposite side of said frame to cam the same inwardly and oppositely curved spaced holding portions at opposite ends of said connecting portion interlocking with said side of said frame at spaced points to hold said guard means in opening-spanning position.

JAMES P. KNOWLES.