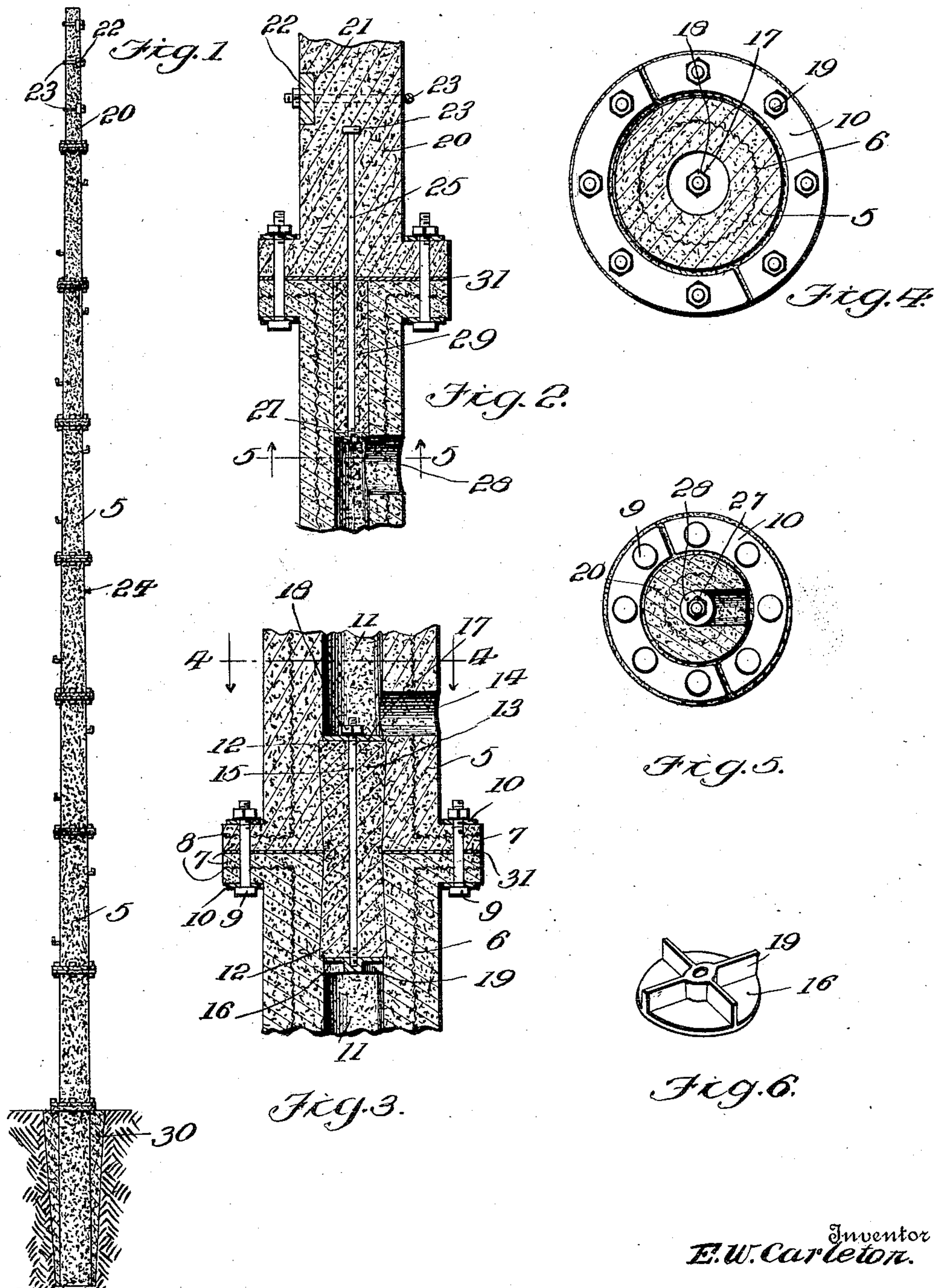


E. W. CARLETON.
COMBINATION LOCK JOINT OR DEVICE.
APPLICATION FILED MAY 27, 1908.

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UNITED STATES PATENT OFFICE.

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COMBINATION LOCK JOINT OR DEVICE.

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To all whom it may concern:

Be it known that I, ERNEST WILLIAM CARLETON, a citizen of the United States, residing at No. 1404 Red River street, in the city of Austin, county of Travis, and State of Texas, have invented a new and useful Combination Lock Joint or Device for Sectional Poles, of which the following is a specification.

This invention relates to sectional poles and method of uniting the sections thereof.

The object of the invention is to provide a pole, the construction of which is such that the tendency of the pole to bend or buckle is reduced to a minimum.

A further object is to provide a pole capable of being readily lengthened or shortened and which will effectually withstand the deleterious action of the elements for an indefinite period.

A further object is to provide a pole including a plurality of sections having seating recesses formed in the abutting ends thereof for the reception of a plastic core, means being provided for compressing the core while still green or in a plastic state, thereby to fill the seating recesses and thus effectually lock the pole sections in assembled position.

A further object is to provide means whereby the plastic material constituting the core may be readily introduced within the pole sections, and the compression means adjusted to effect the formation of a mortar joint.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation of a sectional pole constructed in accordance with my invention; Fig. 2 is a detail vertical sectional view, showing the manner of connecting the upper solid section of the pole to the adjacent hollow section; Fig. 3 is a similar view,

showing the manner of connecting the intermediate sections of the pole; Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 3 and looking in the direction of the arrow; Fig. 5 is a similar view taken on the line 5—5 of Fig. 4 and looking in the direction of the arrow; Fig. 6 is a detail perspective view of the disk or cap detached.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved pole forming the subject matter of the present invention comprises a plurality of superposed sections 5 preferably cylindrical in shape, as shown, and tapered in the direction of their length from the bottom to the top of the pole. The sections 5 may be formed of cement, porcelain, glass, metal or similar material, but are preferably made of concrete, molded into the proper shape, each section having a reinforcing core 6 embedded therein and provided at its opposite ends with laterally extending flanges 7 which abut against corresponding flanges formed on an adjacent section. The opposite ends of the core 6 are preferably extended laterally at 8 to reinforce the flanges 7, said flanges being pierced by vertically alined openings for the reception of bolts or similar securing devices 9, there being suitable plates or washers 10 interposed between the opposite ends of the bolts and the flanges 7 to assist in strengthening the latter.

Each pole section 5 is provided with a vertically disposed bore 11 which registers with the bore of an adjacent section when said sections are united, thus to form in effect a hollow structure. The walls of the bore 11 of each section at the opposite ends thereof are provided with wedge-shaped seating recesses 12 for the reception of a plastic core or filling 13 so as to form a mortar joint or lock at the junction of the several pole sections and thus hold said sections in assembled position. Each pole section 5 is provided with a laterally extending opening 14 intersecting the bore 11 and opening through one side of the section to permit the introduction of the plastic material constituting the filling or core 13.

Extending through the core 13 is a vertically disposed rod 15, one end of which is secured in any suitable manner to an end piece or disk 16, while the other end thereof

is threaded and extends through a cap or washer 17 for engagement with a clamping nut 18, so that by rotating said nut, the cap 17 will compress the plastic material constituting the core 13 and thus force said material into the seating recesses 12. The openings 14 also form a convenient means whereby the operator may insert his hand or a suitable tool for the purpose of adjusting the nuts 18 to effect the compression of the material constituting the core.

The lower face of the disk 16 is formed with radiating ribs 19, the outer ends of which bear against the interior walls of the bore 11 so as to center the disk within said bore and also to assist in retaining said disk in position on the adjacent pole section when introducing the plastic material constituting the core 13.

The upper section 20 of the pole is preferably solid and provided with spaced recesses 21 for the reception of cross arms 22 when the pole is used for supporting telegraph and telephone wires, said arms 22 being retained in position on the upper section 20 by clips or other clamping means indicated at 23. When the pole is used for supporting overhead electric conductors, the several pole sections are also provided with foot rests or steps 24, which latter are either embedded in the concrete during the molding operation, or subsequently attached to the pole sections in any suitable manner.

The upper solid section 20 of the pole is secured to the adjacent hollow section 5 by means of a bolt or rod 25, one end of which is provided with a terminal head 26 embedded in the concrete, while the other end thereof extends within the bore 11 of the section 5 and is threaded for engagement with a nut 27. A washer or disk 28 bears against the upper face of the nut 27 and serves to prevent accidental displacement of the plastic material or core 29, as best shown in Fig. 2 of the drawings.

In erecting a pole, the lower section thereof is embedded in the ground and surrounded with grouting 30. The disks 16 carrying the rods 15 are then inserted in one end of each section and said sections assembled and fastened together by the bolts 9, a layer of cement or other adhesive material 31 being applied to the inner faces of the sections prior to uniting the same.

The plastic material constituting the core is then introduced through the openings 14 and the caps or washers 17 placed in position in the top thereof, after which the nuts 18 are adjusted by inserting a suitable tool through the openings 14 in the manner before stated, thus compressing the material constituting the core and forcing said material within the seating recesses 12 while said core is in a green or plastic state.

After a sufficient number of sections have

been added to produce a pole of the desired height, the top section is placed in position on the pole with the lower end of the rod 25 inserted in the adjacent core 29, the clamping nut 28 being subsequently adjusted to compress the material 29 so as to secure the top section in position on the adjacent section.

When the pole sections are made of metal, the cores 13 and 29, instead of being formed of plastic material, will be preferably formed of zinc or a compound of zinc and another metal. After the plastic cores have been placed at the junction of the pole sections, the openings formed in said pole sections above the cores, are preferably filled with cement or similar material so as to present a smooth, uninterrupted exterior surface.

The device may be used as a telegraph or telephone pole, or as a pillar, column, fence post or the like.

Having thus described the invention, what is claimed as new is:

1. A pole including a plurality of hollow superposed sections, a plastic bonding core disposed at the junction of adjacent sections, a disk bearing against one end of the core, a threaded rod secured to the disk and extending through the core, a cap engaging the opposite end of the core, and a nut engaging the threaded end of the rod and bearing against said cap, some of said sections having means whereby a tool may be inserted therein to rotate the nut, thereby to compress the material constituting the core.

2. A pole including a plurality of superposed sections having interengaging flanges and provided with substantially wedge-shaped seating recesses, fastening devices extending through said flanges, a disk arranged in each section, a bonding core disposed at the junction of adjacent sections, a rod secured to the disk and extending through the core to effect the compression of the material constituting the core, said sections being provided with means to permit the insertion of said core.

3. A pole including a plurality of hollow superposed sections having their opposite ends provided with flanges, there being a substantially wedge-shaped seating recess formed in one end of each section, fastening devices piercing the flanges, a bonding core formed of plastic material disposed at the junction of adjacent sections and gradually increasing in size from the center thereof to the opposite ends of the bonding core, means extending longitudinally through said core to effect the compression of the core, and an opening formed in each pole section above the core to permit the insertion thereof.

4. A pole formed of a plurality of sections, one of which is solid and the others each provided with a longitudinal bore, the

opposite ends of said hollow sections being provided with substantially wedge-shaped seating recesses, a plastic bonding core disposed at the junction of the hollow sections, there being a transverse opening formed in each hollow section at the bonding core to permit the insertion thereof, and means for effecting the compression of the material constituting each core.

5. The combination of pole sections having substantially wedge-shaped seating recesses in adjacent ends thereof, of cores of plastic material seated in said recesses and spanning adjacent sections at the junction thereof only, means independent of the pole sections for compressing the material comprising each core after said material has been introduced within the recesses, some of said sections having means whereby the compression means may be conveniently reached.

6. A pole including superposed hollow sections having substantially wedge-shaped recesses formed in their opposite ends, bonding cores formed of plastic material filling said recesses at the junction of adjacent sec-

tions only and each gradually increasing in size from the center of the core to the opposite ends thereof, means independent of the pole sections and extending longitudinally through each core to effect the compression of said core, there being an opening formed in each section above the core to permit the insertion of the latter.

7. A pole formed of a plurality of sections, each provided with a longitudinal bore, the opposite ends of said hollow sections being provided with substantially wedge-shaped seating recesses, a plastic bonding core disposed at the junction of the hollow sections, there being a transverse opening formed in each hollow section at the bonding core to permit the insertion of said core through the side walls thereof, and means independent of the sections for effecting the compression of the material constituting each core after the material has been introduced within said sections and while the material is still green.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."