Sept. 4, 1945. C. G. CALHOUN 2,384,279

EXTENSION POLE

Filed Sept. 27, 1943 3 Sheets-Sheet 1

Fig. 1.

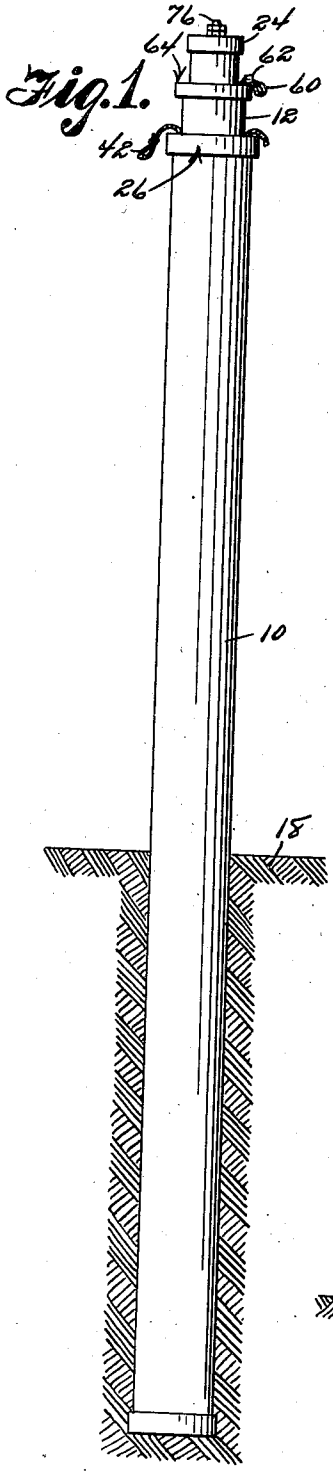


Fig. 2.

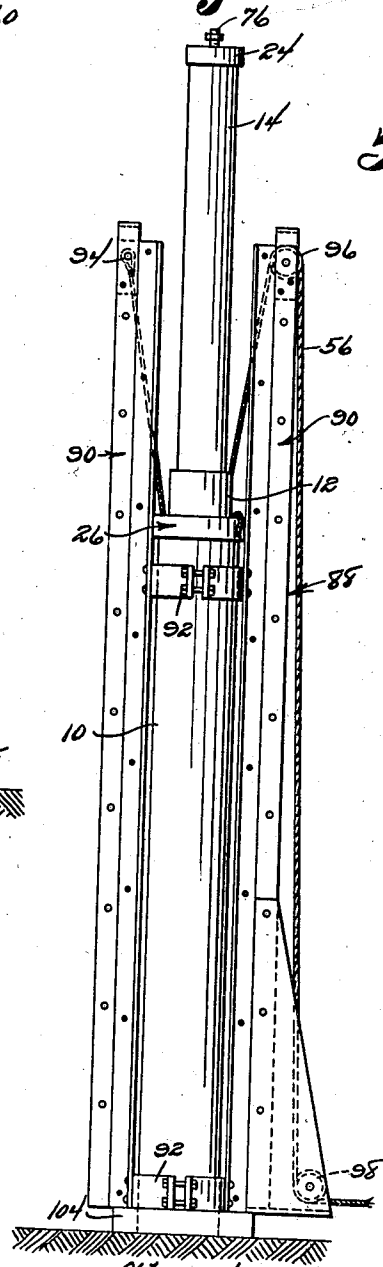
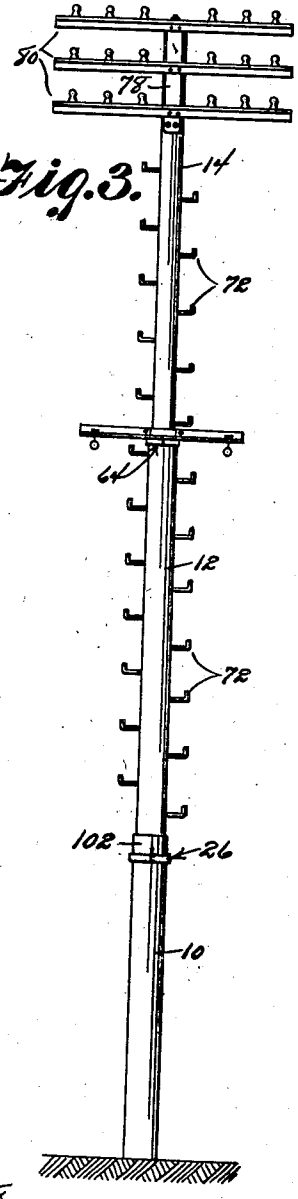


Fig. 3.



Charles G. Calhoun INVENTOR.

BY Victor J. Evans & Co.

ATTORNEYS

Sept. 4, 1945. C. G. CALHOUN 2,384,279

EXTENSION POLE

Filed Sept. 27, 1943 3 Sheets-Sheet 2

Fig. 8.

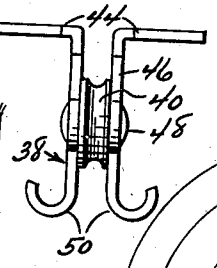


Fig. 4.

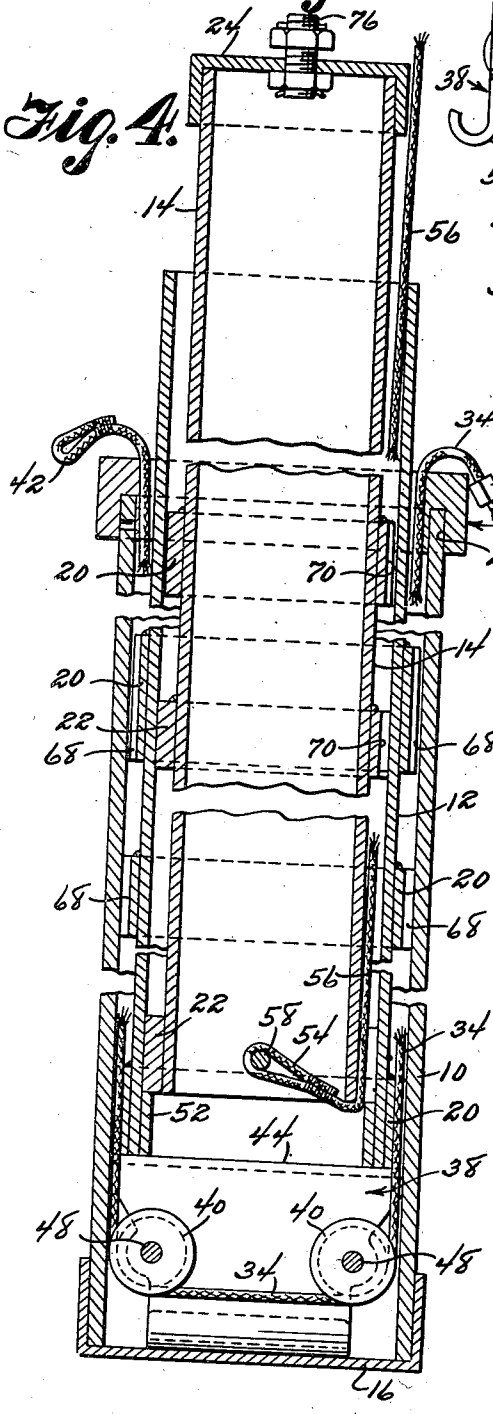


Fig. 5.

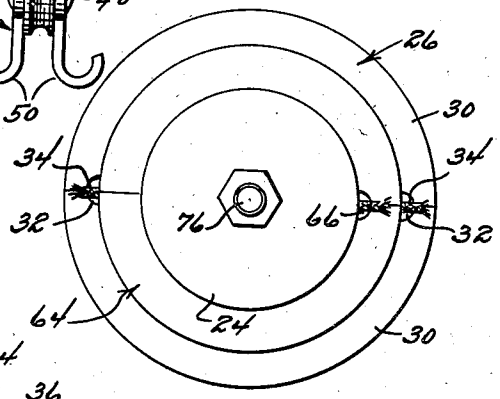


Fig. 6.

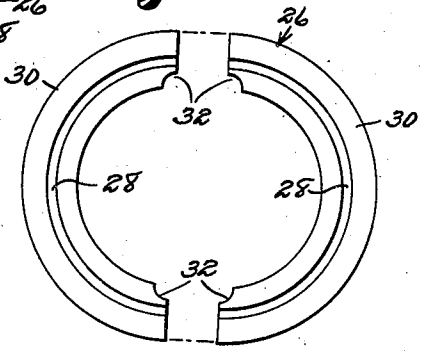
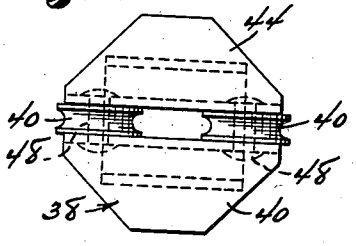


Fig. 7.



Charles G. Calhoun

INVENTOR.

BY Victor J. Evans & Co.

ATTORNEYS

Sept. 4, 1945. C. G. CALHOUN 2,384,279

EXTENSION POLE

Filed Sept. 27, 1943 3 Sheets-Sheet 3

Fig. 9.

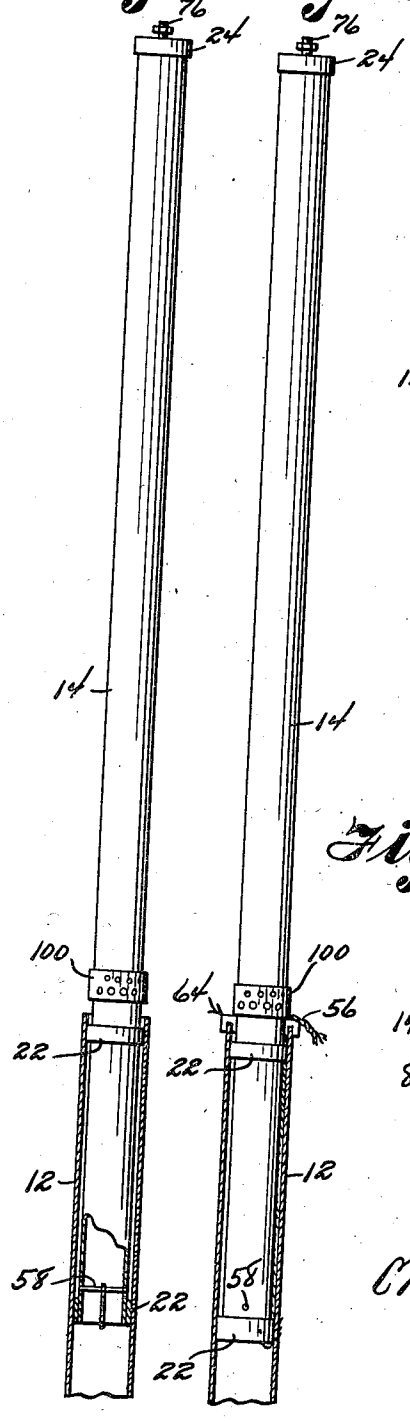


Fig. 10.

Fig. 11.

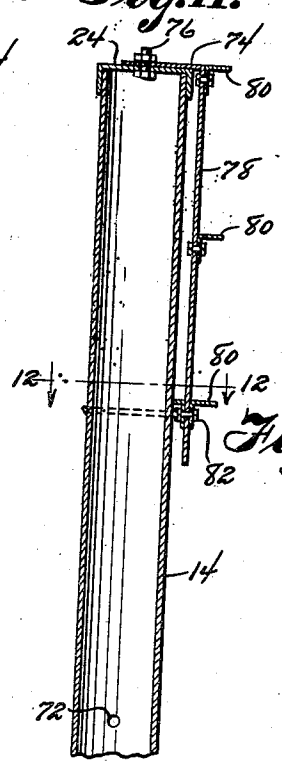


Fig. 12.

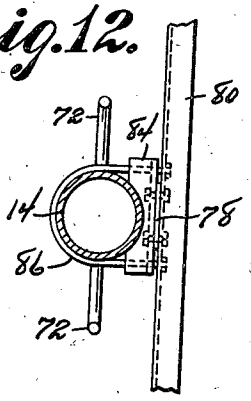


Fig. 13.

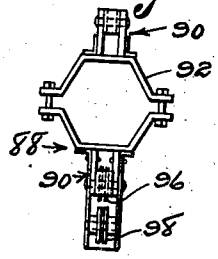
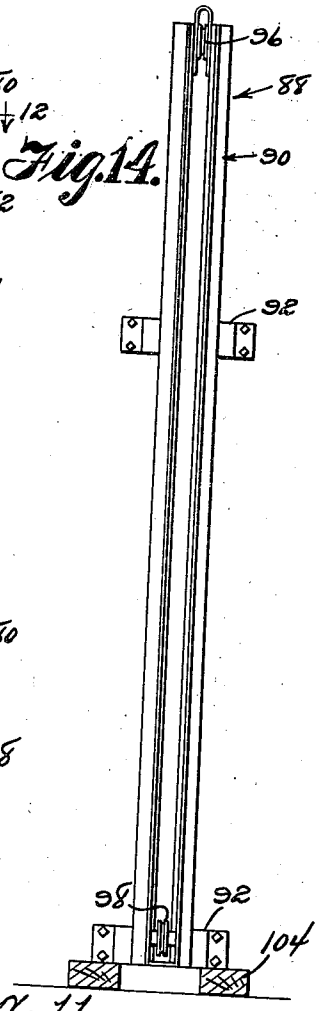


Fig. 14.



Charles G. Calhoun INVENTOR.

BY Victor J. Evans & Co.

ATTORNEYS

Patented Sept. 4, 1945 2,384,279

UNITED STATES PATENT OFFICE

2,384,279

EXTENSION POLE

Charles G. Calhoun, Pittsburgh, Pa.

Application September 27, 1943, Serial No. 503,992

3 Claims. (Cl. 189—26)

My invention relates to supports for telegraph and telephone wires, power lines and the like, and has among its objects and advantages the provision of an improved telescopic pole designed to facilitate handling because of its short length, and in which novel means are incorporated for extending the pole to a predetermined height after it has been set up.

In the accompanying drawings:

Figure 1 is a view illustrating the pole set in its foundation and in its normally shortest position.

Figure 2 is a similar view illustrating a cable jack associated with the pole for extending the sections thereof.

Figure 3 is a view of the extended pole illustrating the cross arms attached thereto.

Figure 4 is an enlarged fragmentary and sectional view of the pole structure in its collapsed condition.

Figure 5 is a top end view of the pole.

Figure 6 is a bottom plan view of two collar sections.

Figure 7 is a face view of a sheave support.

Figure 8 is an end view of the sheave support.

Figure 9 is a fragmentary sectional view illustrating a latch collar for restraining pole sections from relative axial movement when in their extended positions.

Figure 10 is a similar view illustrating one pole at rest with respect to the next lowermost pole.

Figure 11 is a sectional view of the upper end of the top pole section illustrating a cross arm support.

Figure 12 is a sectional view taken along the line 12—12 of Figure 11.

Figure 13 is a top view of the cable jack, and Figure 14 is a side view.

In the embodiment of the invention selected for illustration, I make use of three iron tubes 10, 12 and 14. A cap 16 is attached to the lower end of the tube 10, the latter being arranged upright in the earth or foundation 18, as in Figure 1. Collars 20 are welded to the exterior face of the tube 12 to slidably guide the latter inside the tube 10. Similar collars 22 are welded to the exterior face of the tube 14 for slidably guiding the latter inside the tube 12. Both tubes 10 and 12 are open at their upper ends, but a cap 24 is attached to the upper end of the tube 14.

To the upper end of the tube 10 is mounted a split collar 26 having a groove 28 for receiving an end margin of the tube 10. In Figures 5 and 6, the sections 30 of the collar 26 are recessed at 32 at diametrically opposite points to receive a lifting cable 34. One end of the cable 34 is provided with a body 36 engageable with the upper face of the collar 26 when a pull is exerted on the cable. Sufficient space is provided between the tubes 10 and 12 to loosely accommodate the downwardly extending run of the cable 34.

At the bottom of the tube 10 is located a sheave support 38 provided with two sheaves 40 about which the cable 34 passes to run upwardly inside the tube 10 diametrically opposite the downwardly extending run thereof. The end of the cable opposite the body 36 extends to a position outside the tube 10 and is provided with a loop 42 for connection with the hoisting facilities.

In Figure 4, the sheave support 38 comprises a rest for the tube 12 when in its lower position. This support includes two plates 44 lying in a common horizontal plane and provided with right angular and downwardly extending walls 46 spaced to accommodate the sheaves 40 therebetween. The walls 46 support shafts 48 upon which the sheaves 40 are rotatably mounted and the lower ends of the walls 46 are bent upwardly at 50 to provide gentle curvatures resting on the cap 16.

An annular collar 52 is welded inside the lower end of the tube 12 to constitute a rest for the lower collar 22 attached to the tube 14. The loop 54 of a lifting cable 56 is attached to the lower end of the tube 10. This cable extends upwardly between the tubes 12 and 14 and to a position above the upper end of the tube 12. This end of the cable is looped at 60 and is provided with a body 62 engageable with the collar 64 attached to the upper end of the tube 12 and corresponding to the collar 26, with the exception that one recess 66 only is employed.

All the collars 20 are grooved at 68 to provide clearance for the cable 34. The collars 22 are similarly grooved at 70 to provide clearance for the cable 56.

Steps 72 may be attached to the tubes 12 and 14 when arranged in their extended positions. The steps 72 may be threaded into bores in their respective tubes.

To the cap 24 is bolted a plate 74, as at 76, provided with a downwardly extending panel strip 78 to which are bolted angle cross arms 80, as at 82. An angle 84 is attached to the panel strip 78 near its lower end for engagement with the tube 14, and a U-bolt 86 encircles this tube and extends through the angle 84, the panel strip 78 and the lowermost cross arm 80 to secure the parts into a

unitary structure and to tie the lower end of the panel strip firmly to the tube 14.

In operation, the pole is transported to the job in a collapsed condition and is set up in the manner of Figure 1. It is preferable to erect the pole in its collapsed condition, since the shorter tube structure is considerably easier to bring to a vertical position. To extend the tube sections, a lifting jack 88 is employed, see Figure 2. This jack comprises two angle uprights 90 firmly attached to the tube 10 by clamps 92. One of the uprights is provided with a cross pin 94 for insertion through the loop 42 on the cable 34. The other upright is provided with a top sheave 96 and a bottom sheave 98. The cable 56 is first passed around the sheaves 96 and 98 to elevate the tube 14 to the position of Figure 9 after which a collar 100 is welded to the tube 14 to engage the collar 64 when lowered to the position of Figure 10. With the tube 14 secured in its extended position of Figure 10, the cable 34 is passed around the sheaves 96 and 98 for elevating the tube 12 to its extended position, after which a collar 102 is welded to the tube 12 for engagement with the collar 26, see Figure 3. Both cables 34 and 56 have sufficient slack for convenient coaction with the sheaves 96 and 98, as well as the pin 94. After extension of both tubes, both cables 34 and 56 may be fed back into their respective tubes to lie housed therein, with the bodies 36 and 62, together with the loop 42, remaining accessible from positions exteriorly of the tubes. The jack 88 is removed from the pole for use in connection with the next pole to be set up. A foundation 104 may be employed for the jack 88.

Without further elaboration, the foregoing will so fully illustrate my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. An extension pole of the type described comprising first, second and third telescopically related sections, said second tube being of smaller diameter than the first tube to provide a space therebetween and said third tube being of smaller diameter than said second tube to provide a space therebetween, a collar on said first tube having recesses, a cable looped inside said first tube and extending through said recesses, sheave means at the bottom end of the first tube for supporting said cable and constituting a support for the second section, a second collar on said second tube having a recess, a second cable secured to the lower end of said third tube and extending upwardly through the recess in said second collar, means on said second tube slidably engaging the first tube to guide the second tube, means on the third tube slidably engaging said second tube to guide the third tube, said sheave means including two sheaves and a bracket supporting the sheaves, and a cap on the lower end of the first tube supporting the sheave means.

2. The invention described in claim 1, said second tube being adapted to rest on said sheave means, and means on said second and third tubes for supporting the third tube in its collapsed position.

3. The device as defined in claim 1, wherein the sheave means at the bottom of the first tube includes two plates lying in a common horizontal plane and provided with downwardly extending walls between which the sheave is supported, the lower ends of the walls bent outwardly and upwardly to provide a gentle curvature for supporting the walls and sheave.

CHARLES G. CALHOUN.