Nov. 22, 1966 A. W. COOK ET AL 3,286,682

TELESCOPIC MAST WITH UNDERGROUND STORAGE

Filed April 13, 1964

2 Sheets-Sheet 1

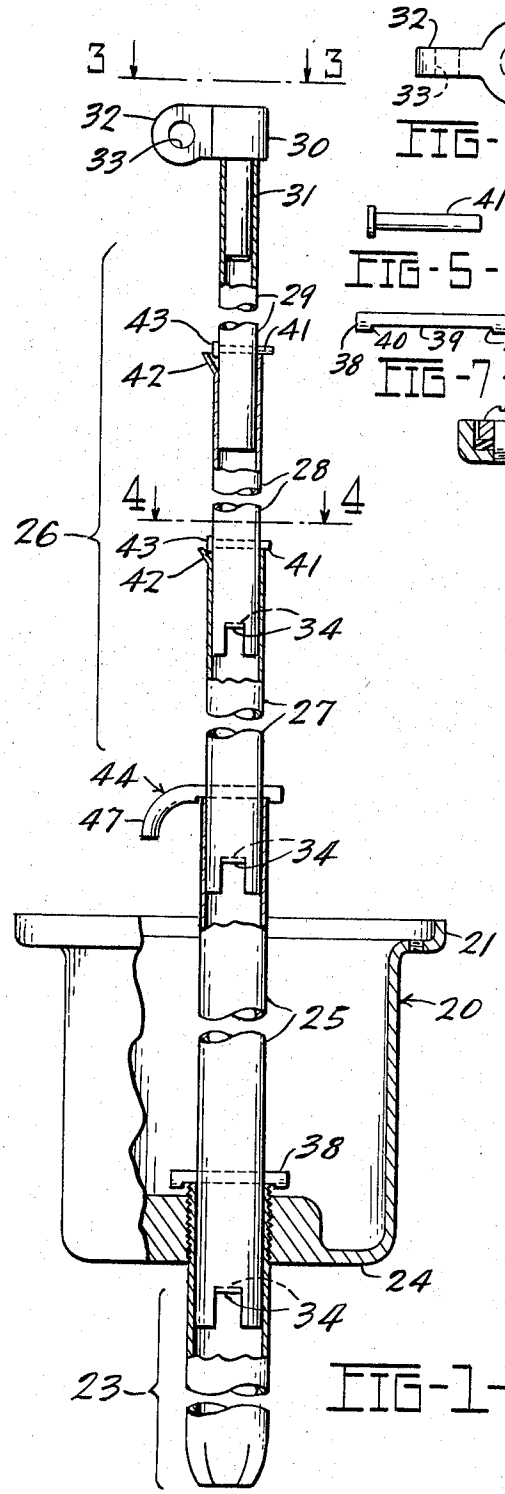

FIG-1-

FIG-3-

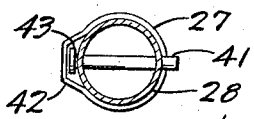

FIG-4-

FIG-5-

FIG-6-

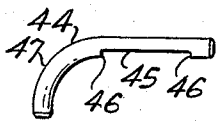

FIG-9-

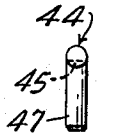

FIG-10

FIG-7-

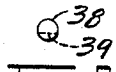

FIG-8-

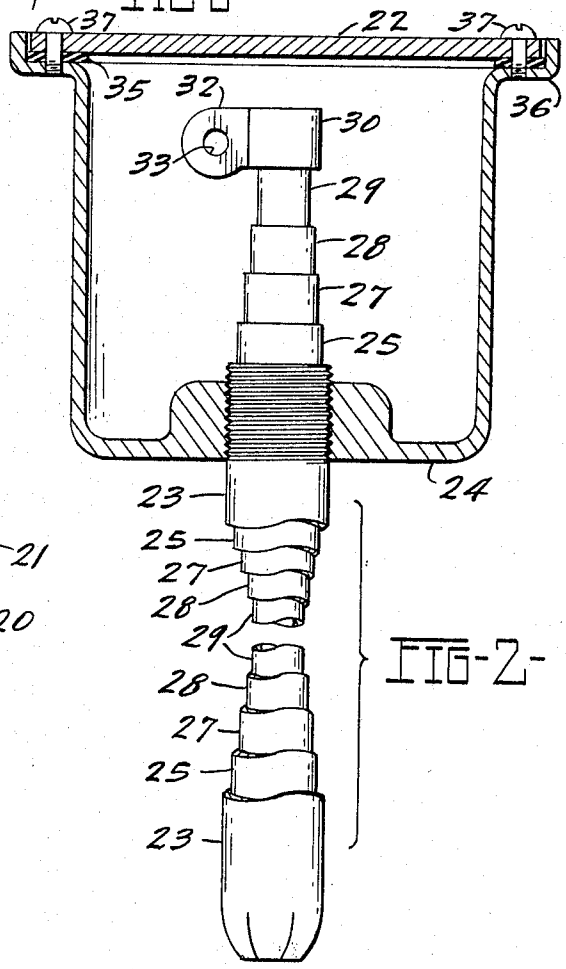

FIG-2-

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TELESCOPIC MAST WITH UNDERGROUND STORAGE

Filed April 13, 1964 2 Sheets-Sheet 2

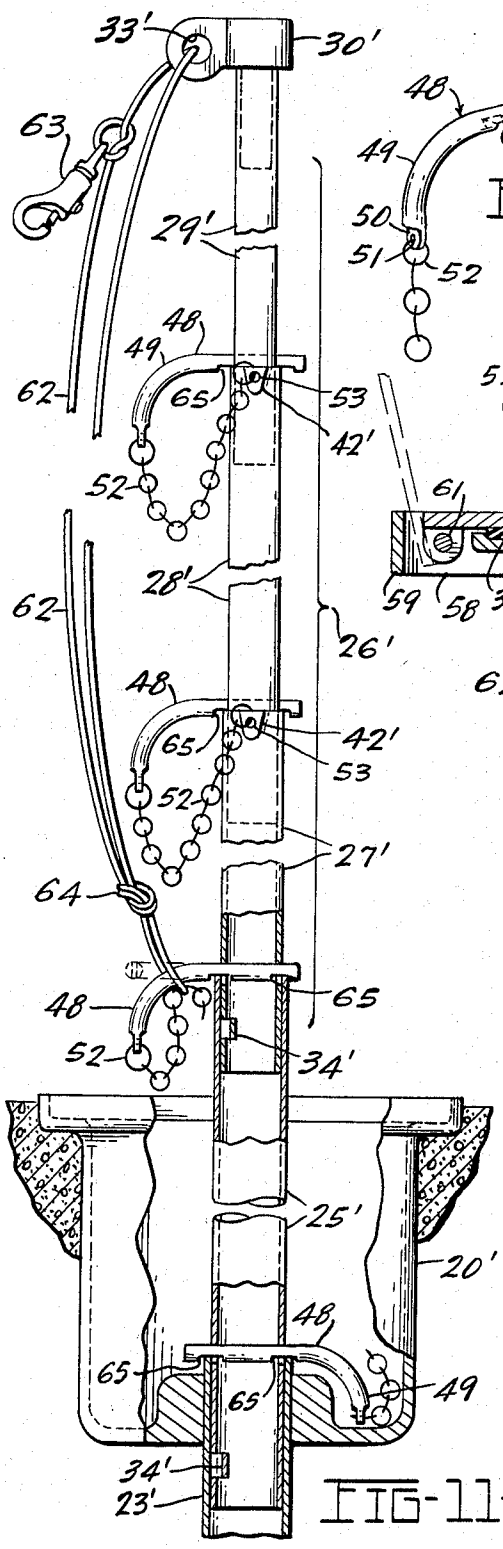

FIG-11-

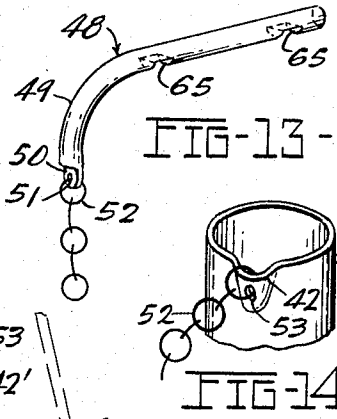

FIG-13-

FIG-14-

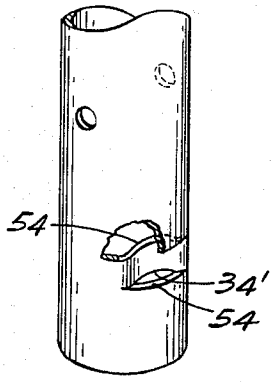

FIG-15-

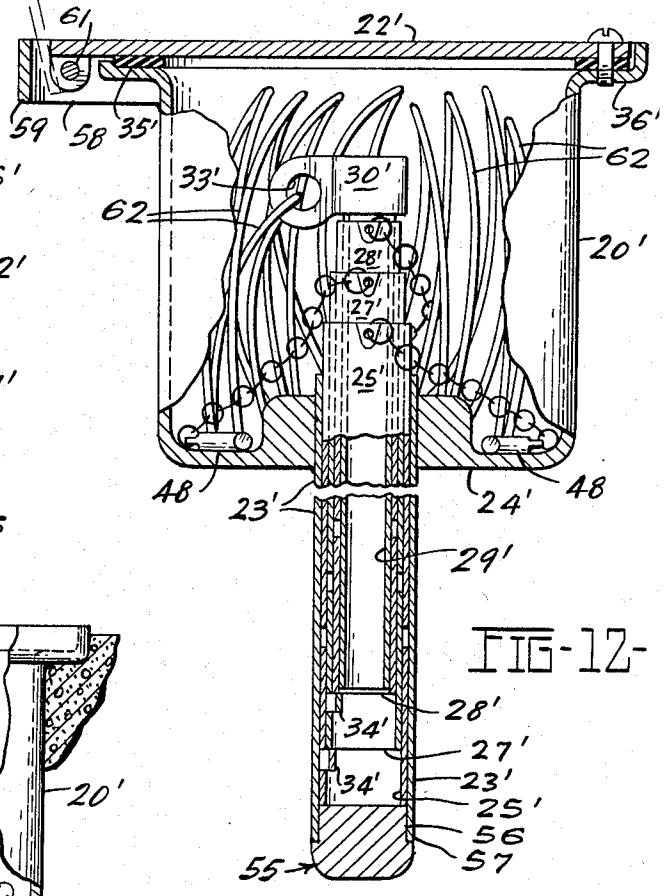

FIG-12-

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Patented Nov. 22, 1966

3,286,682

TELESCOPIC MAST WITH UNDERGROUND STORAGE

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Filed Apr. 13, 1964, Ser. No. 359,349
7 Claims. (Cl. 116—173)

The present application is a continuation-in-part of our copending application, Serial No. 228,369, filed October 4, 1962, now abandoned.

The present invention relates to a telescopic mast with underground storage; and more particularly to a telescopic flag pole, all portions of which, except the flag, can be stored beneath grade.

An object of the present invention is the provision of a new and improved, strong, inexpensive telescopic mast having telescoping sections of a continuous annular cross section to provide maximum strength, and means for holding the sections in the extended position which means comprises pins that extend through a pair of small aligned holes in the inside telescoping member, so that the members will not be appreciably weakened by the means used for locking the sections in their extended position.

Another object of the invention is the provision of a new and improved telescopic mast comprising a plurality of telescoping tubes or members the largest one of which is adapted to be permanently located below grade, and the other members of which are arranged so that any one of the remaining telescoping members can be easily grasped to raise the telescoping member and those contained therein.

A more particular object of the invention is the provision of a telescopic mast of the above described type wherein the second largest tubular member which slides in and out of the permanently fixed largest tubular member can be grasped to raise it and all of the remaining tubular members as a group, the second lowest section can be locked in place to cause the upper end of the remaining sections to be located at a convenient working height, and the remaining members can be sequentially raised to their extended positions starting with the most inwardly positioned member so that all of the pins can be put in locking position when at a convenient working level.

Another object of the invention is the provision of a new and improved telescopic mast wherein each of the telescoping sections are of an identical length, and means are provided which allow any one of the members to be easily grasped and withdrawn from the member in which it is telescoped.

Another object of the present invention is the provision of a new and improved telescopic mast wherein each of the sections are made of identical length and are adapted to be locked in their extended position by the pin which passes through aligned openings in the inner member of each telescoping action, and which pin is connected to the other member of the telescoping connection by means of a non-rigid attaching member, such as a chain, which serves to support the pins in a convenient location when not in their locked positions, and which further act as a handle by means of which the tubular member to which it is attached can be pulled out of the tubular member which slidingly receives the member to which it is attached.

Another object of the present invention is the provision of a new and improved telescopic mast in which each of the sections are of identical length and in which the bottom of one telescoping member is provided with an inwardly extending projection against which the bottom of the telescoping member received therein is adapted to abut to cause the top of the inner member to project out of its receiving member when in a telescoped position.

A still more particular object is the provision of a new and improved telescopic mast having locking pins with recess means therein into which one of the telescoping members is forced by the weight of the section of the mast above the pin to prevent withdrawal of the pin.

A still further object of the invention is the provision of a new and improved telescopic flag pole and a mast of the above described type wherein the halyard is of such a length that its bottom end can be engaged by one of the locking pins, and the locking pin is of an L-shape which is locked when one of its legs is turned downwardly to secure the bottom end of the halyard.

The invention resides in certain constructions and combinations and arrangements of parts, and further objects and advantages of the invention will become apparent to those skilled in the art to which it relates from the following description of several preferred embodiments described with reference to the accompanying drawings forming a part of this specification, and in which:

FIG. 1 is a side view in elevation of a telescopic flag pole in its extended position with portions broken away to better illustrate its construction;

FIG. 2 is a side view in elevation of the telescopic flag pole shown in FIG. 1 in its completely retracted position, certain portions being broken away to better illustrate its construction;

FIG. 3 is a plan view taken from the position indicated by the line 3—3 in FIG. 1;

FIG 4 is a sectional view taken approximately on the line 4—4 of FIG. 1;

FIG. 5 is a side view of one of the locking pins shown in FIG. 1;

FIG. 6 is an end view of the locking pin shown in FIG. 5;

FIG. 7 is a side view of the bottom locking pin shown in FIG. 1;

FIG. 8 is an end view of the locking pin shown in FIG. 7;

FIG. 9 is a side view of the locking pin that is located at the top of the telescoping section which projects above grade;

FIG. 10 is an end view of a locking pin shown in FIG. 9;

FIG. 11 is a side view in elevation, similar to FIG. 1, but showing still another embodiment of the invention;

FIG. 12 is a side view in elevation similar to that of FIG. 2 but showing the flag pole of FIG. 11 in its telescoped position;

FIG. 13 is an isometric view of one of the locking pins shown in FIGS. 11 and 12;

FIG. 14 is a fragmentary, isometric view showing the top of one of the telescoping members shown in FIGS. 11 and 12; and

FIG. 15 is a fragmentary, isometric view showing the bottom end of one of the telescoping members shown in FIGS. 11 and 12.

The telescopic flag pole shown in FIG. 1 generally comprises a cast cup shaped housing **20**, the upper end of which **21** is enlarged to receive a cover **22** which will usually be located at grade. The flag pole shown in FIG. 1 also includes a plurality of telescopically engaging tubular members, the largest one **23** of which has its upper end threaded into the bottom **24** of the cup shaped housing **20**. The bottom end of the tubular member **23** is slotted and bent inwardly to generally close off the lower end of the tubular member **23** and at the same time limit the extent to which the second largest tubular member **25** can be telescoped into the tubular member **23**. The telescopic flag can be provided

with any desired number of tubular sections **26** which will extend above the second largest tubular member **25** to provide any desired height of mast. In the embodiment shown in FIG. 1 the sections **26** comprise three tubular members **27**, **28** and **29**, the lower section **27** of which slides into the section **25**, the section **28** of which slides into the section **27**, and the section **29** of which slides into the section **28**. The upper end of the inner tubular member **29** is closed off by means of a casting **30** having a depending pin **31** inserted into the upper end of the tubular member **29**. The casting **30** has a laterally extending ear **32** having a horizontal hole **33** therethrough through which the halyard for a flag or other flexible tension member can be inserted and attached. All of the tubular sections are of a continuous annular or cross section devoid of any vertical slot or separation so that they will have a maximum of strength.

In order that the tubular members can be locked in their extended positions by inexpensive means which does not weaken the tubular members, the present invention utilizes pins which extend through aligned openings in the inner member of each pair of telescoped members. The openings are round so that stresses will be transferred around their edges without undue stress concentration, and the openings are generally small so that a minimum of metal is removed and the tubular members are not appreciably weakened.

The tubular members **23**, **25** and **27** through **29** are made of sections of aluminum tubing, and this tubing can be purchased with outside diameters and inside diameters which will provide approximately 4½-thousandths of an inch clearance between the respective tubular members. By way of example, the bottom tubular member **23** has an 1¼" O.D. and a wall thickness of .058", so that it provides 4½-thousandths of an inch clearance with respect to tubular member **25** which has an outside diameter of 1⅛". The tubular member **25** also has a wall thickness of .058" so that it provides a sliding clearance of 4½-thousandths of an inch with respect to tubular member **27** which has an outside diameter of 1". The tubular member **27** also has a wall thickness of .058" so that it provides 4½-thousandths of an inch clearance with respect to tubular member **28** which has an outside diameter of ⅞"; and the tubular membe **28** also has a wall thickness of 0.58" so that it provides 4½-thousandths of an inch clearance with respect to the tubular member **29** which has an outside diameter of ¾". The sections of the tubing from which the various tubular members are cut come in standard commercial lengths of 12 feet. In order that there will be no wastage of material, each of the 12 foot lengths are cut into lengths which are even fractions of 12 feet. For convenience, the 12 foot sections are cut into even lengths of 4 feet.

As previously indicated, it is an object of the present invention to provide a structure wherein all of the tubular members, excepting the largest member that is fixed below grade, can be raised either individually or together as a group and locked in place when their upper ends are located at a height that is convenient for a standing person. As previously stated, each of the tubular members **23**, **25**, and **27** through **29** are of the same length. In order that individual tubular members or a group of tubular members can be grasped and raised to the above referred to position wherein further manipulation can be accomplished by a person in standing position, each of the tubular members are caused to project approximately 1" out of the tubular member in which it is slidingly received when the tubular members are in their telescoped position shown in FIG. 2. This is accomplished by means of suitable abutments located adjacent the bottom end of each of the tubular members. The bottom end of the tubular member **23** is swedged inwardly to form an abutment for the tubular member **25**. Each of the tubular members **25**, **27** and **28** have identical projections **34** spaced 1" upwardly from their lower ends so that the lower end of the tubular member which is received in the member having the projection bears against the projection to cause the upper end of the inner member to extend approximately 1" above the upper end of the outer member having the projection.

In the embodiment shown in FIGS. 1 and 2, the projections **34** are formed by providing a pair of parallel vertically extending slots in the bottom end of one of the tubular members and bending the metal between the slots radially inwardly to form the projections **34**. In the retracted telescoped position shown in FIG. 2 therefor, the bottom end of tubular member **25** rests upon the swedged section of the tubular member **23**, the bottom of tubular member **27** rests upon the projection **34** of tubular member **25**, the bottom of tubular section **28** rests upon the projection **34** of tubular member **27**, and the bottom of tubular section **29** rests upon the projection **34** of tubular member **28**. The upper end of each of the tubular members, therefore, project out of their receiving tubular members by a distance of 1", as shown in FIG. 2.

As previously indicated, the telescopic flag pole structure shown in FIGS. 1 and 2, will usually be mounted so that the top of the cover plate **22** will be even with grade. A gasket **35** is positioned between the cover plate **22** and upper flange portion **36** of the cup shaped housing **20** and is sealingly clamped in position by a plurality of machine screws **37**. When it is desired to raise the flag pole structure, the machine screws **37** are loosened and the cover member **22** removed. Thereafter the mast structure is raised by grasping the top of the tubular member **25** to raise it and all of the tubular members contained therein to a raised position. A pair of aligned openings, not shown, are provided through the tubular member **25** approximately 8" up from its bottom end, and when these openings are above the top of the bottom **24** of the cup shaped housing **20**, a pin **38** shown in detail in FIGS. 7 and 8, is started through one of the openings in the tubular section **25**. Thereafter the tubular section **27** is raised upwardly until its bottom end clears the openings in the tubular section **25** and the pin **38** is inserted through the opening in the opposite sidewall of the tubular member **25** with the middle flat **39** of the pin **38** facing downwardly. The tubular member **25** is thereafter allowed to slide downwardly until the middle flat **39** rests upon the upper end of the tubular section **23** to support the tubular members in a position wherein the upper ends are approximately 4 feet above grade. The middle flat **39** does not extend to either opposite end of the pin **38**, so that a pair of oppositely facing shoulders **40** is provided which can abut opposite sides of the top of the tubular member **23** and prevent the inadvertent removal of the pin **38**.

With the upper end of the remaining tubular members at a position approximately 4 feet above grade, the upper tubular member **31** is raised relative to the tubular member **28** until a pair of openings, not shown, approximately 8" above the bottom end of the tubular member **29** appear above the upper edge of the tubular member **28**. Thereafter, the headed pin **41** is inserted through the aligned openings in the tubular member **29** and the tubular section **29** is thereafter allowed to move downwardly until the pin **41** rests upon the top edge of the tubular section **28**. The upper end of the tubular member **28** is deformed outwardly as indicated at **42** to receive the head **43** of the pin **41** and thereby prevent the removal of the pin **41** from the tubular member **29**. Thereafter the tubular member **28** is raised relative to the tubular member **27** until a pair of openings, not shown, approximately 8" above the bottom end of the tubular member **27** appear above the top edge of the tubular member **27** and a pin **41** is inserted through the aligned openings.

The top of the tubular member **27** is deformed in the same manner as was the top edge of the tubular member **28** to prevent inadvertent removal of the pin **41** from the tubular member **28**. The final step in raising the flag pole, shown in FIGS. 1 and 2, is accomplished by elevating the tubular member **27** out of the tubular member **25** until openings, not shown, approximately 8" above the bottom end of the tubular member **27** appear above the top edge of the tubular member **25**. Thereafter an L-shaped pin **44** is inserted through the aligned openings of the tubular member **27** and the tubular member **27** is allowed to slide downwardly until the pin **44** engages the top end of the tubular member **25**. The horizontal leg of the pin **44** has a middle flat **45** that extends less than half-way through the horizontal leg of the L-shaped pin, and which middle flat rests upon the top of the tubular member **25**. The middle flat **45** forms a pair of oppositely facing shoulders **46** which abut the opposite sides of the tubular member **25** when the handle or lateral leg **47** of the pin **44** is turned downwardly. With the mast in its fully extended position the bottom end of a halyard extending through the opening **33** can be secured beneath the L-shaped pin **44** to hold the halyard taut.

The embodiment of flag pole structure shown in FIGS. 11–15 of the drawings is generally similar to that previously described and differs principally therefrom in the manner in which means are provided for grasping and withdrawing the various tubular members from the member in which it is slidingly received. Those portions of the embodiments shown in FIGS. 11 through 15 which are similar to corresponding portions of the embodiment described above are designated by like reference numerals characterized further in that a prime mark is affixed thereto. In the embodiment shown in FIGS. 11–15, L-shaped pins **48** are used for holding the upper three sections **29'**, **28'** and **27'** in their extended positions. The pins **48** have handle portions **49**, the ends of which are milled as at **50** and an opening **51** is drilled therethrough to receive one end of a chain **52**. The other end of the chain **52** is fastened through an opening **53** (best seen in FIG. 14) in the deformed portions **42'**. The L-shaped pins **48**, therefore, are therefor retained by the chains **52** at a convenient location hanging from the upper end of the tubular section to which it is attached by the chain **52** for insertion through the openings of the tubular section which is slidingly received within the section to which the chain is attached. In addition, the chain **52** serves as a convenient handle by means of which one tubular section can be slid out of its receiving tubular member.

In some instances the chain **52** and projections **42'** can be relied upon to provide the stop means by which the telescoping movement of the tubular members into each other is prevented. In the preferred embodiment, however, projections **34'** are provided on the bottom ends of the tubular members **25'** and **27'** to limit the extent to which the tubular members can be telescoped into each other, and the casting **30'** abuts the top end of section **28'** to limit the extent to which section **29'** telescopes into section **28'**. The projection **34'** is formed by a pair of horizontal slits **54** formed adjacent the bottom end of a tubular member, and the portion **34'** between the slits **54** is deformed radially inwardly so that the bottom end of the tubular member which is slidingly received within the tubular member having the projection **34'** rests against the top edge of the projection **34'**. The bottom end of the tubular member **23'** is closed off by a plug **55** having a reduced diameter section **56** which is pressed into the bottom end of the tubular member **23'** and a shoulder **57** which bears against the bottom end of the tubular section **23'**. In the lower position of the mast, the bottom end of the section **25'** bears against the upper end of the reduced diameter section **56** of the plug **55**.

The cup-shaped housing **20'** is generally similar to the housing **20** and differs from the housing **20** in that the bottom tubular member **23** is pressed into the opening in the bottom **24'** and glued in place by an epoxy resin; and also in that the cover member **22'** is hinged to the housing **20'**. As shown in FIG. 12, the left side of the cover member **22'** is cast with a pair of depending ears **58** which extend between the side legs **59** of a U-shaped bracket **60** that is an integral part of the housing **20'**. A pin is pressed through openings (not shown) in the legs **59** and extend through other openings (not shown) in the ears **58**, which openings have sufficient clearance with respect to the pin **61** to allow the ears **58** to turn freely thereon. A halyard **62** which passes through the opening **33'** of the casting **30'** is normally coiled around the upper telescoped ends of the tubular members when the tubular sections of the mast are telescoped into the housing **20'**.

It is intended that the flag pole mast shown in the embodiment of FIGS. 11–15 will be raised in generally the same manner as that described for the embodiment shown in FIGS. 1–10. The chain **52** that is attached to the tubular section **25'** will be grasped to raise the tubular sections **25'**, **27'**, **28'** and **29'**, until the openings adjacent the lower end of the tubular member **25'** are above the top of the tubular section **23'**. Tubular member **27'** is raised slightly until its bottom ends are above the opening in the tubular member **25'** and the pin **48** is thereafter inserted through the openings in the tubular member **25'**.

The halyard **62** is provided with a pair of spring closing hooks **63**, only one of which is shown, adapted to be inserted through eyelets at the top and bottom of one side edge of a flag. The halyard will be adjusted so that the top hook **63** is adjacent the opening **33'** and thereafter the tubular member **29'** will be raised and the L-shaped pin **48** held by the chain connected to the section **28'** is inserted through the openings and rotated so that its leg **49** points downwardly. Thereafter the section **28'** is raised out of the section **27'** and the pin **48** that is attached by the chain **52** to the section **27'** is inserted through the openings in the bottom end of the section **28'** to lock it in place. Finally, the section **27'** is raised out of the tubular member **25'** until the holes adjacent the bottom of the member **27'** are above the top edge of the member **25**, and the pin **48** attached to the member **25'** is inserted through the openings in the bottom of the member **27'**. The length of the halyard **62** is either of the correct length or its length is suitably adjusted by a knot **64** so that its bottom end will be opposite the pin **48** that bears against the top edge of the tubular member **25'**. The pin **48'** that is attached to the tubular member **25'** is inserted with its handle portion **49** extending upwardly through the bottom loop of the halyard **62**, and thereafter the handle **49** of the pin **48** is turned downwardly to secure the bottom of the halyard **62** in place. The L-shaped pin **48** may in some instances have a single milled flat similar to that of the pin **44** provided that it is of sufficient width, but is shown in the drawings as provided with a pair of spaced milled sections **65** that are spaced apart a distance corresponding with the width of the tubing on which the pin is to set.

While the invention has been described in considerable detail, it is not desired to be limited to the particular embodiments shown and described, and it is intended to cover hereby all novel adaptations, modifications, and arrangements thereof which come within the practice of those skilled in the art to which the invention relates.

What we claim is:

1. A telescopic mast comprising: a cup-shaped housing with an open top end and a closed bottom end, a plurality of tubular members telescopically fitted together with the top end of the largest tubular member secured to and extending through the bottom of said cup-shaped housing, a cap secured to the top end of the smallest tubular member, said tubular members intermediate said top and bottom members having one side portion adjacent their top ends bent laterally outwardly, a plurality of non-rigid retaining members one end of each of which are

secured to a respective one of said laterally bent portions of said tubular members, a plurality of generally L-shaped pins respective ones of which are secured to respective ones of said non-rigid retaining members, each of said tubular members which project out of said largest tubular member having aligned openings through opposite sidewalls adjacent the lower ends thereof, the upper portion of said aligned openings acting as abutment surfaces and the upper portions of each of said intermediate tubular members having upwardly facing abutment surfaces opposite which said aligned openings of the tubular member telescoped therein can be positioned, said L-shaped pins having a lateral leg adapted to bear against said upwardly facing abutment surfaces of the tubular member to which the pin is attached and extend through aligned openings of the tubular member which is slidingly received in the tubular member to which the pin is attached, each of said lateral legs of each L-shaped pin having flat bottomed recess means against which said abutment surfaces of one of adjacent telescoping members is adapted to rest when the other leg of the pin projects downwardly, and the lateral leg of each pin having oppositely facing shoulders which abut opposite sides of one of the tubular members when said other leg of the pin projects downwardly.

2. A telescopic mast comprising: a cup-shaped housing with an open top end and a closed bottom end, a plurality of tubular members telescopically fitted together with the top end of the largest tubular member secured to and extending through the bottom of said cup-shaped housing, a cap secured to the top end of the smallest tubular member, each of said tubular members intermediate said top and bottom members having one side portion adjacent their top ends bent laterally outwardly, a plurality of non-rigid retaining members one end of each of which are secured to a respective one of said laterally bent portions of said tubular members, a plurality of generally L-shaped pins respective ones of which are secured to respective ones of said non-rigid retaining members, each of said tubular members which project out of said largest tubular member having aligned openings through opposite sidewalls adjacent the lower ends thereof, the upper portion of said aligned openings acting as abutment surfaces and the upper portions of each of said intermediate tubular members having upwardly facing abutment surfaces opposite which said aligned openings of the tubular member telescoped therein can be positioned, said L-shaped pins having a lateral leg adapted to bear against said upwardly facing abutment surfaces of the tubular member to which the pin is attached and extend through aligned openings of the tubular member which is slidingly received in the tubular member to which the pin is attached, the lateral leg of each L-shaped pin having flat bottomed recess means against which said abutment surfaces of one of adjacent telescoping members is adapted to rest when the other leg of the pin projects downwardly, the lateral leg of each pin having oppositely facing shoulders which abut opposite sides of one of the tubular members when said other leg of the pin projects downwardly, a flexible loop member one end of which is attached to said cap, said loop being of such length as to be taut when the other end of said loop member is positioned beneath a lateral leg of one of said pins and the other leg of said pin is turned downwardly.

3. A telescopic mast comprising: a cup-shaped housing with an open top end and a closed bottom end, a plurality of tubular members telescopically fitted together with the top end of the largest tubular member secured to and extending through the bottom of said cup-shaped housing, a cap secured to the top end of the smallest tubular member, each of said tubular members intermediate said top and bottom members being of equal length and having one side portion adjacent their top ends bent laterally outwardly and having a projection adjacent its bottom end bent inwardly, a plurality of non-rigid retaining members one end of each of which are secured to a respective one of said laterally outwardly bent portions of said tubular members, a plurality of generally L-shaped pins respective ones of which are secured to respective ones of said non-rigid retaining members, each of said tubular members which project out of said largest tubular member having aligned openings through opposite sidewalls adjacent the lower ends thereof the upper portion of said aligned openings acting as abutment surfaces and the upper portions of each of said intermediate tubular members having upwardly facing abutment surfaces opposite which said aligned openings of the tubular member telescoped therein can be positioned, said L-shaped pins having a lateral leg adapted to bear against said upwardly facing abutment surfaces of the tubular member to which the pin is attached and extend through aligned openings of the tubular member which is slidingly received in the tubular member to which the pin is attached, each of said lateral legs of each L-shaped pin having flat bottomed recess means against which said abutment surfaces of one of adjacent telescoping members is adapted to rest when the other leg of the pin projects downwardly, and the lateral leg of each pin having oppositely facing shoulders which abut opposite sides of one of the tubular members to prevent withdrawal of the pin when said other leg of the pin projects downwardly.

4. A telescopic mast comprising: a cup-shaped housing with an open top end and a closed bottom end, a plurality of tubular members telescopically fitted together with the top end of the largest tubular member secured to and extending through the bottom of said cup-shaped housing, tubular members between said top and bottom members being of equal length and having projections adjacent their bottom ends bent inwardly, each of said tubular members which project out of said largest tubular member having aligned openings through opposite sidewalls adjacent the lower ends thereof, and a plurality of pins respective ones of which are adapted to extend through aligned openings of a respective tubular member and abut the top end of the tubular member in which the respective tubular member is slidingly received.

5. A telescopic mast comprising: a cup-shaped housing with an open top end and a closed bottom end, a plurality of tubular members telescopically fitted together with the top end of the largest tubular member secured to and extending through the bottom of said cup-shaped housing, tubular members between said top and bottom members being of equal length and having projections adjacent their bottom ends bent inwardly, each of said tubular members which project out of said largest tubular member having aligned openings through opposite sidewalls adjacent the lower ends thereof, a plurality of pins respective ones of which are adapted to extend through aligned openings of a respective tubular member and abut the top end of the tubular member in which the respective tubular member is slidingly received, said projections being formed by a pair of lateral slots in a tubular member with the metal between said slots bent inwardly.

6. A telescopic mast comprising: a cup-shaped housing with an open top end and a closed bottom end, a plurality of tubular members telescopically fitted together with the top end of the largest tubular member secured to and extending through the bottom of said cup-shaped housing, a cap secured to the top end of the smallest tubular member, tubular members between said top and bottom members being of equal length and having projections adjacent their bottom ends bent inwardly, each of said tubular members which project out of said largest tubular member having aligned openings through opposite sidewalls adjacent the lower ends thereof, a plurality of pins respective ones of which are adapted to extend through aligned openings of a respective tubular member and abut the top end of the tubular member in which the respective tubular member is slidingly received, the pin which bears against the top of the tube which projects out of the larg-

est tube being L-shaped, and a flexible loop member one end of which is attached to said cap, said loop being of such length as to be taut and retained when the other end of said loop member is positioned beneath the leg which projects through said tubular member and its other leg is turned downwardly.

7. A mast support comprising: a tube having a pair of horizontal slits in its sidewall adjacent the bottom of the

tube, respective ones of said slits being above and below a tab whose ends are integral with the tube, and said tab being bent radially inwardly to provide a stop limiting movement toward said bottom of the tube of a member inserted into said tube.

No references cited.

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