(No Model.)

2 Sheets—Sheet 1.

C. C. PRATT.

LAND ANCHOR.

No. 354,342. Patented Dec. 14, 1886.

Fig 1.

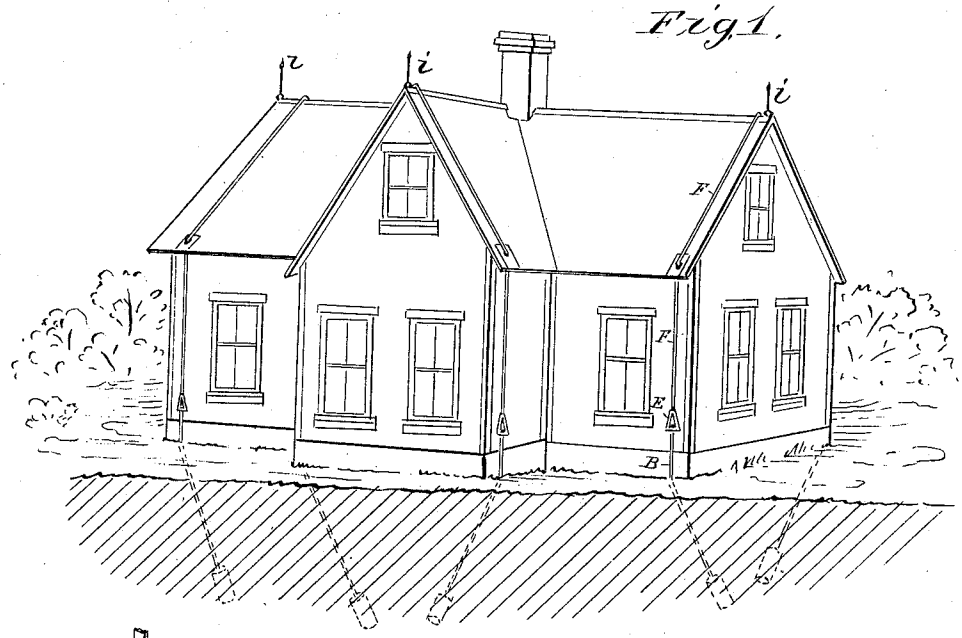


Fig 5

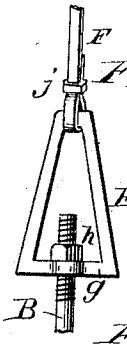


Fig 3

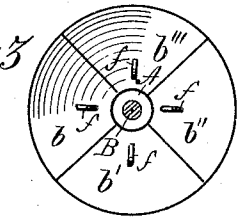


Fig 2

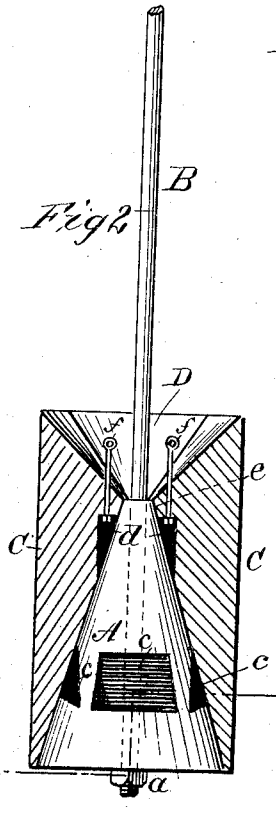


Fig 6

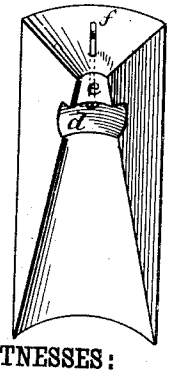
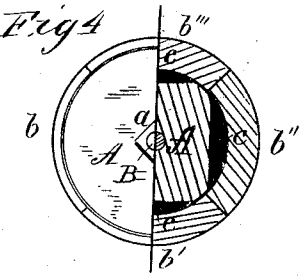


Fig 4



WITNESSES:

J. D. Sanford

C. Sedgwick

INVENTOR:

C. C. Pratt

BY Munn & Co

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

C. C. PRATT.

LAND ANCHOR.

No. 354,342.

Patented Dec. 14, 1886.

Fig. 7.

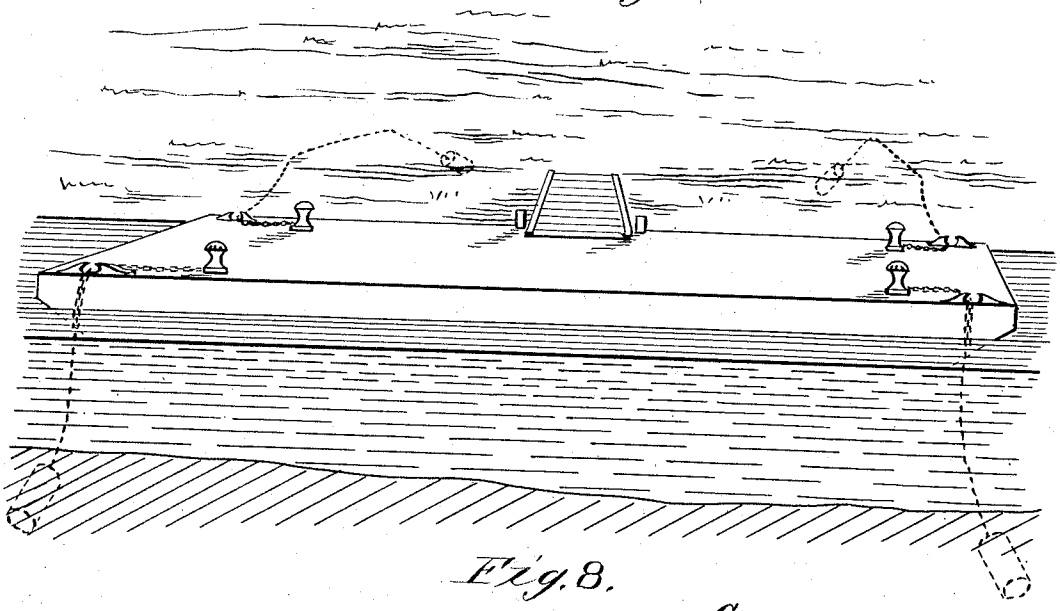
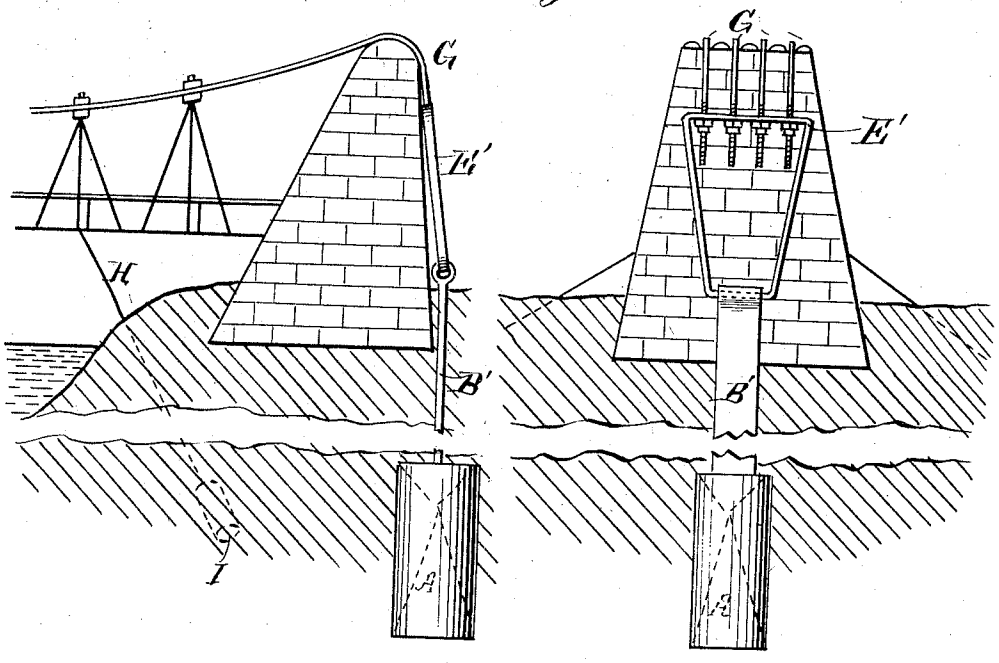


Fig. 8.



WITNESSES:

J. D. Garfield

C. Sedgwick

INVENTOR:

C. C. Pratt

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CYRUS C. PRATT, OF LINCOLN, KANSAS.

LAND-ANCHOR.

SPECIFICATION forming part of Letters Patent No. 354,342, dated December 14, 1886.

Application filed December 11, 1885. Serial No. 185,387. (No model.)

To all whom it may concern:

Be it known that I, CYRUS C. PRATT, of Lincoln, in the county of Lincoln and State of Kansas, have invented a new and useful Improvement in Land-Anchors, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a perspective view of a building, showing the application of my improved land-anchor. Fig. 2 is a side elevation, partly in section. Fig. 3 is a plan view. Fig. 4 is an inverted view, partly in section, taken on line *x x* in Fig. 2. Fig. 5 is a detailed view of the tightening device. Fig. 6 is a detailed view of one of the sections of the anchor. Fig. 7 shows the application of my improved anchor to wharf-boats, and Fig. 8 shows a side and end view of a part of a bridge to which my improvement has been applied.

Similar letters of reference indicate corresponding parts in the figures of the drawings.

The object of my invention is to provide a simple, reliable, and easily-applied anchor for retaining buildings on their foundation in countries subject to tornadoes, to protect such buildings from lightning, and also to provide an effective anchor for bridges, for wharf boats, and other uses.

My invention consists in an expansible anchor adapted to be inserted in a cylindrical hole bored in the earth, and arranged to expand when the tie or rod with which it is connected is drawn.

My invention also consists in the peculiar construction and arrangement of parts, as hereinafter fully described, and pointed out in the claims.

A cone, A, of iron or other suitable material having sufficient strength to resist the lateral pressure to which it may be subjected, is bored axially to receive a rod, B, which is threaded at its lower end and provided with a nut, *a*. Surrounding the cone A there is a cylinder, C, in the present case formed of four sections, *b*, *b'*, *b''*, and *b'''*, which are entirely disconnected from each other. The cylinder C is bored conically and fitted to the cone A, and its upper end has a conical cavity, D, which gives it a firm hold upon the earth, in which the anchor is buried, and also assists the cone A in expanding the anchor, in a manner presently to be described. Notches *c* are formed in the sides of the cone A, near the lower and larger end thereof, and opposite each section of the cylinder C, and in the inner surface of each section of the cylinder C, near the upper end of the cylinder, is made a notch, *d*, which forms a hook, *e*.

For convenience in placing the anchor in the hole bored for its reception and removing it therefrom preparatory to permanently fixing it in the earth, each section of the cylinder C is provided with an eyebolt, *f*, whose lower end extends into the notch *d* and is provided with a nut. The upper end of the rod B is threaded and inserted in the cross-bar *g* of a stirrup, E, and a nut, *h*, is placed upon the rod B in the stirrup E and rests upon the cross-bar *g*. The upper end of the stirrup E receives a flat strap, F, of steel or iron or other suitable material, which is bent around the upper end of the stirrup, and is received in a clamp, *j*, which surrounds the main portion of the strap and the extremity thereof, which is bent upward after being bent around the stirrup E. The strap F extends over the roof of a building or across the beams of a bridge, and is connected with a similar stirrup at the opposite end.

My improved anchor is buried at a suitable depth in the earth by boring a hole in the earth of about the same diameter as the anchor, by means of an ordinary post-hole augur, then inserting the anchor in the hole and tamping the earth around it, so as to retain it securely against upward pressure. The straps F are rendered taut by turning the nuts *h* on the ends of the rods B. When the straps F are put under extraordinary tension, the rods B will be drawn upward, and by the action of the inclined surface of the cone A upon the inclined surfaces of the sections of the cylinder C the cylinder will be expanded laterally against the solid earth wall by which it is surrounded, and the sections of the cylinder will be prevented from being withdrawn from the earth by the engagement of the upper ends of the sections with the earth tamped in the hole above the anchor. The greater the upward pull upon the rod B the greater will be the lateral expansion of the anchor, and in

consequence the sections of the cylinder will engage a greater area of earth, and the resistance to upward pressure will thus be very rapidly and effectively increased; but should the expansion of the anchor proceed so far as to bring the hooks *e* into engagement with the notches *c* in the sides of the cone A, then no further expansion will take place, and the sections *b b' b'' b'''* of the cylinder will be drawn along bodily with the cone A.

By using a sufficient number of my improved earth-anchors upon any building it may be securely protected from being unroofed or removed from its foundation, and by applying lightning-rod points *i* to the straps F in suitable positions the house will also be effectually protected against lightning, as the anchors are always buried in sufficient depth of earth to insure an effective ground for a lightning-conductor.

The application of my improved anchor to a wharf-boat is shown in Fig. 7, the anchors being buried in the earth, as before described, above high and below low water mark, and connected by chains with windlasses on the boat.

In Fig. 8 I have shown the application of my improved anchor to the cables and braces of a bridge, G being the cables of the bridge, E' the stirrup, and B' a strap connecting the cone A with the stirrup.

The guy H, which braces the bridge laterally, is secured to the anchor I. (Shown in dotted lines.)

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a land-anchor, the combination, with a conical or tapering cone, of sections arranged to be expanded by the cone, substantially as herein described.

2. In a land-anchor, the combination of the rod B, cone A, and cylinder C, formed of sections *b b' b'' b'''*, substantially as herein shown and described.

3. In a land-anchor, the combination, with the cone A, provided with notches *c*, of the cylinder C, formed of sections *b b' b'' b'''*, each section having a hook, *e*, substantially as herein shown and described.

4. The combination, in a land-anchor, of the cone A, the cylinder C, formed of sections *b b' b'' b'''*, and eyebolts *f*, attached to the sections, substantially as herein described.

5. The combination, in a land-anchor, of the cone A, the sectional cylinder C, the rod B, stirrup E, and strap F, substantially as herein shown and described.

CYRUS C. PRATT.

Witnesses:
CHAUNCEY DYKE,
FRANCIS C. DOWNEY.