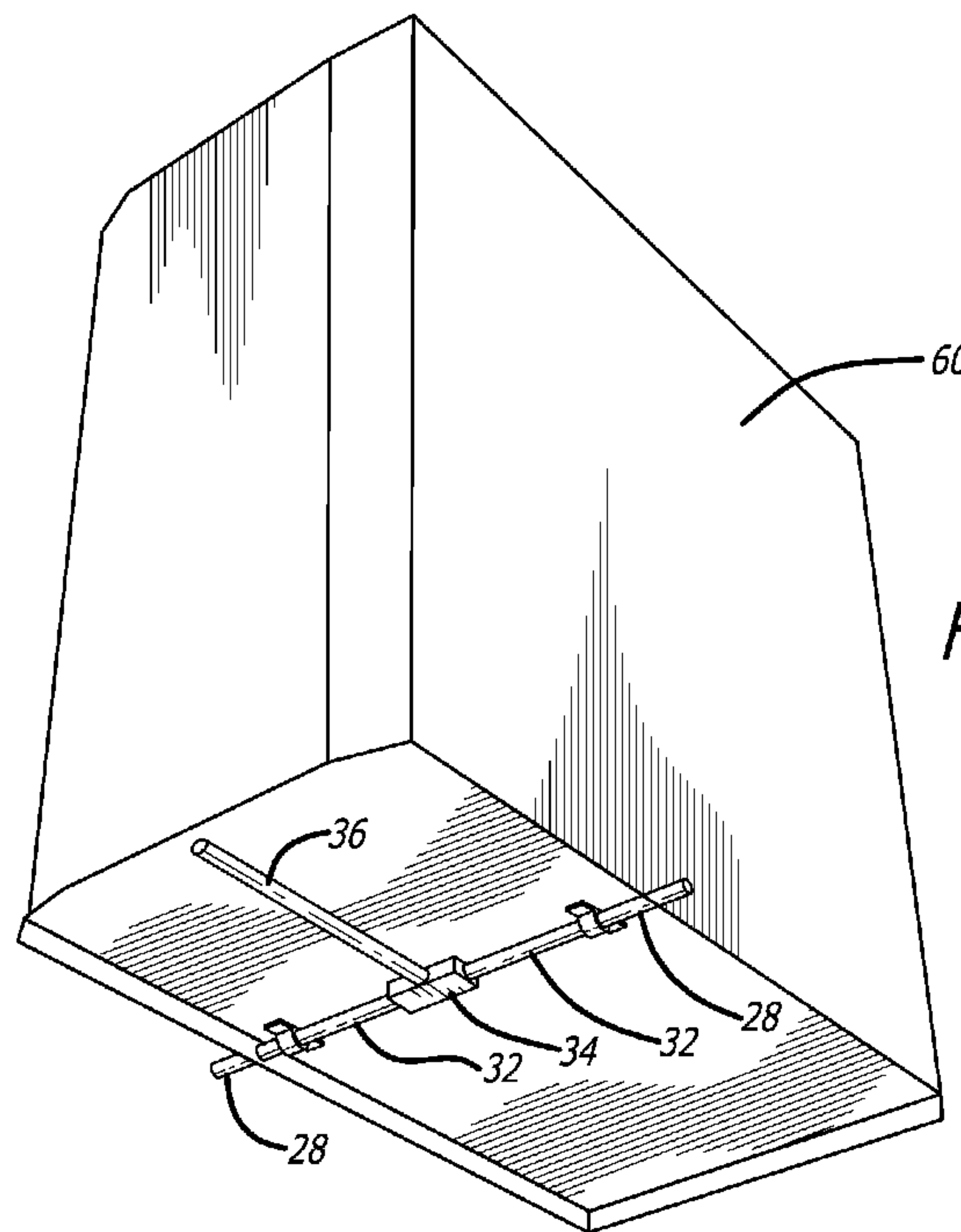




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(54) **Titre : SYSTEME DE MONTAGE D'INSERT DE CUISINETTE**  
 (54) **Title: GALLEY INSERT MOUNTING SYSTEM**



**FIG. 11**

(57) **Abrégé/Abstract:**

A mounting system for an aircraft galley that quickly and easily secures an insert while preserving an air gap between the insert and a work deck upper surface for venting purposes. The platform includes a linkage that can transform from a "Y" shaped configuration to a "T" shaped configuration. When the linkage is in the "Y" shaped configuration, the outer extensions or locking pins do not extend to the side walls of the platform. However, once the insert is properly seated on the platform, the linkage can be transformed from the "Y" configuration to a "T" configuration such that the locking pins extend through the side walls of the platform and through holes in the side walls of the insert. In this manner, the insert can be secured to the platform without screws or other permanent fixtures.

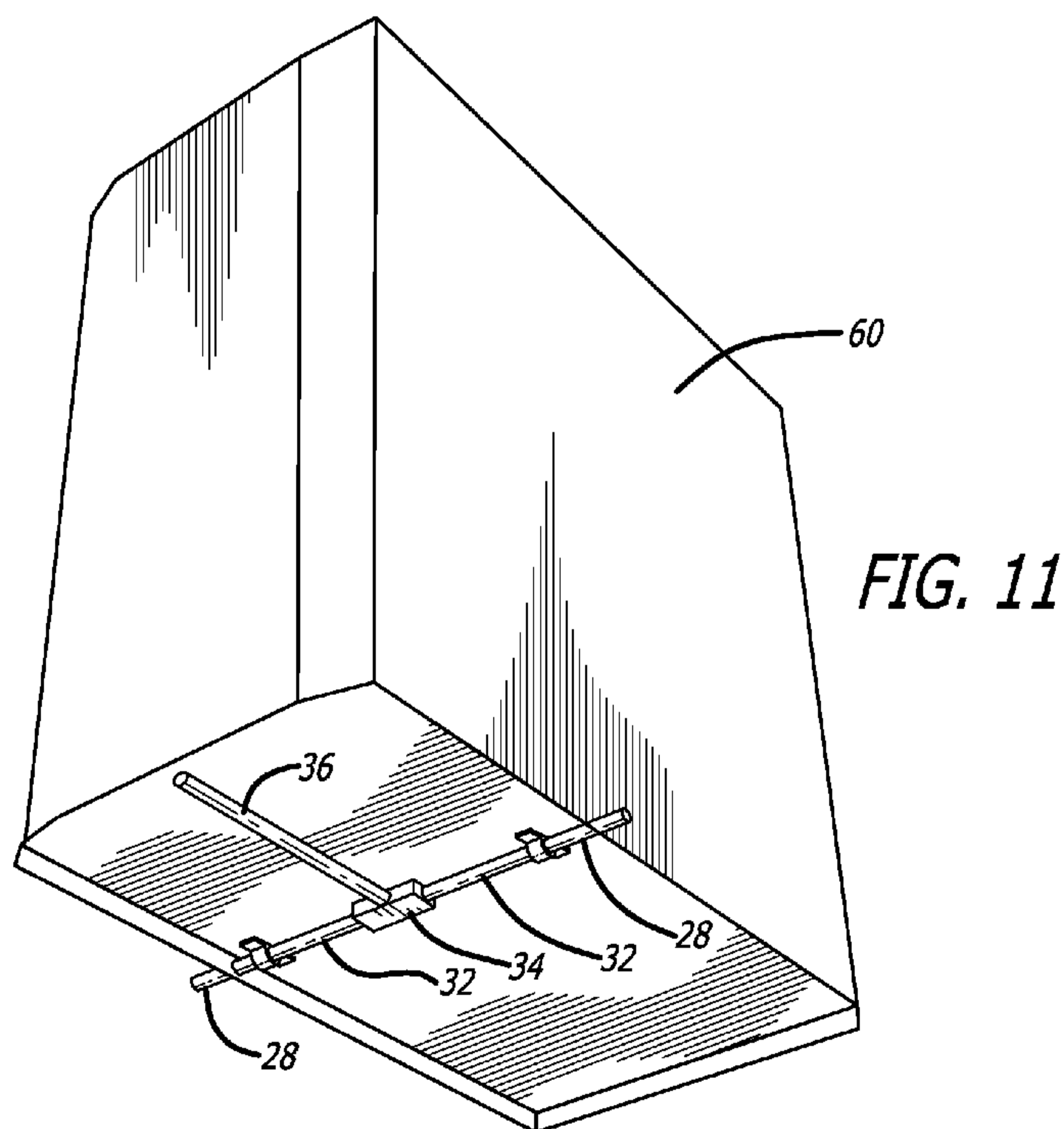
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[Continued on next page]

(54) **Title:** GALLEY INSERT MOUNTING SYSTEM

(57) **Abstract:** A mounting system for an aircraft galley that quickly and easily secures an insert while preserving an air gap between the insert and a work deck upper surface for venting purposes. The platform includes a linkage that can transform from a "Y" shaped configuration to a "T" shaped configuration. When the linkage is in the "Y" shaped configuration, the outer extensions or locking pins do not extend to the side walls of the platform. However, once the insert is properly seated on the platform, the linkage can be transformed from the "Y" configuration to a "T" configuration such that the locking pins extend through the side walls of the platform and through holes in the side walls of the insert. In this manner, the insert can be secured to the platform without screws or other permanent fixtures.

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## GALLEY INSERT MOUNTING SYSTEM

## CROSS-REFERENCES TO RELATED APPLICATIONS

This application claims priority from U.S. Application No. 61/616,969, filed March 28, 2012, and from U.S. application No. 13/849,808, filed March 25, 2013, the contents of which are  
5 fully incorporated herein by reference in their entireties.

## BACKGROUND

An aircraft galley refers to the area of the vehicle that is used by the flight attendants to service the passengers, particularly the passengers' food and beverage needs. Due to constraints with space and weight, these areas are very ordered and efficient in all aspects of their  
10 construction and arrangement. There are a number of appliances in the galley, referred to as "inserts" that can be arranged in various ways. Inserts can be appliances such as a coffee brewers, ovens, a trash compactors, refrigerators, chillers, espresso machines, or any other electrical appliance that can be found in the galley area. These devices tend to be heavy and must be securely mounted in the galley so that they are not displaced during turbulence, but they  
15 must also be versatile enough to be moved if needed depending upon the spatial needs of the aircraft. Also, if the inserts need to be serviced it is desirable that they be easily removed and replaced. Thus, the mounting system of the inserts must be both secure and reliable, but versatile and meet the other needs of the galley.

To mount the inserts in the galley, they are typically affixed with mounting screws that  
20 attach the insert to the work deck of the galley. However, to mount an insert to the working deck of an aircraft galley requires that the insert be flush with the deck, which tends to cause venting issues with devices such as refrigerators or ovens that use fans to cool the motor of the insert. Therefore, there is a need for a mounting system for a galley insert that provides reliable and secure insert placement while allowing for venting and making repair and replacement a simple  
25 and easy operation.

## SUMMARY OF THE INVENTION

The present invention is a mounting system for an aircraft insert that quickly and easily secures an insert while preserving an air gap between the insert and the work deck upper surface

that allows venting, without using mounting screws. A platform is formed on the work deck that includes side walls that support the insert such that the insert sits on the side walls to create a gap between the bottom of the insert and the floor of the platform. The platform is also fitted with a linkage that can transform from a "Y" shaped configuration to a "T" shaped configuration.

5 When the linkage is in the "Y" shaped configuration, the outer wings, or locking pins, do not extend to the side walls of the platform. In this position, the insert can be located on the platform but is not secured to the platform. However, once the insert is properly seated on the platform, the linkage can be transformed from the "Y" configuration to the "T" configuration such that the locking pins extend through the side walls of the platform and through holes in the side walls of  
10 the insert. In this manner, the insert can be secured to the platform without screws or other permanent fixtures. When it is necessary for the insert to be removed, as for cleaning, maintenance, or the like, the linkage is returned to the "Y" configuration, withdrawing the locking pins and releasing the insert.

Other features and advantages of the present invention will become more apparent from  
15 the following detailed description of the preferred embodiments in conjunction with the accompanying drawings, which illustrate by way of example the operation of the invention.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevated, perspective view of the galley insert mounting system of the present invention where the linkage is in the "T" configuration;

20 FIG. 2 is an elevated, perspective view of the galley insert mounting system of the present invention where the linkage is in the "Y" configuration;

FIG. 3 is a top view of the galley insert mounting system of the present invention where the linkage is in the "T" configuration;

25 FIG. 4 is a top view of the galley insert mounting system of the present invention where the linkage is in the "Y" configuration;

FIG. 5 is an elevated, perspective view of an insert face plate cooperating with the galley insert mounting system;

FIG. 6 is an enlarged, view of the linkage and bracket;

FIG. 7 is an elevated perspective view of a generic insert such as a chiller;

FIG. 8 is an enlarged, perspective view of the linkage cooperating to secure to the insert;

FIG. 9 is the insert shown with the linkage protruding through its side walls to secure the  
5 insert;

FIG. 10 is a perspective view of the insert with the linkage protruding through to secure  
the insert; and

FIG. 11 is a view from below showing the insert locked to the platform.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

10 Figures 1 and 2 illustrate a linkage assembly that can be used to secure a galley insert,  
such as a refrigerator, to a galley work deck without using mounting screws to attach the insert to  
the deck. A platform 20 is formed with a floor 22 and short lateral side walls 24, where the side  
walls 24 are formed with a through hole 26 that is aligned along a common centerline. Each hole  
26 is sized to receive a locking pin 28 secured to the platform 20 by a pair of mounting brackets  
15 30, such as O-ring brackets. The locking pins 28 are each hinged or linked to a push rod 32,  
which are in turn mounted to a block 34. The block 34 is threadedly engaged with a drive rod  
36, a distal end 38 of which is secured to an "L" shaped bracket 40 mounted on the floor 22 of  
the platform 20. The "L" shaped bracket 40 allows rotation of the drive rod 36 while  
maintaining the end 42 of the drive rod 36 in a fixed position.

20 When the platform 20 is in the disengaged position of Figure 2, the locking pins 28 are  
withdrawn from the side walls 24 and the block 34 is displaced from the "L" shaped bracket 40.  
In this position, an insert such as a galley refrigerator can be set upon the platform 20 for  
securing. The drive rod 36 plus the push rods 32 in this position form a "Y" configuration, such  
as a yoke. To engage the platform's locking function, the drive rod 36 is rotated in a first  
25 direction, which causes the block 34 to move along the drive rod 36 towards the "L" shaped  
bracket 40. As the block 34 is pushed along the drive rod 36 by the threaded engagement  
between the two elements, the ends of the push rods 32 connected to the locking pins 28 begin to

move apart. As the block 34 further moves along the drive rod 36, the push rods 32 eventually become colinear and the locking pins are pushed through the holes 26 of the side walls 24, as shown in Figure 1. In this configuration, the push rods 32 and the drive rod 36 form a "T" configuration and the locking pins 28 are fully extended through the side walls 24. To release the locking pins 28, the drive rod 36 is rotated in the opposite direction, causing the block 34 to move away from the "L" shaped bracket. As the block 34 recedes, the push rods 32 return to their position in Figure 2, pulling the push rods 28 back inside the side walls 24. This releases any insert that was locked by the linkage. Figures 3 and 4 illustrate the linkage in the extended (Figure 3) and retracted (Figure 4) positions.

10 Figure 5 illustrates the platform 20 mounted to a face plate 50 for an insert such as a refrigerator to be mounted to the work deck of a galley. The face plate 50 includes a window 54 (See Figure 6) that receives the drive rod 36 so that it may be accessed outside of the insert 60. The sides of the insert 60 include a hole 62 that receives the locking pin 28 when it is in the extended position of Figures 1 and 3. That is, the locking pins extend through the side walls 24 of the platform 20 (Figure 8) and through the holes 62 in the insert 60, securing the insert 60 to the platform 20. The locking pins 28 can be withdrawn easily by rotating the drive rod 36 which extends outside of the insert 60, thereby providing a reliable and easy manner in which to secure the insert. Figures 9 and 10 illustrate the insert 60 locked using the protruding locking pins 28. Figure 11 shows how the side walls 24 of the insert can create a gap below the insert 60 so that venting can take place. This is important for refrigerators, ovens, chillers, and other electrical equipment that can overheat if confined in tight quarters without sufficient ventilation. Thus, the present invention not only secures the insert 60, but allows ventilation beneath the insert.

25 When an insert is mounted in a galley using the present invention, the side projections (locking pins) align with holes in an adjacent bracket, wall, partition, or other fixed portion of the galley structure. In this way, the side projections restrain the insert within the galley structure without any direct attachment to the work deck.

In a preferred embodiment, the insert 60 incorporates both the platform 20 and the face plate 50 as an integral component, such that each insert includes its own integral locking mechanism within its base. The drive rod can be rotated from outside the insert, which will

cause the locking pins to extend through the side walls of the platform and through holes in the insert. This allows a quick method in which an insert can be positioned and locked in place without the need for mounting screws that penetrate the floor of the deck. Instead, the mounting system shown above releasably mounts the insert using only the drive rod to extend the locking pins. The drive rod can be rotated using a screwdriver or other tool, so the insert can be quickly positioned and locked into place on the platform.

When an insert is mounted in a galley, the locking pins of the linkage align with holes in the platform's side walls and the insert's holes, or an adjacent bracket, wall, partition or other fixed portion of the galley structure. In this way, the locking pins restrain the insert within the galley structure without any direct attachment to the work deck. This is important because recent galley designs can have a work deck that slides forward from underneath the inserts to provide an increased work surface area for the flight attendants. Further, newer galley designs route cooling air for the galley carts through the work deck so the present invention is advantageous because it eliminates the need for penetrations through the work deck for mounting screws that could allow for cooling air leaks.

Although various embodiments have been described, it is to be understood that various modifications and substitutions would be appreciated by one of ordinary skill in the art, and the present invention is intended to include all such modifications and substitutions. Accordingly, nothing in this specification or the drawings should be construed as limiting or exclusive unless expressly indicated. Rather, the scope of the invention is measured by appended claims, using the plain and ordinary meaning of the words in view of, but not exclusive to, the description herein.

## I Claim:

1. A mounting system for releasably installing an aircraft galley insert onto a work deck, comprising:

5 a platform;  
a bracket mounted on the platform;  
a threaded rod secured by the bracket;  
a block threadedly engaged with the threaded rod for movement along the threaded rod;

10 first and second push rods attached to the block;  
first and second locking pins, each locking pin coupled to a push rod, for extension of the locking pins in a direction transverse to a direction of movement of the block;

15 wherein the locking pins can engage the insert in a first extended position based on a position of said block on said threaded rod, and wherein the locking pins are disengaged with the insert in a first retracted position based on a second position of said block on said threaded rod.

2. The mounting system for releasably installing an aircraft galley insert of Claim 1, 20 wherein the platform has side walls including an aperture for receiving a locking pin.

3. The mounting system for releasably installing an aircraft galley insert of Claim 1, wherein the locking pins are secured for sliding movement by O-ring brackets.

25 4. The mounting system for releasably installing an aircraft galley insert of Claim 1, wherein the push rods and the threaded rod form a "Y" configuration in the first retracted position, and form a "T" configuration in the first extended position.

30 5. The mounting system for releasably installing an aircraft galley insert of Claim 1, further comprising a face plate that attaches to the insert, where the platform and face plate are rigidly attached.

6. The mounting system for releasably installing an aircraft galley insert of Claim 1, wherein the insert sits on the platform to form an air gap between the insert and a floor of the platform that serves as a ventilation area.

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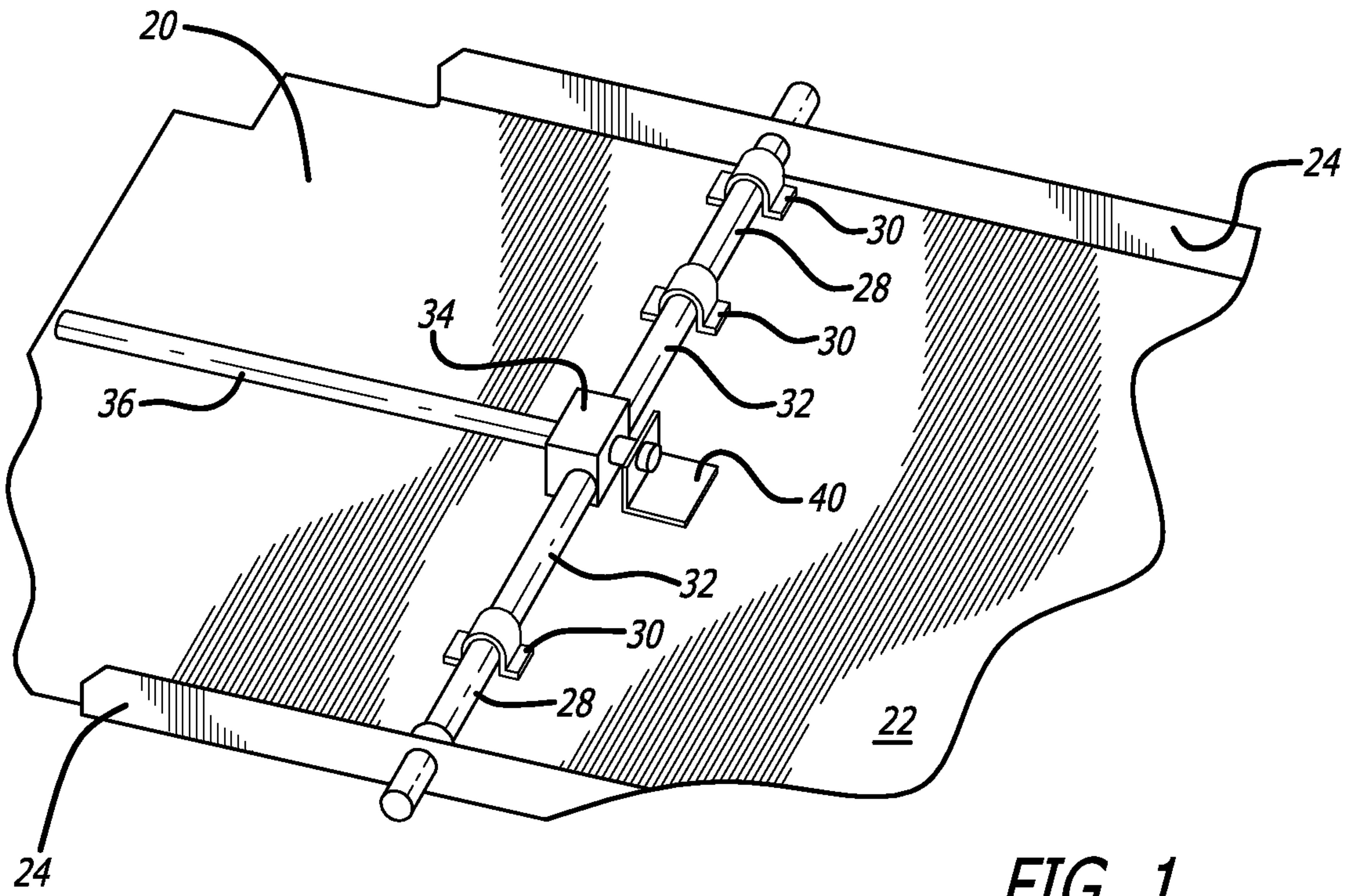


FIG. 1

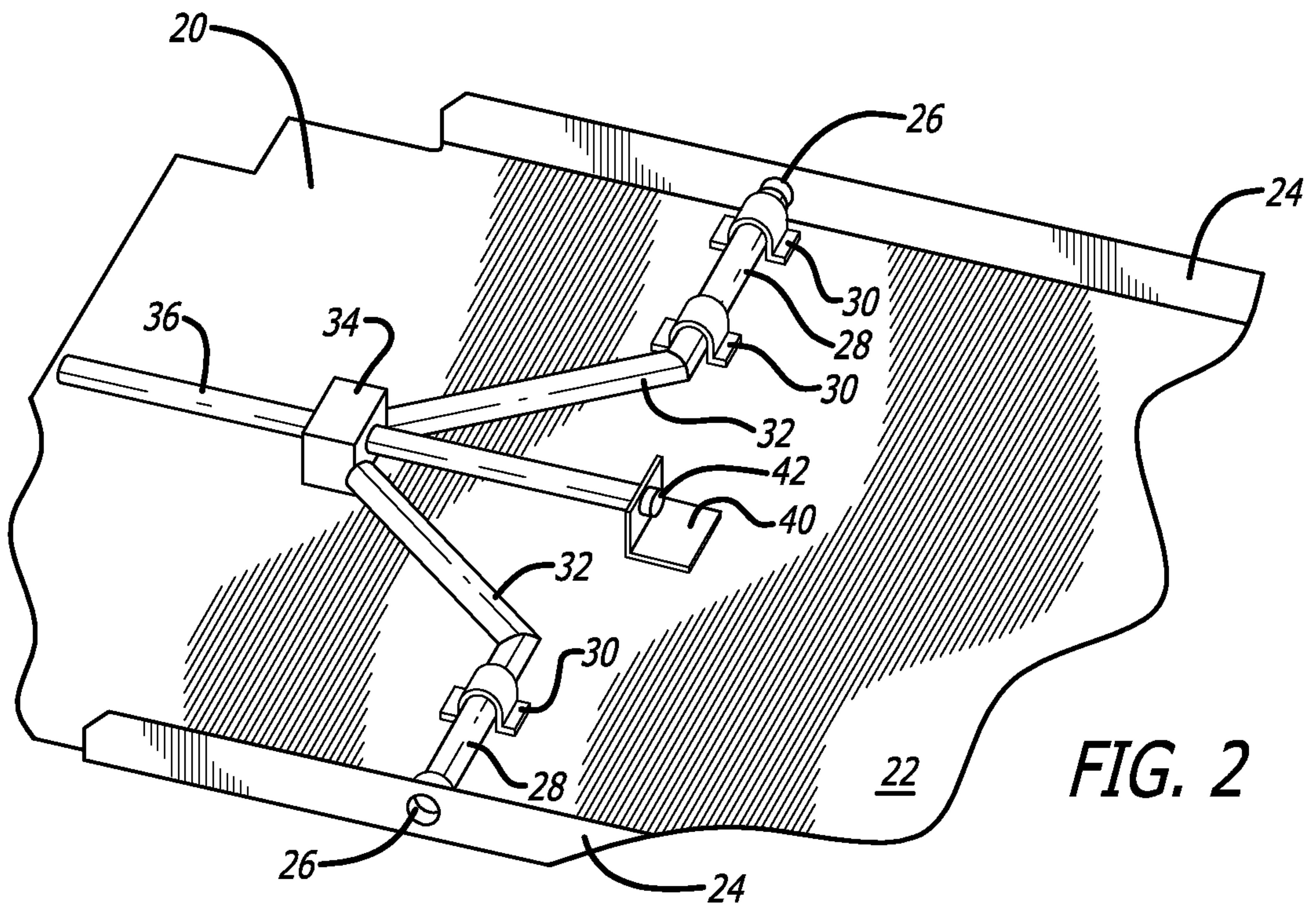


FIG. 2

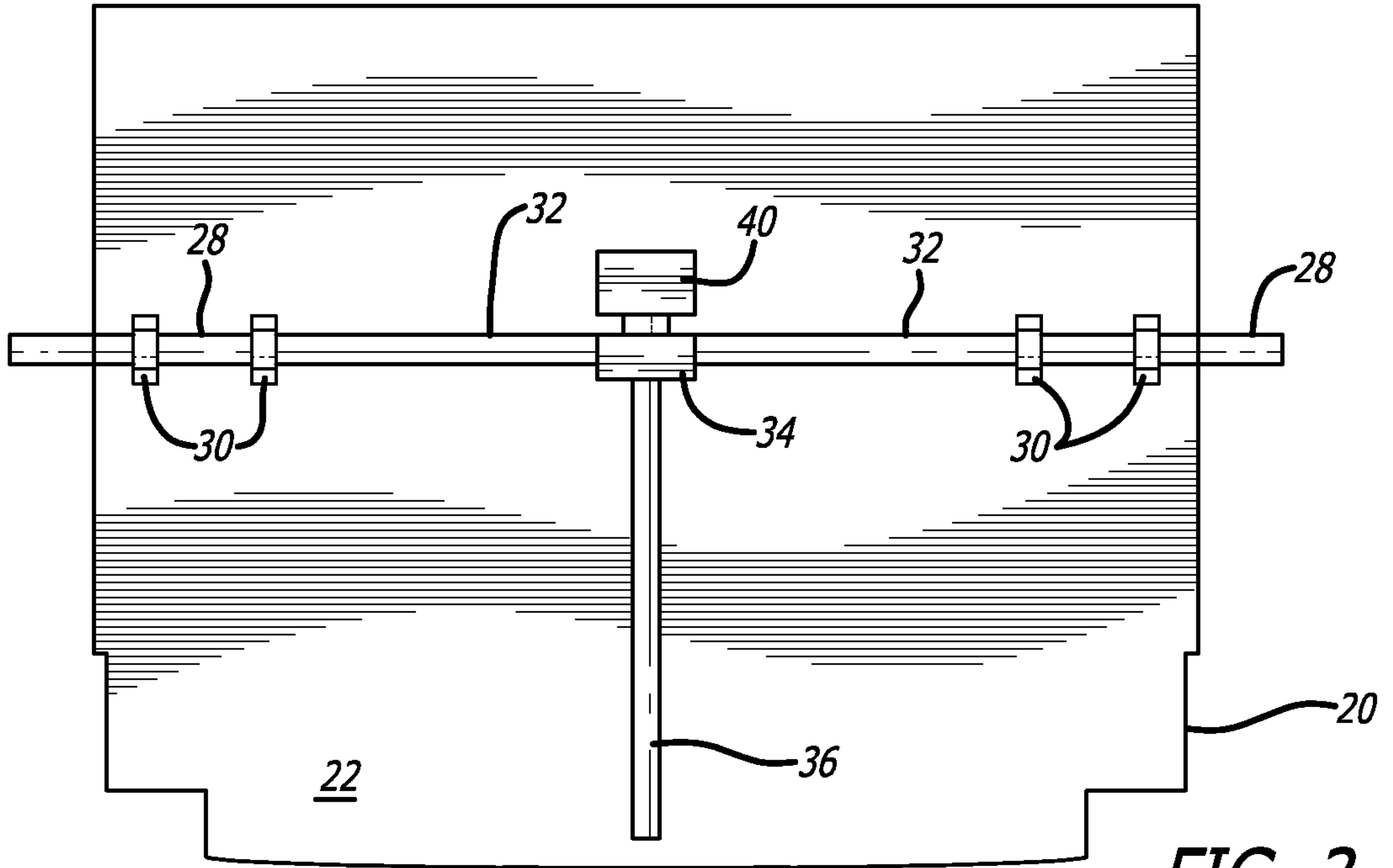


FIG. 3

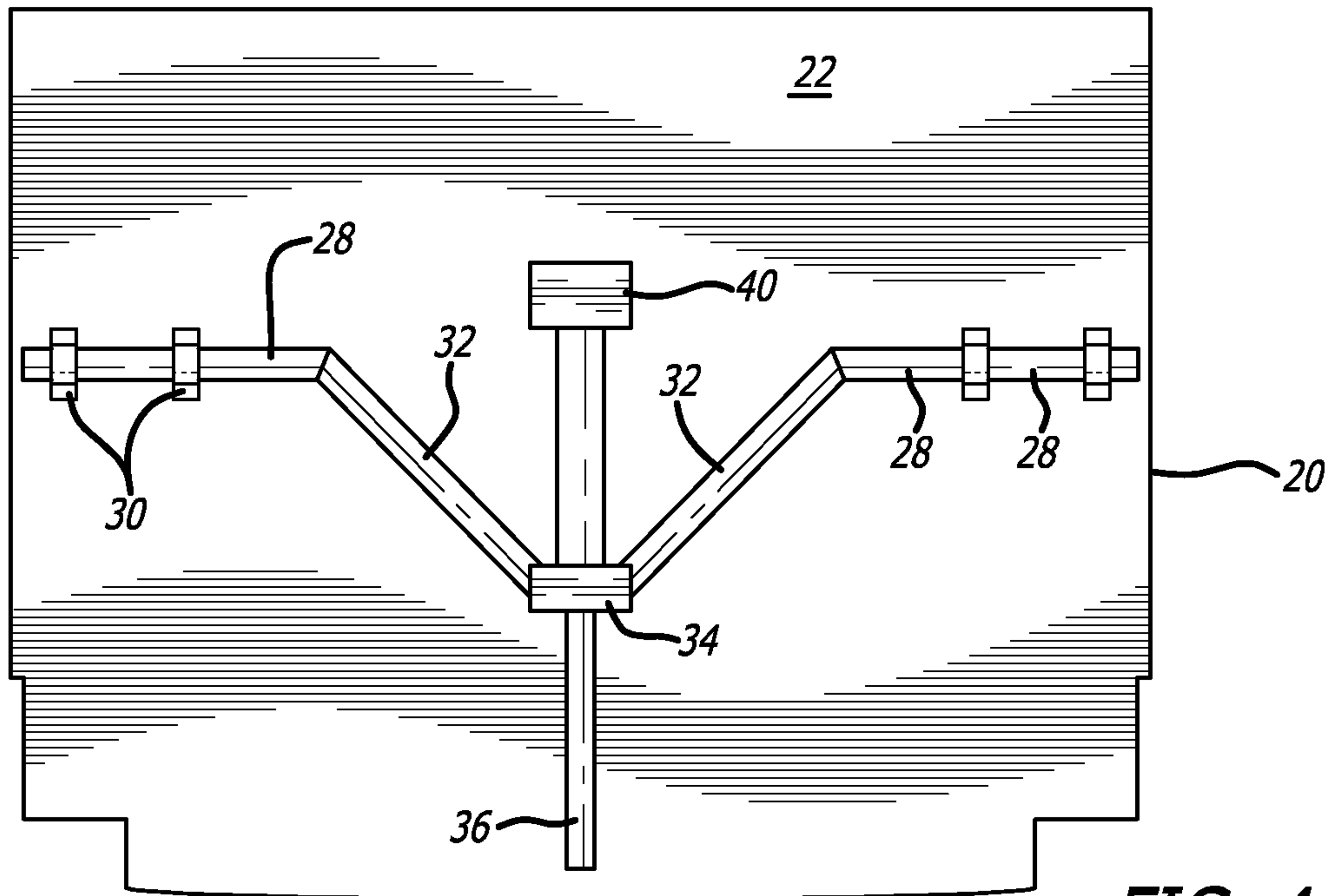


FIG. 4

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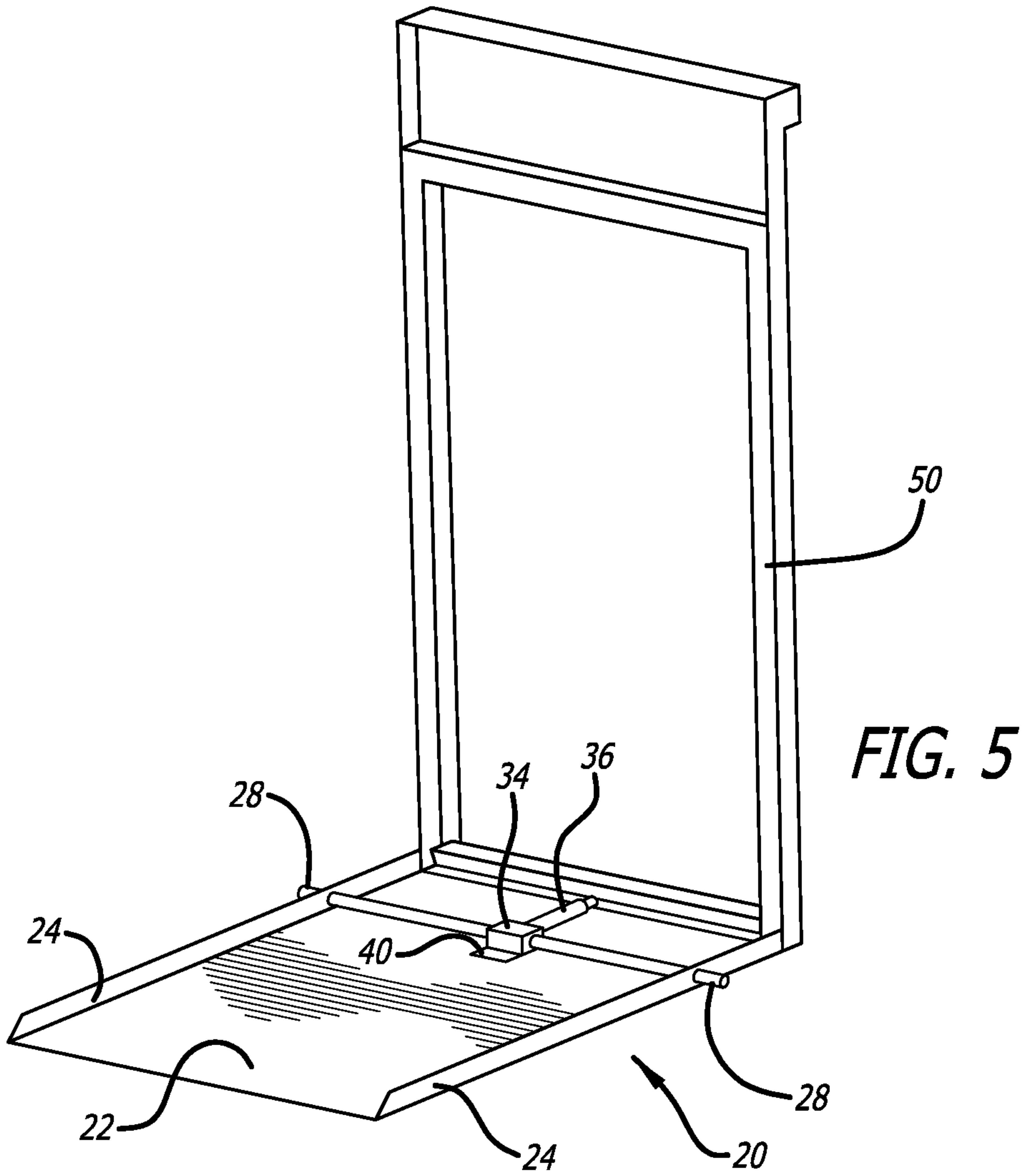
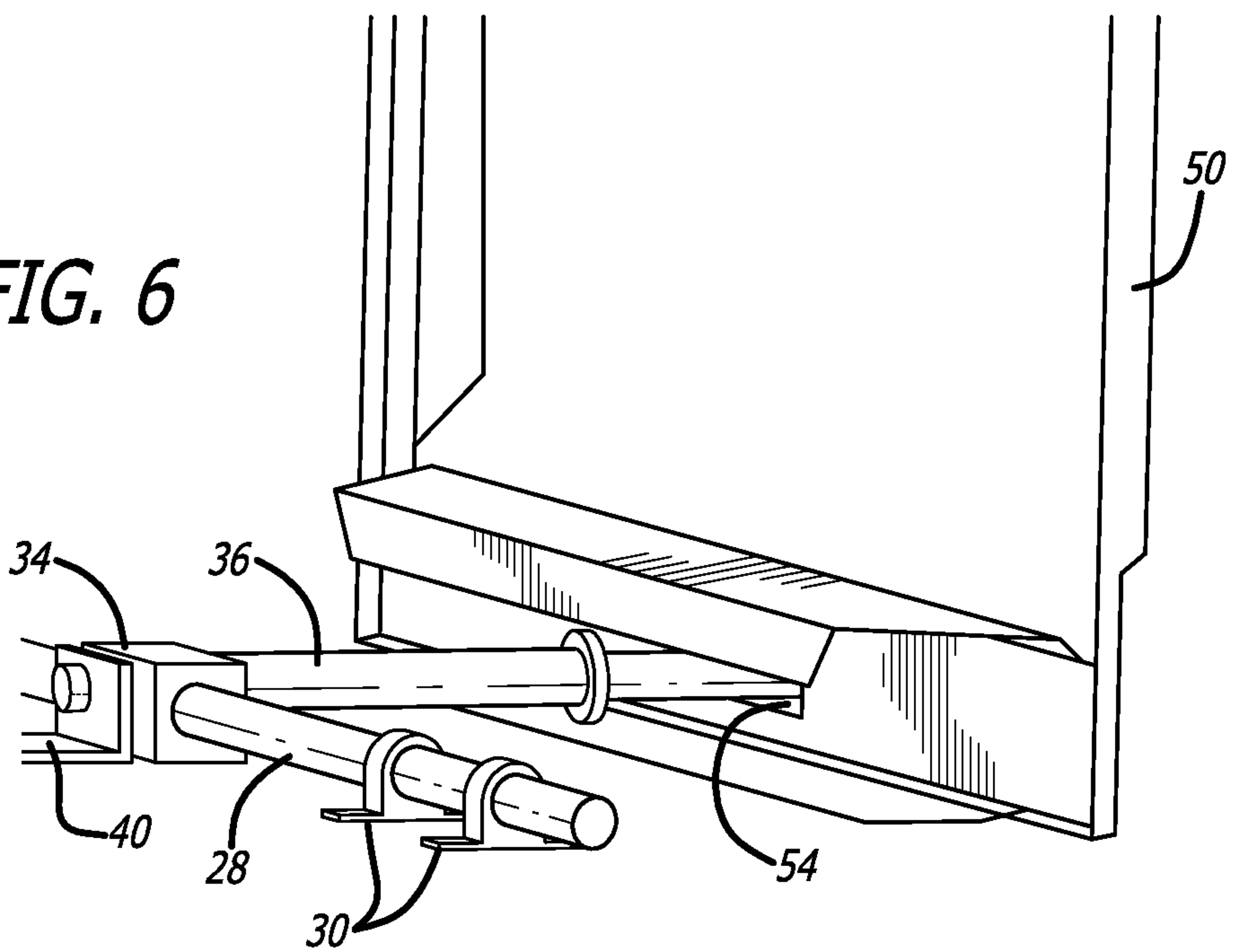


FIG. 6



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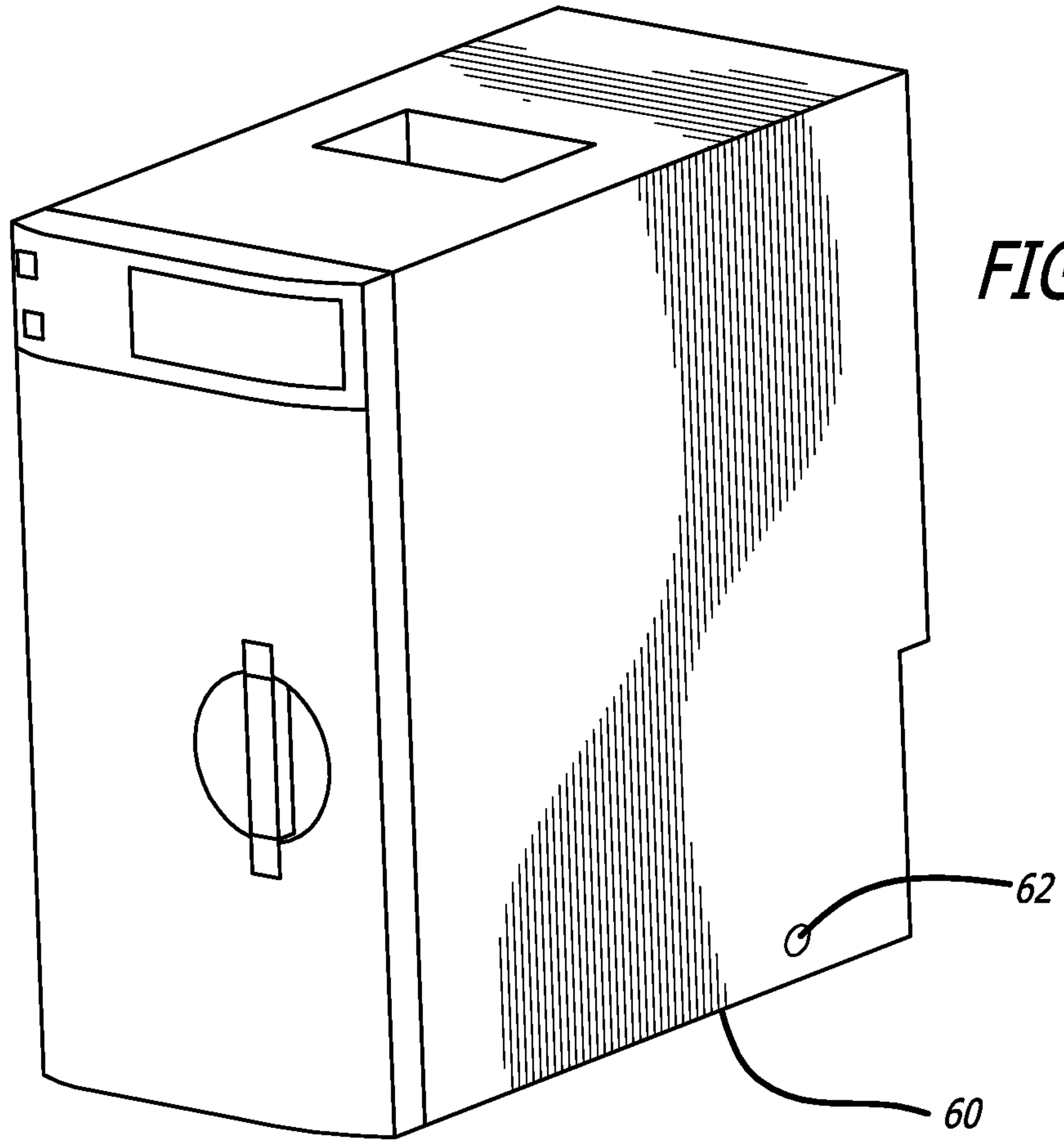


FIG. 7

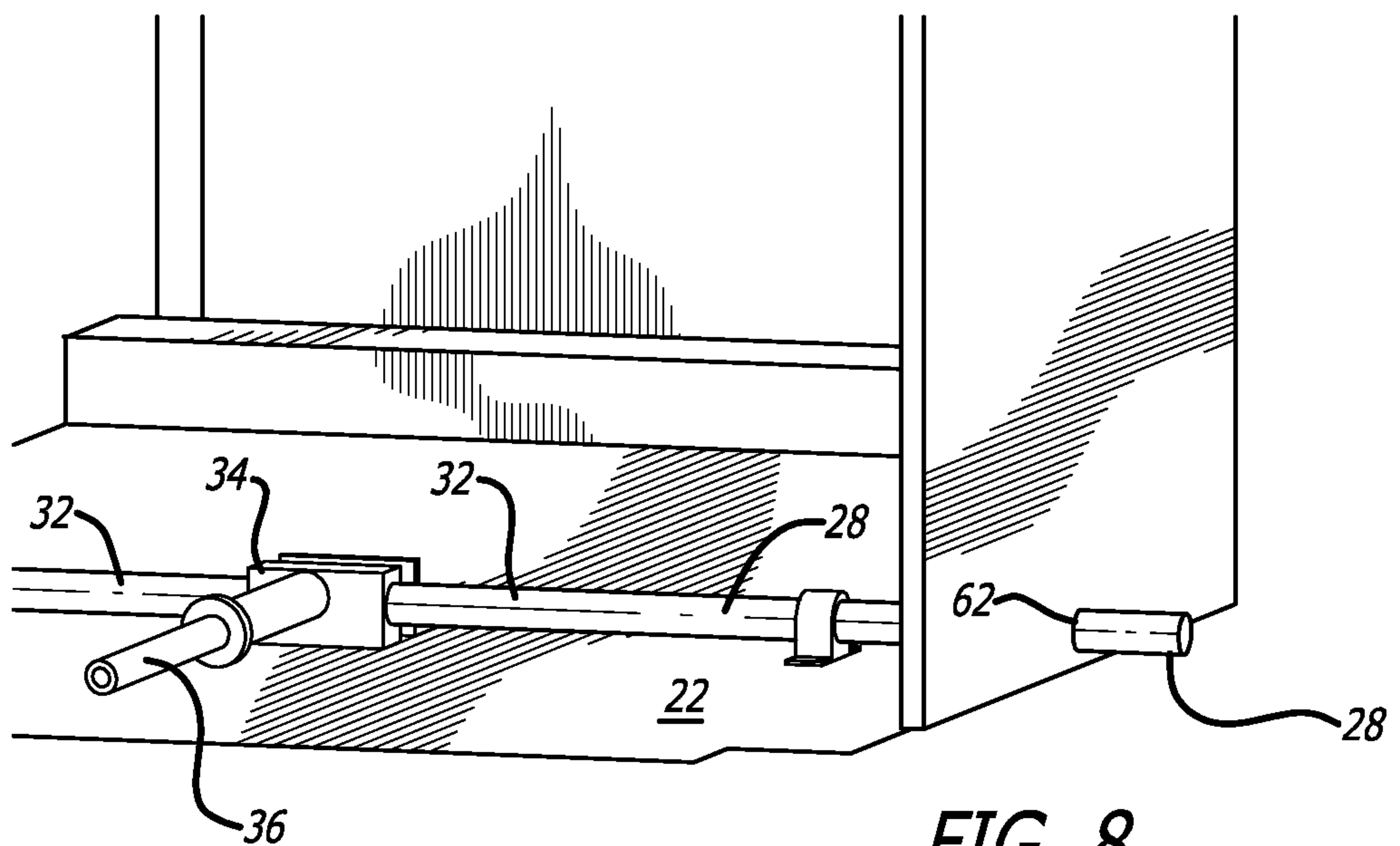
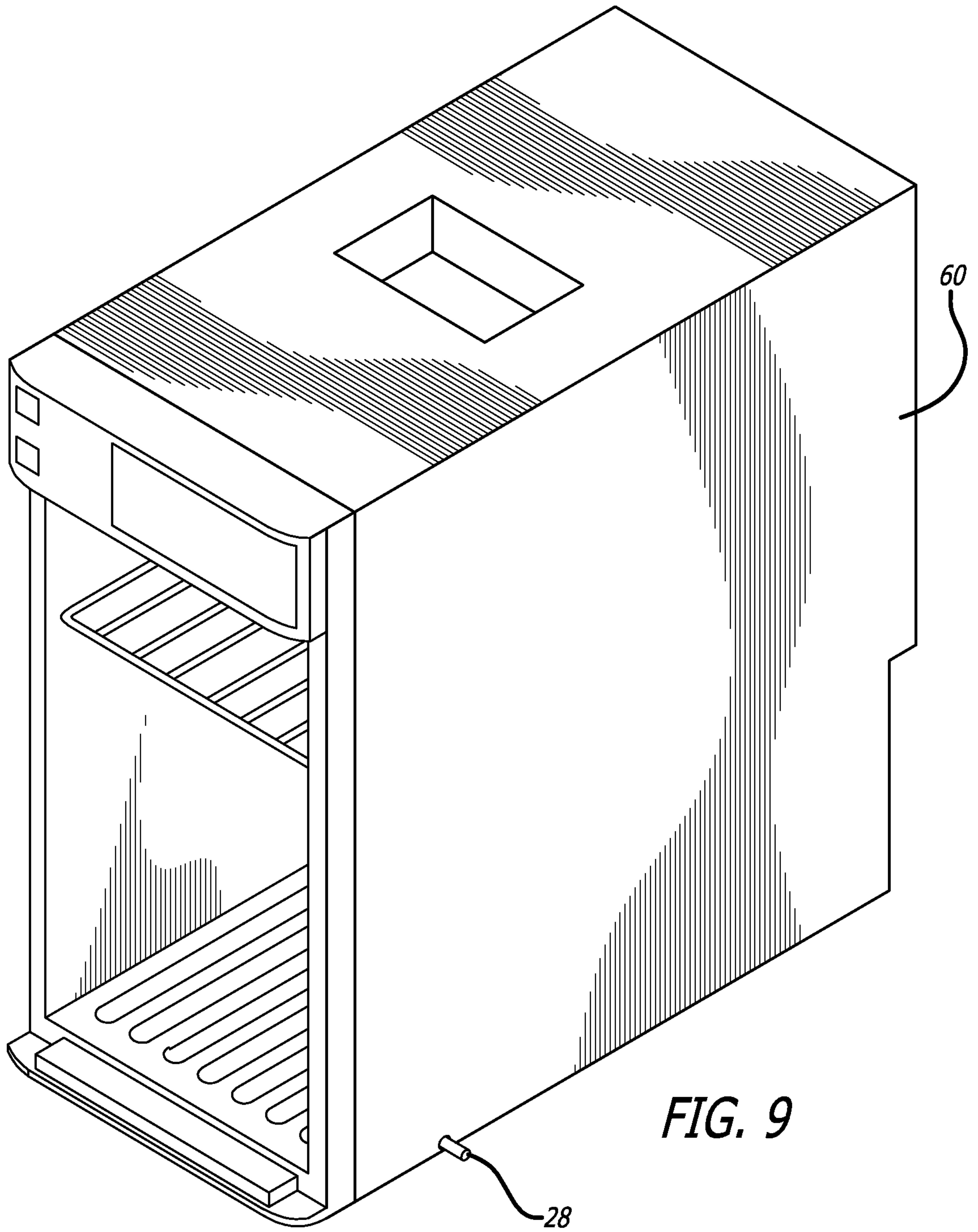
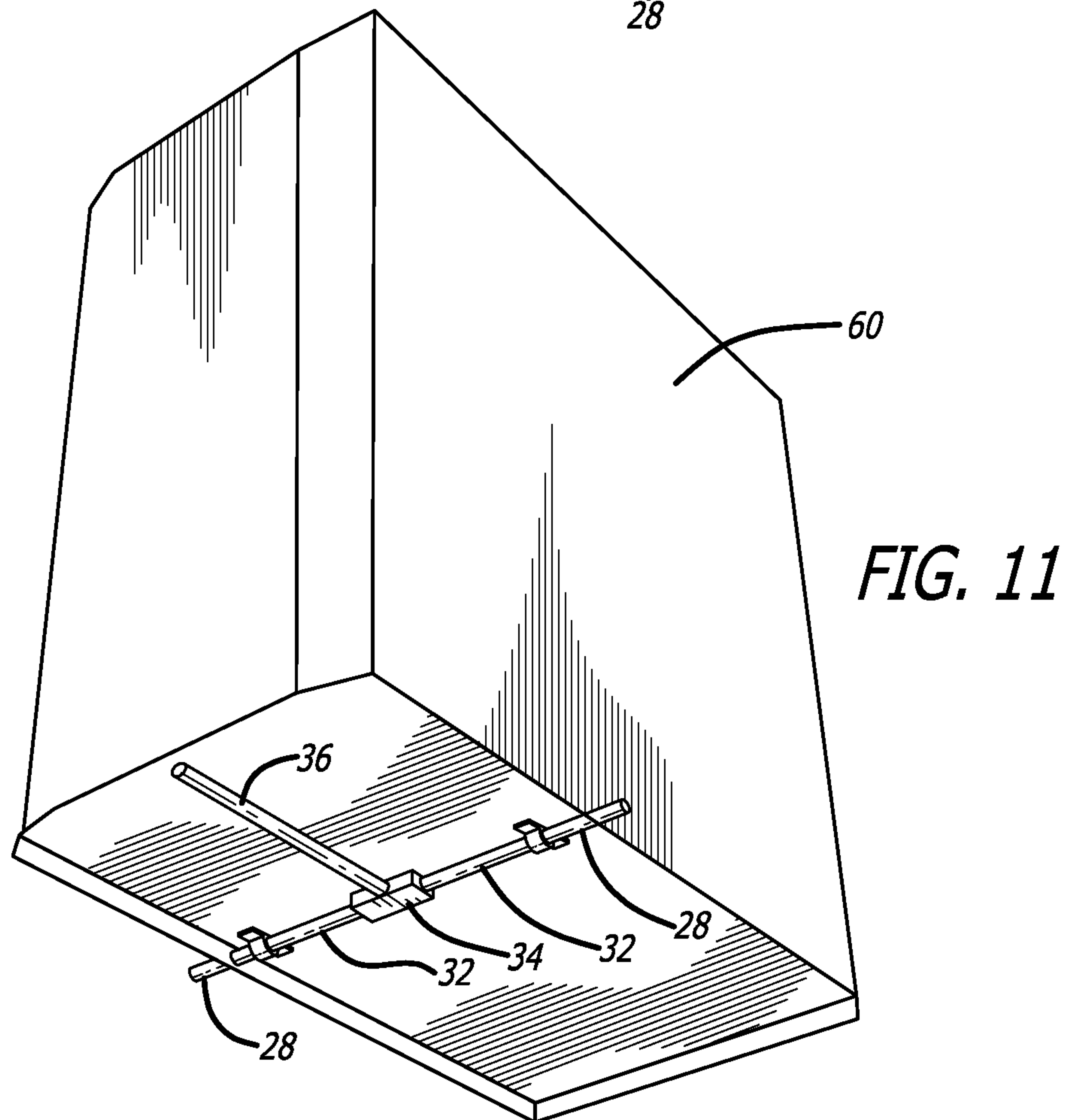
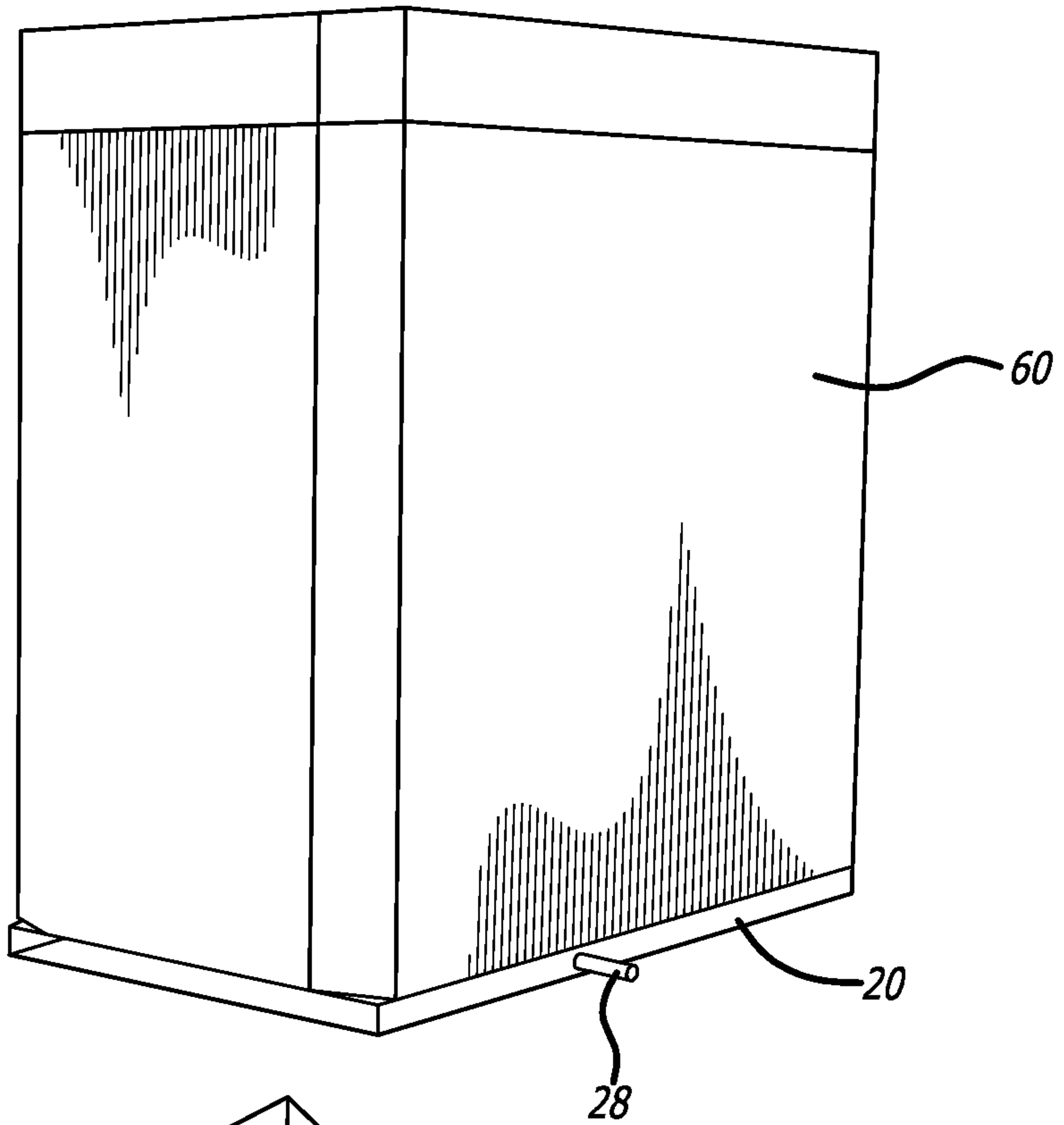


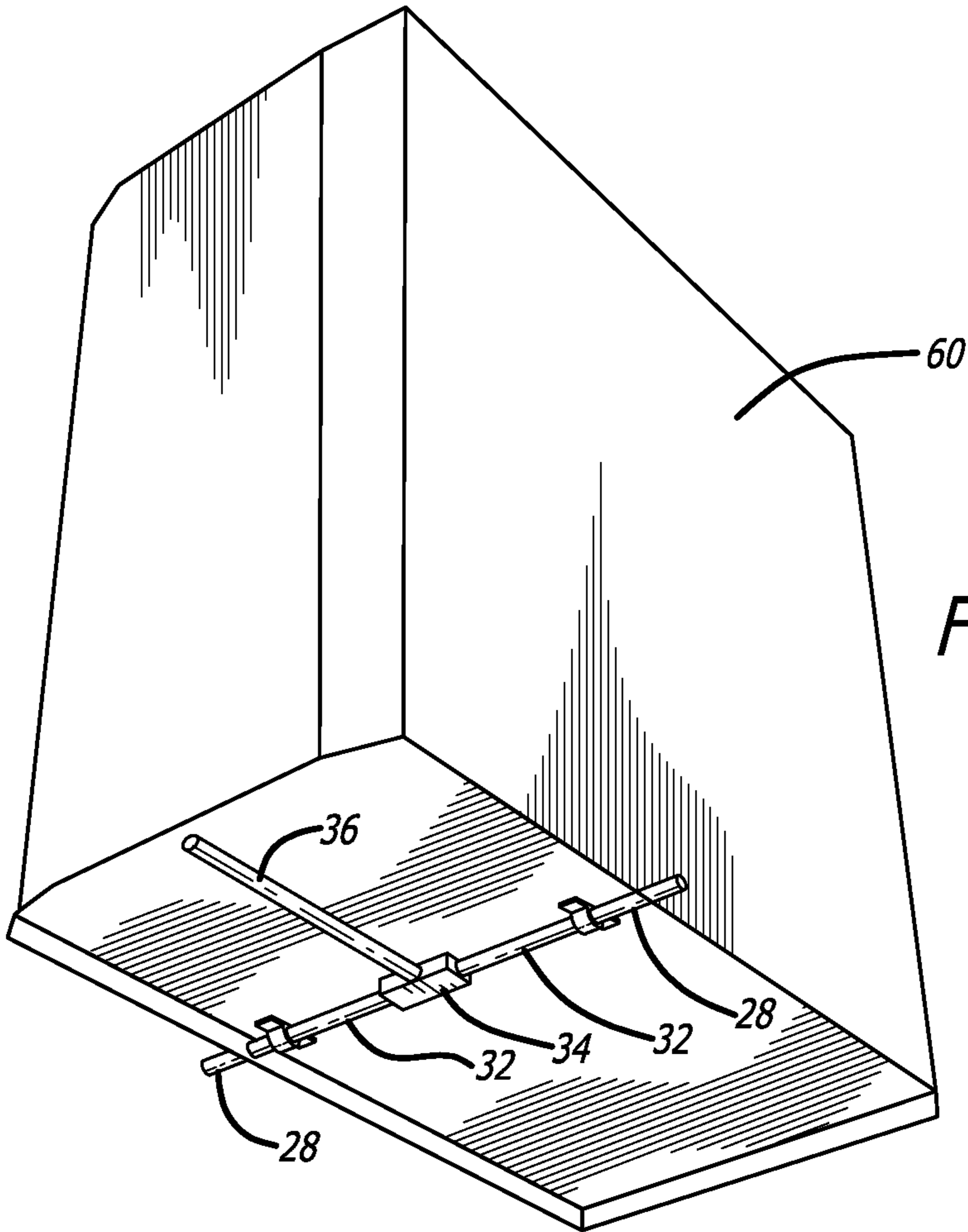
FIG. 8

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**FIG. 10**





**FIG. 11**