

Aug. 27, 1963

V. STIGLIN

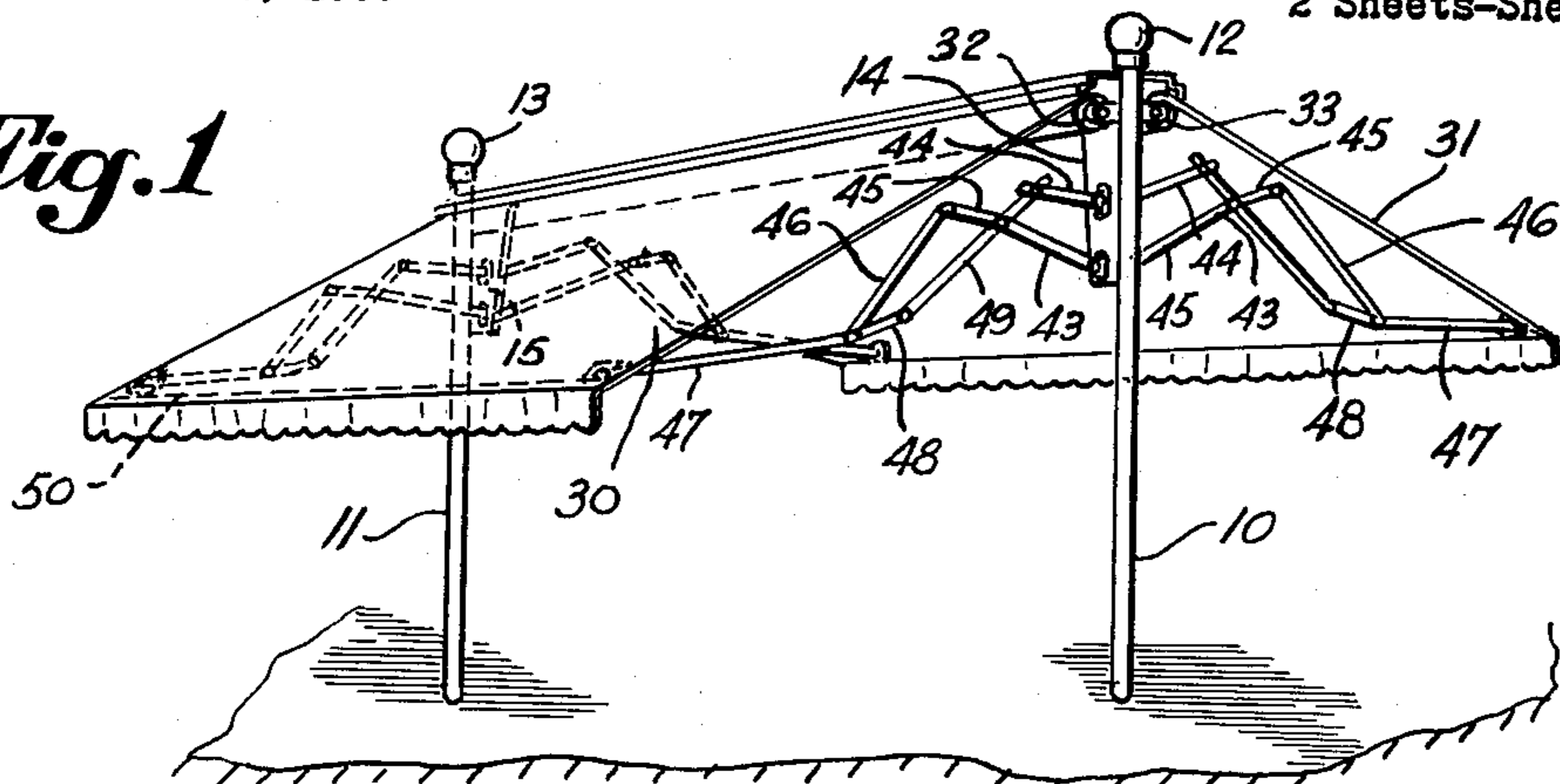
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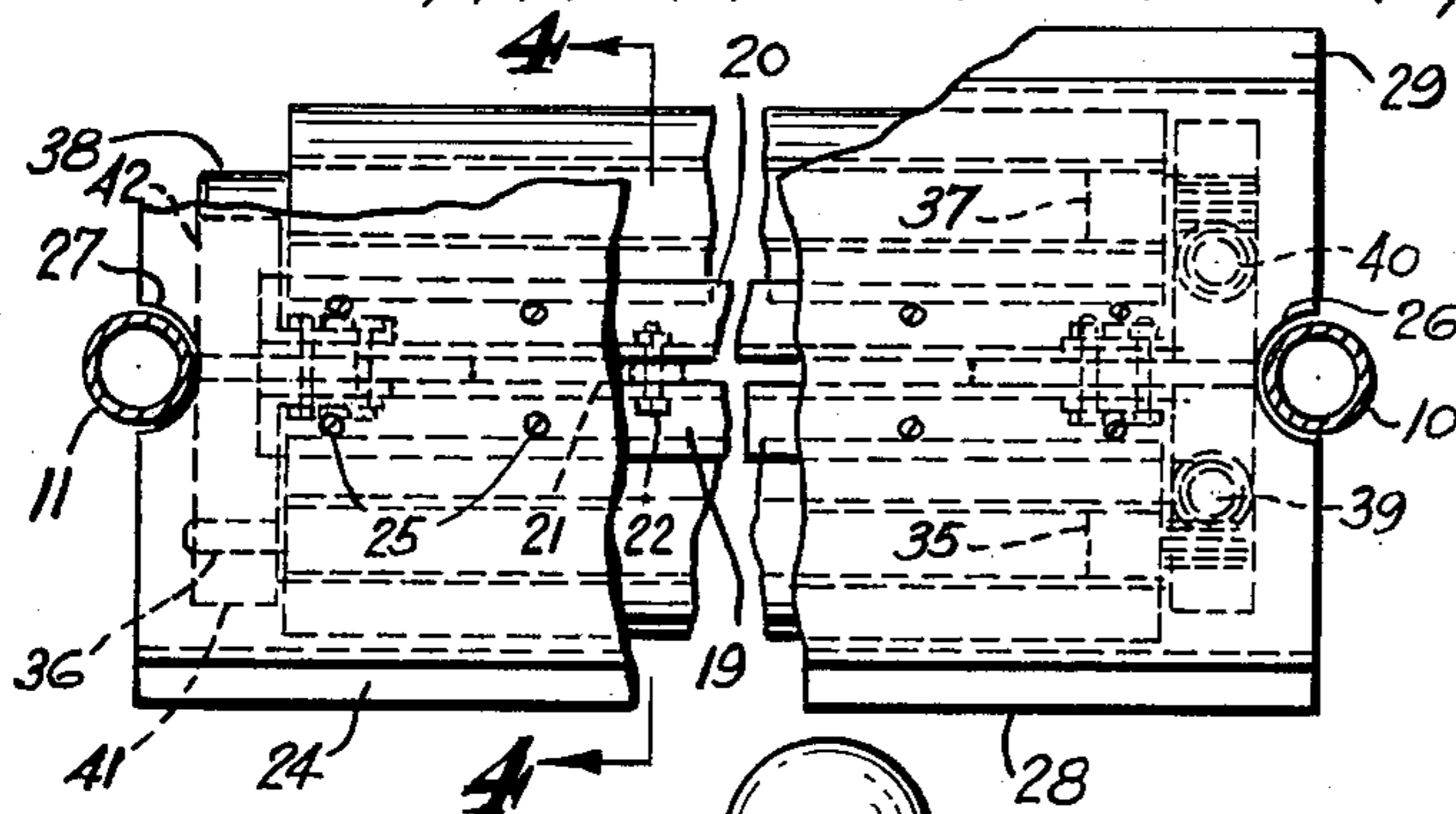
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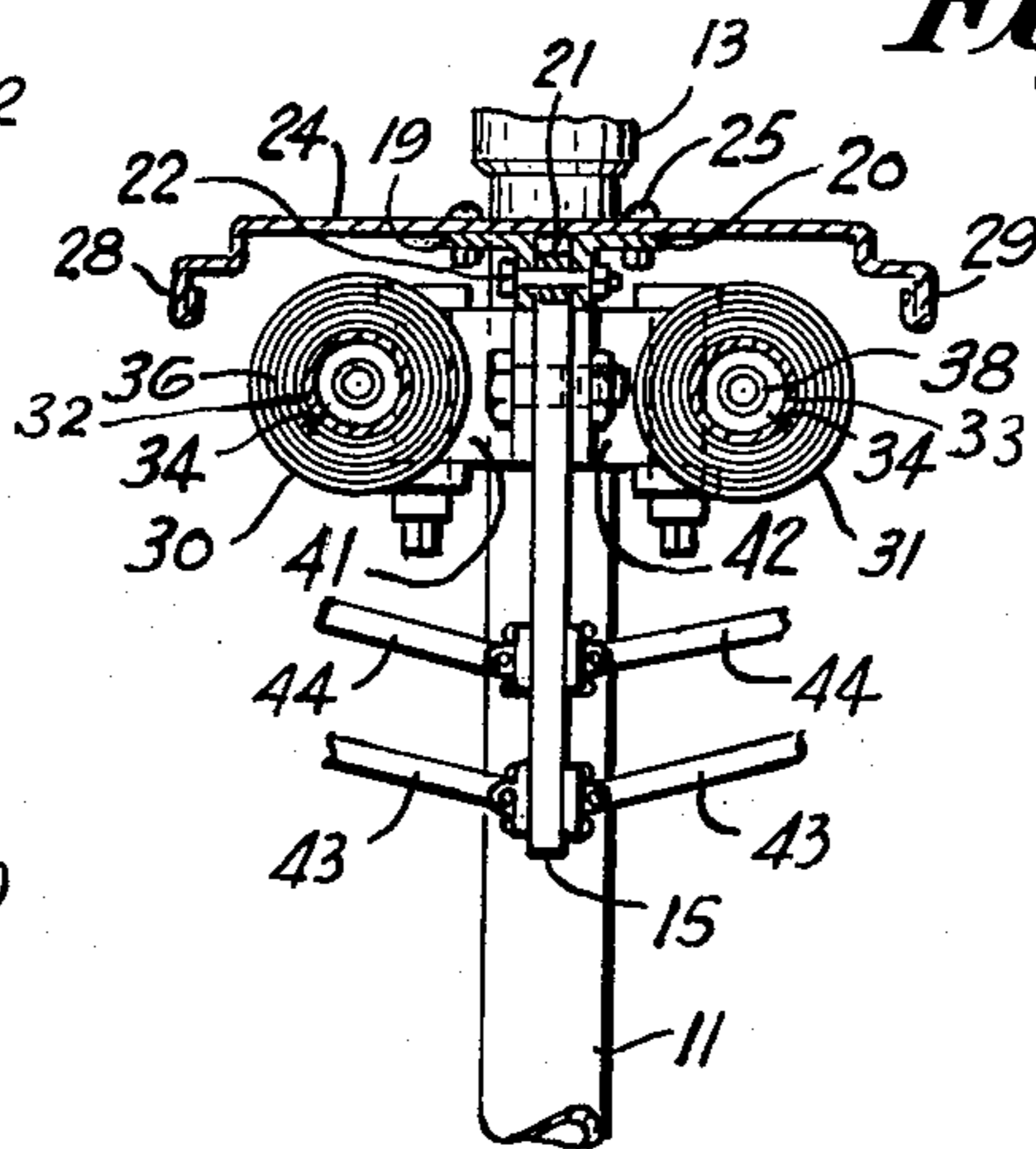
*Fig. 1*



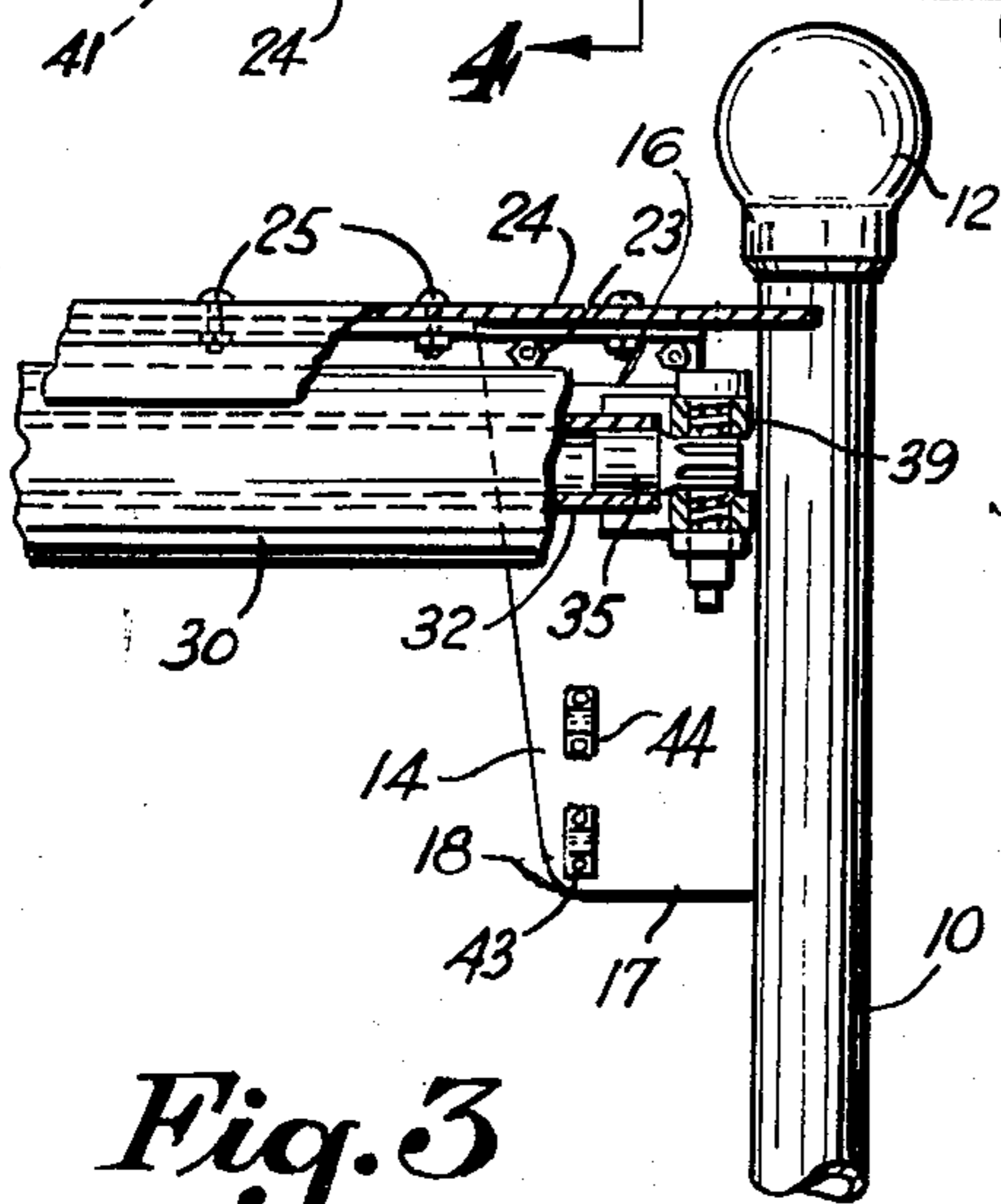
*Fig. 2*



*Fig. 4*



*Fig. 3*



INVENTOR.  
VINCENT STIGLIN  
BY  
*Richard & Geier*  
ATTORNEYS

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V. STIGLIN

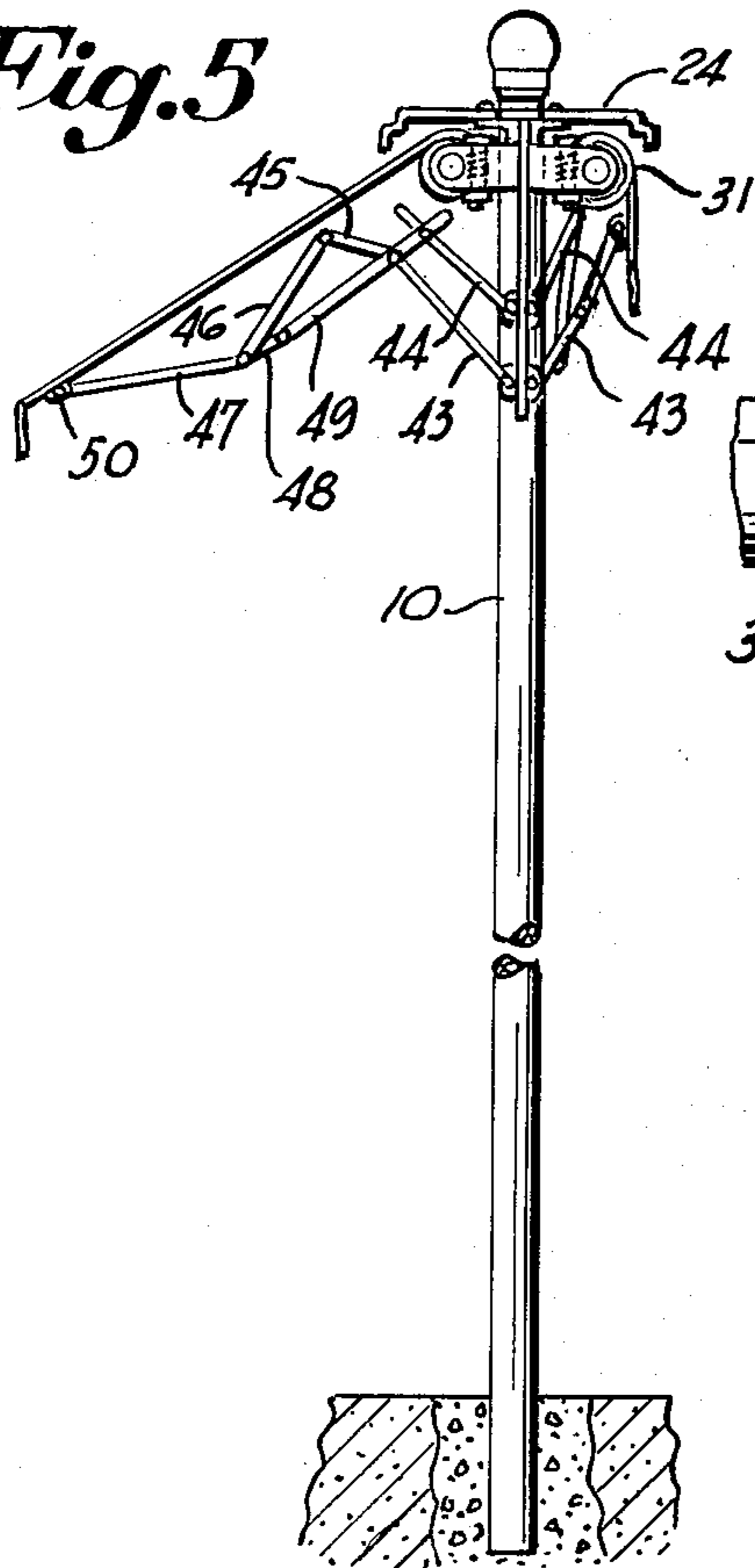
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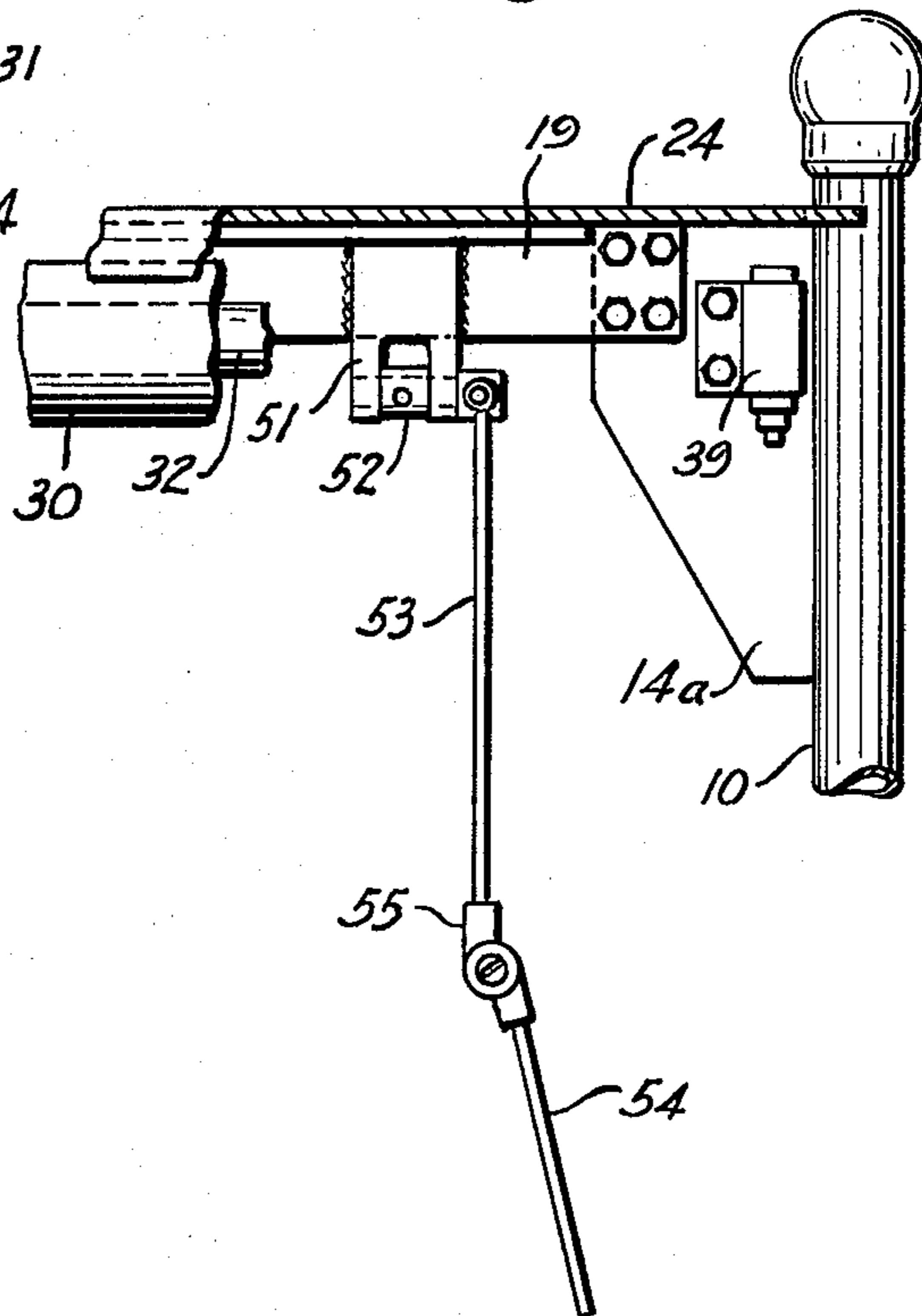
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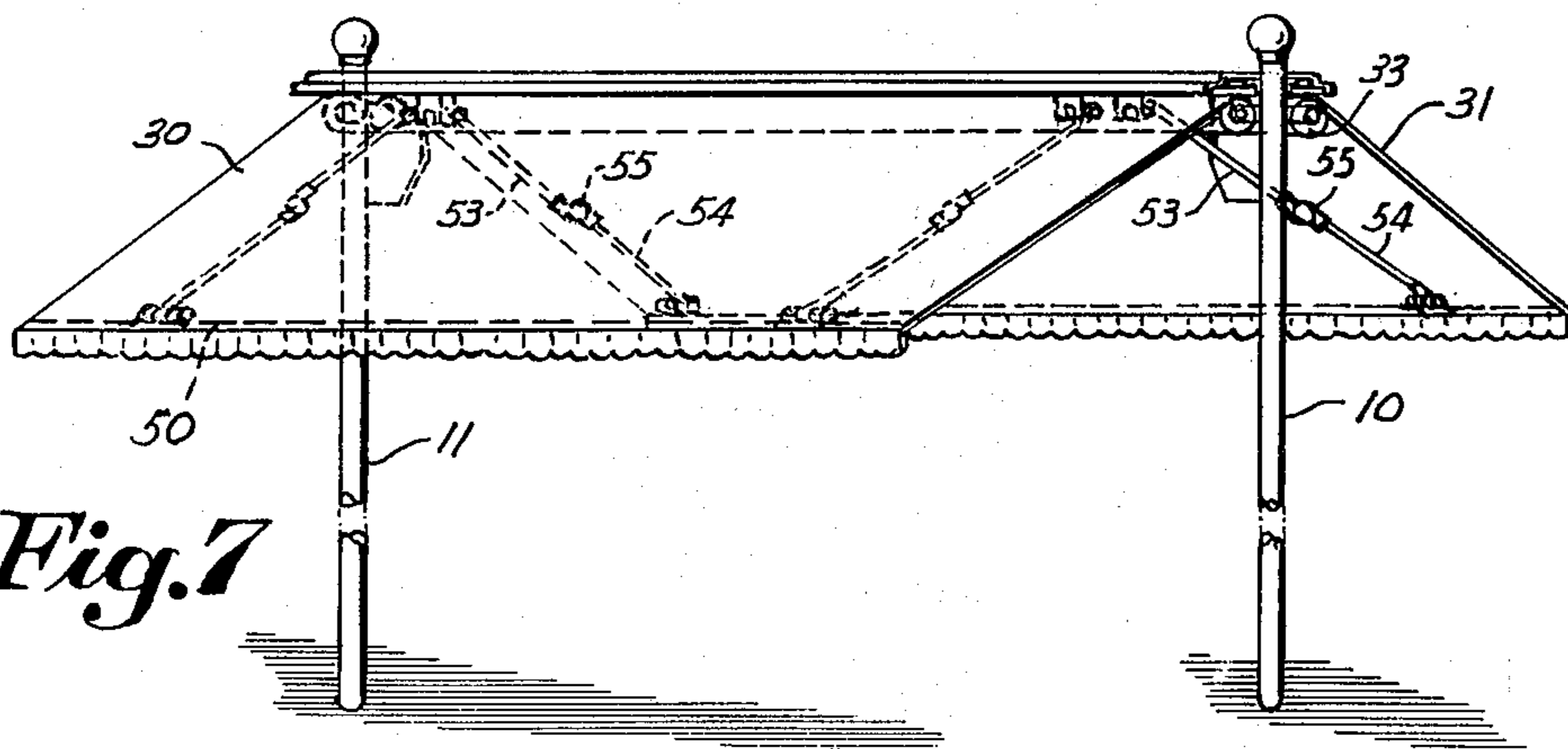
*Fig. 5*



*Fig. 6*



*Fig. 7*



INVENTOR.

VINCENT STIGLIN

BY

*Richards & Geier*

ATTORNEYS

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CANOPY

Vincent Stiglin, 532 51st St., West New York, N.J.

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3 Claims. (Cl. 135—5)

This invention relates to a canopy and refers more particularly to a retractable twin awning or outdoor canopy.

An object of the present invention is the provision of a canopy which is a retractable twin canopy, so that it can shade and expose selectively, thereby providing sunshine or shade substantially at the same spot.

Another object of the present invention is the provision of a permanent twin outdoor canopy which is self-storing, in that it is sufficiently slim and compact when drawn up, so that it will not require substantial storage spaced when removed from site, as is the case with conventional sun umbrellas.

Another object is the provision of a canopy which is so constructed that all its actuating parts are effectively protected from rain and sun, and which is sufficiently sturdy to withstand substantial storms and winds.

A further object is the provision of a twin awning wherein either side or both sides may be lowered down or raised selectively for shade or sunshine.

Yet another object is the provision of an outdoor canopy which due to its construction is particularly suitable for patios, swimming pools, gardens, gas stations, beaches, rest areas, and many other outdoor establishments and areas.

A still further object of the present invention is the provision of a canopy which has no easily breakable parts, which requires little attention and which provides the least possible problems of seasonal handling, storage and breakage.

A further object is the provision of an awning which when open will provide adequate circulation of air in all directions, and which will provide an effective up-draft escape for sudden gusts of wind.

Other objects of the present invention will become apparent in the course of the following specification.

In accomplishing the objects of the present invention it was found desirable to provide a canopy which is supported by two posts firmly embedded in the ground. Each post carries a flange which is firmly connected vertically to the top portion of the post, with the two flanges facing and extending toward each other and being in alignment in the longitudinal vertical plane of the canopy. The posts carry all the operational machinery of the canopy, including the ends of two elongated angle irons which support a one-piece sheet metal hood serving as a covering for all movable parts, particularly the canvas-carrying rollers. The rollers are connected by gudgeons with blank ends and worm gears carried by the flanges, the construction being such that one-half of the canopy can be easily raised and lowered independently of the other half. Bars carried by the fabrics are connected with ends of a set of awning arms, the other ends of the set being carried by one of the flanges. Preferably, there are four such sets, supported by opposite sides of the two flanges back to back, held by one set of bolts. The arms may be of the accordion type, or they may consist of articulated tubular arms.

The invention will appear more clearly from the following detailed description when taken in connection with the accompanying drawing showing, by way of example only, a preferred embodiment of the inventive idea.

In the drawing:

FIGURE 1 is a perspective view of a twin outdoor

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canopy constituting the subject matter of the present invention.

FIGURE 2 is a top view of the canopy with the fabric rolled up, some parts being shown as broken off.

FIGURE 3 is an enlarged side view of the top portion of one of the posts, some parts being shown in section.

FIGURE 4 is a section along the line 4—4 of FIGURE 2, on an enlarged scale.

FIGURE 5 is an end view, showing one half of the awning open and other rolled up.

FIGURE 6 is a side view of one of the posts, showing a somewhat different construction.

FIGURE 7 is a perspective view of the canopy of FIGURE 6.

The twin canopy of the present invention shown in FIGURES 1 to 5 is carried by two identical posts 10 and 11; each of the posts is made of galvanized pipe, although ornamental wrought iron or other suitable materials may be effectively employed. The posts 10 and 11 carry slip over ball caps 12 and 13, respectively.

Obviously, the size of the canopy and of its posts 10 and 11 may be varied depending upon the individual requirements. However, for average requirements it was found desirable to provide posts having a height of 10 feet 6 inches, which are embedded in holes dug in the ground and lined with concrete, leaving above ground a height of about 8 feet 6½ inches. The canopy should preferably extend in a north-south direction, and the distance between posts, which is determined by the length of the top structure hereinafter described, may be about 10 feet.

In accordance with the present invention, each of the posts 10 and 11 carries a flange 14 and 15, respectively, which is welded to the post close to the top portion thereof, so that it extends centrally in relation to the circumference of the post. When the canopy is assembled, the flanges 14 and 15 carried by the posts 10 and 11, respectively, extend toward each other and are located in the same longitudinal plane of the canopy. An important feature of this invention is that all the operational hardware is carried by the two flanges.

When posts of the above indicated size are used, the flange 14 (FIG. 3) may have a height of 2 feet 8 inches, the length of its upper edge 16 being 6 inches and the length of its lower edge 17 being 4 inches. The lower corner 18 of the flange is rounded.

The flanges 14 and 15 carry close to the upper edge 16 a row of horizontal holes for the attachment of the angle iron, top structure 19, 20 and worm gears 39, 40, or blank ends 41, 42, and two pairs of vertically disposed holes for the attachment of pivots supporting the awning arms 43 and 44.

The top structure comprises two angle irons 19 and 20 which are maintained parallel to each other by spacers 21 carried by bolts 22 which extend through aligned holes provided in the angle irons. Other bolts 25 connect the angle irons 19 and 20 to the flanges 14 and 15.

A one piece sheet metal hood 24 is located over the angle irons 19 and 20 and is firmly connected therewith by bolts 25 extending through aligned openings provided in the hood and the angle irons. Opposite transverse edges of the hood are provided with central semi-circular portions 26 and 27 embracing adjacent outer surfaces of the posts 10 and 11 to provide adequate protection to the parts under the hood. The longitudinal edges 28 and 29 of the hood 24 are bent downwardly, then outwardly and then downwardly again to provide a stepped formation.

The one piece hood 24 covers all the movable parts of the device, as well as all the canvas work when it is rolled up and partially when it is drawn down, so as to

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protect it from rain. Furthermore, when the awning is open, winds striking the awning from or at the underside will be directed upwardly and will escape through the space provided between the bottom of the hood 24 and the canvas carrying rollers 32 and 33. Thus the hood provides venting in case of a sudden wind and also facilitates normal air circulation.

It should be noted that the proper dimensioning and positioning of the flanges 14 and 15 relatively to the posts 10 and 11 and to the frame assembly, as well as the location of the bore holes upon the flanges and the size and shape of the hood 24, are most important to provide an effective canopy and to assure its successful operation.

The two canvas sections 30 and 31 are carried by the steel-tubing rollers 32 and 33, respectively. The fabrics 30 and 31 may consist of mildew-proof canvas duck, impregnated or coated with vinyl on both sides. The inner edges of the fabrics 30 and 31 are firmly attached to the rollers by shaped nails indicated diagrammatically at 34 (FIG. 4) and fitting tightly into correspondingly shaped holes provided in the rollers 32 and 33. One end of the tubular roller 32 carries a gudgeon 35 while the other end of the roller 32 carries a gudgeon 36. The roller 33 carries at its ends gudgeons 37 and 38. The gudgeons are held firmly within the rollers preferably by rivets or thin bolts (not shown). Gudgeons 35 and 37 are of the same type while gudgeons 36 and 38 are also of the same type, but different from the gudgeons 35 and 37. In the example illustrated, the flange 14 of the post 10 carries worm gears 39 and 40 for actuating the awning, while the flange 15 of the post 11 carries blank ends 41 and 42 for supporting the ends of the rollers 32 and 33. Consequently, gudgeons 35 and 37 are provided with square holes (not shown) for the worm gears 39 and 40, while gudgeons 36 and 38 have protruding pins for the blank ends 41 and 42.

It is apparent that this arrangement may be varied, if desired, namely, the worm gears may be located at the opposite end, or at both ends.

The worm gears 39 and 40 are mounted back to back upon the flange 14 and are held firmly by bolts. It is important that the mechanism in one worm gear be reversed, so that both sides of the awning can be operated from, and at, the same post.

Since the parts 32 to 42 are known in the art, they are indicated diagrammatically in the drawings.

There are four sets of awning arms used to support the canvas sections 30 and 31 in the open position, two sets being carried back to back by the flange 14, while the other two are also carried back to back by the flange 15; since they are all the same, only one of the sets will be described in detail.

The flange 14 carries two arms 43 and 44 located one above the other and extending outwardly in a plane perpendicular to that of the flange. Two similar arms 43 and 44 are located on the opposite side of the flange. These arms are attached to hinge fittings bolted back to back. The arm 43 is provided with an extension 45 pivotally connected to an end of an arm 46, the other end of which is pivoted to an arm 47. The arm 47 has an extension 48 which is pivotally connected to an arm 49 connected to the arms 43 and 44. The other end of the arm 47 is connected to a front bar 50 most of the length of which is concealed in a loop of the front edges of the canvas 30. The arm 47, preferably, has the length of 23 5/8 inches from its end to its pivot, the size of the other arms depending on the size of the canopy.

While any suitable means may be used to attach the arms 47 to the front bars 50, it was found advantageous to use so-called jaw pin end fittings well known in the art, which are attached to threaded ends of the bars 50. The bars 50 may be hollow and contain inner iron rods to increase the operational weight.

The canopy may be supplied with electrical illumina-

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tion (not shown) by overhead or underground means and through the use of wiring located within one of the posts 10 and 11. The electrical lamps may be conveniently located between the rollers 32 and 33.

It is advisable to galvanize all metal parts of the canopy by the hot-dip process. Then they should be coated with a primer suitable as a base for any suitable final coat of paint.

#### Operation

Operation of the described canopy is extremely easy, as is apparent from the above description. The operator uses a winding brace provided with an extension rod (not shown) to turn the worm gear 39 or the worm gear 40 with the result that either the roller 32 or the roller 33 will be actuated to unroll or wind the fabric 30 or 31. The movement of the front bars 50 carried by the fabrics 30 and 31 is transmitted to the arms 43 to 47 which are in folded position when the fabric is wound up and which unfold gradually as the fabric is being unrolled. When the canopy has been drawn down as far as the folding arms permit, it should be cranked up slightly to get the fabric taut and straight.

It is apparent that the shapes and dimensions of the flanges, top structure, frame assembly and hood in their relation to the posts change with the selected size of the canopy.

FIGURES 6 and 7 illustrate a canopy which instead of having sets of folding arms 43 to 47, is provided with tubular, articulated awning arms described in greater detail in Patents Nos. 1,759,715; 1,993,183 and 2,123,828. In other respects the canopy is essentially the same as the one previously described. It comprises posts 10 and 11 carrying flanges 14a, which extend toward each other in the longitudinal direction of the canopy. However, flanges 14a are substantially shorter than the flange 14 shown in FIG. 3.

The flanges 14a carry angle irons 19 which support the one piece metal hood 24. Furthermore, the flanges 14a carry the usual gudgeons and worm gear 39.

However, in this construction the angle irons carry two double face plates 51 which are spaced from the posts and one of which is shown in FIGURE 6. Each of the plates 51 carries back to back two brackets 52. Each bracket 52 carries a separate tubular, articulated awning arm consisting of two separate parts 53 and 54 joined by a spring controlled central hinge 55. The outer ends of the arm parts 54 are attached to the front bars 50 of the awning 30 and 31. As the awnings wind up on the rollers 32 and 33, respectively, the lateral arms fold horizontally underneath the rollers, with the outer part 54 parallel with the roller. This is accomplished by the oblong shape of the holes (not shown) provided in the brackets 52 and carrying the arm parts 53. The center spring control (not shown) provided by the hinge 55 helps to unfold the arm and to keep it in its correct extended position. Furthermore, the hinge 55 locks the arm in the projected position. In the example illustrated there are four tubular, articulated arms 53, 54, two of the arms being "lefts" and two "rights," whereby the arms fold toward the center of the canopy.

It is apparent that various other modifications and variations may be made within the scope of the present invention. All such variations and modifications are to be included within the scope of the present invention.

What is claimed is:

1. A canopy, comprising two vertical posts, a separate flange carried by each post, said flanges extending toward each other and being in alignment, rollers-actuating means carried by one of said flanges, roller-supporting means carried by the other one of said flanges, two angle irons having vertically extending parallel portions and aligned horizontal portions, two rollers located on opposite sides of said angle irons, a hood carried by said aligned horizontal portions of the angle irons and having

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bent edges extending over said rollers, said rollers having adjacent ends supported by said roller-actuating means and other adjacent ends carried by said roller-supporting means, two canvases, each canvas having an inner end connected to a separate roller and adapted to be wound thereon and unwound by the roller-actuating means, and four sets of foldable arms, two of said sets having ends pivotally supported upon opposite surfaces of one of said flanges, the other two sets having ends pivotally supported upon opposite surfaces of the other one of said flanges, means connecting other ends of the first mentioned two sets with the outer ends of said canvases at one side, and means connecting other ends of said other two sets with the outer ends of the canvases at the other side.

2. A canopy in accordance with claim 1, said sets consist of sets of tubular, articulated lateral awning arms adapted to fold parallel to said vertical plane when said canvas is folded.

3. A twin canopy comprising, in combination, two vertical posts, a separate flange firmly connected to each post adjacent the top thereof, the flanges of the two posts extending toward each other and being located in the central longitudinal plane of the canopy, each of said flanges having upper holes and at least one lower hole, a separate pair of angle irons for each flange, means engaging said angle irons and some of said upper holes for connecting said angle irons to said flanges while supporting the tops

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of said angle irons above said flanges, a single hood located upon the tops of said angle irons and firmly connected with said angle irons, said hood having opposed semi-circular end portions embracing said posts, the side portions of said hood having steps extending in the direction of the canopy, a pair of rollers, separate gudgeons in opposite ends of said rollers and connected with said rollers, worm gears connected with other upper holes of at least one of said flanges and operatively engaging at least two gudgeons connected with separate rollers, separate canvas sections carried by said rollers and having inner edges firmly connected with said rollers, said rollers and the canvas sections carried by the rollers being spaced from said hood and being adapted to be located under said hood, bars carried by outer ends of said canvas sections, and sets of interconnected awning arms, said sets having outer ends connected to said bars and inner ends connected to the lower holes of said flanges.

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