(No Model.)

R. GILLHAM.

MOLD FOR CONCRETE TUBES FOR CABLE RAILWAYS.

No. 330,013. Patented Nov. 10, 1885.

Fig. 1

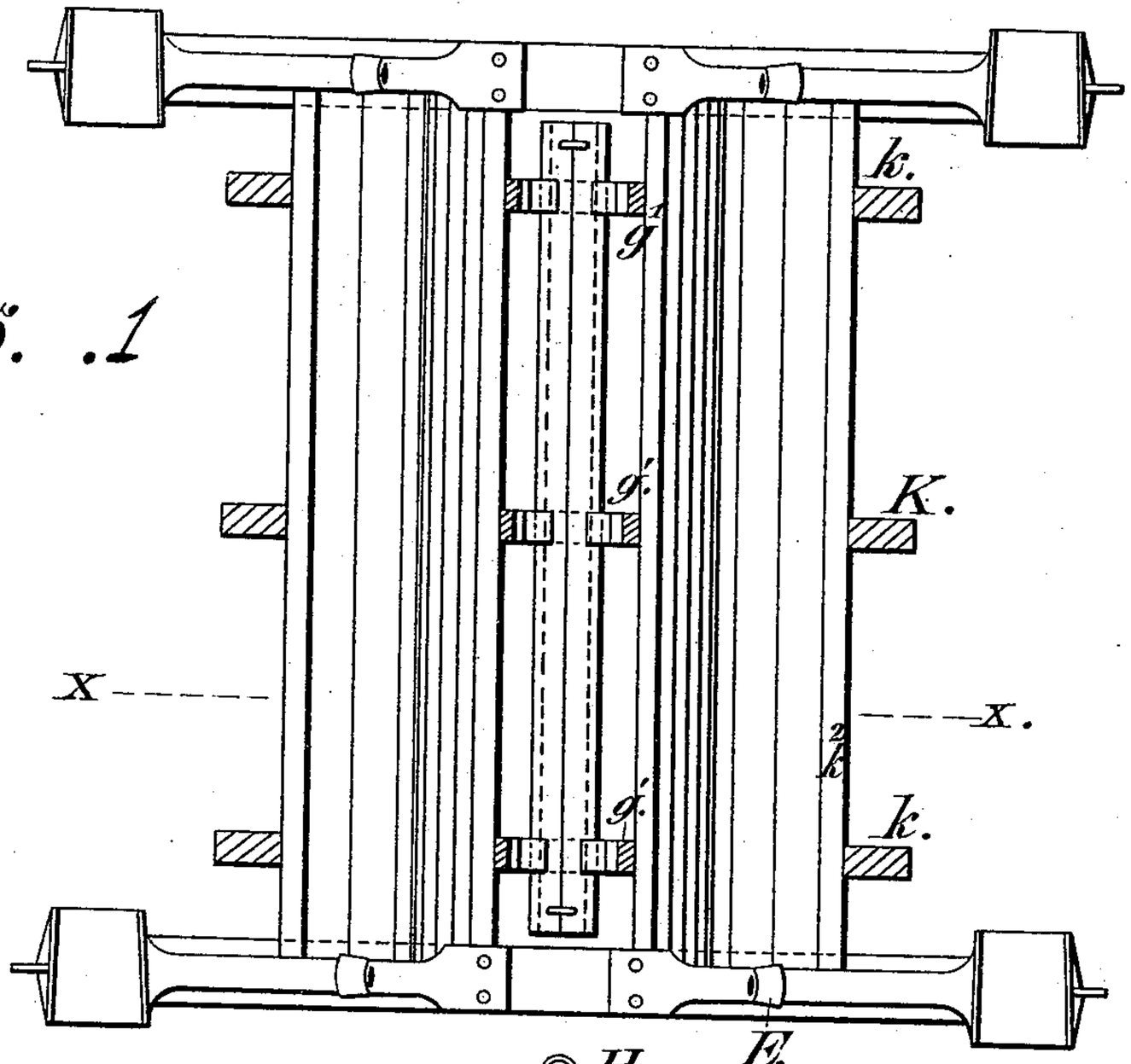
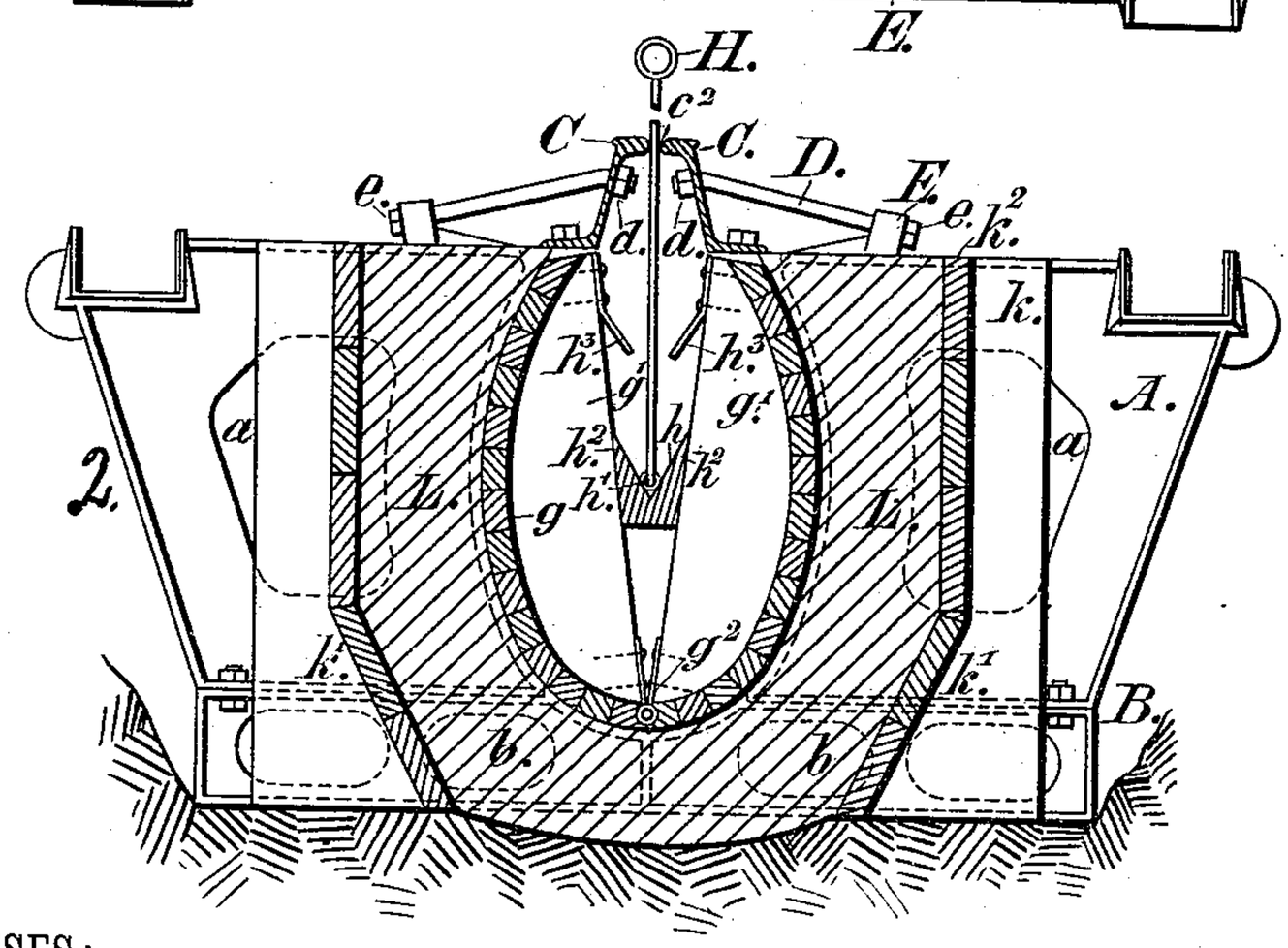


Fig. 2.



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MOLD FOR CONCRETE TUBES FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 330,013, dated November 10, 1885.

Application filed September 30, 1884. Serial No. 144,383. (No model.)

To all whom it may concern:

Be it known that I, ROBERT GILLHAM, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Molds for Concrete Tubes for Cable Railways; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is to afford convenient and expeditious means for the construction of the concrete tube through which the cable passes and for its union within the yoke which supports the trackway; and it consists in the devices for the construction of the concrete tube, hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of a cable railway, showing the yokes and their relative positions to each other and the means for constructing the concrete tube. Fig. 2 is a transverse view of a cable railway, taken on the line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A A represent the yoke of a cable railway. *a a* are the transverse openings through the yoke A. B is the yoke-beam. *b b* are the transverse openings through the yoke-beam B. C C are the slot-rails. c^2 is the slot. D D are the adjusting rods or bars. E E are lugs on the upper surface of yoke A. F is the tube-opening in yoke A. G is the removable core. *g g* are the longitudinal slats forming the sides of the core. *g' g'* are the interior segmental braces or ribs to the core G, and to which the slats *g* are attached. g^2 is a hinge on the separable parts of the core G. H is a pressure-rod. *h* is a double-acting wedge. *h'* is a staple in wedge *h*. h^2 h^2 are converging inclines on the wedge *h*. h^3 h^3 are wedge-plates on the segments *g' g'*. K K is an outer form. *k k* are the braces to form K. *k' k'* are the inclined portions of brace *k*. k^2 k^2 are the longitudinal sides. L represents the concrete.

In the construction of my improved core G I make a number of segments, *g' g'*, from suitable material, and to these segments, on their curved surfaces, fasten the slats *g g*, which are made of a sufficient length to extend from the vertical side or center of the tube-opening in one yoke to the center of the tube-opening in an adjoining yoke. The slats *g g* are placed upon the segments with their edges fitting closely together, said segments being placed at suitable distances apart in the longitudinal direction of the core, and the opposite parts of the core are brought together with the straight edges of the segments in contact. The opposite portions of the core G are connected by the hinges g^2 on the lower end of the segments *g'*, and the core G permitted thereby to be opened and closed, as desired. The core thus formed is smaller in size than the tube which is formed around it, and is made in shape to correspond with that of the tube-opening in the yoke A. Upon the inner straight edges of the segments *g' g'*, and opposite to each other, are attached the wedge-plates h^3, which severally incline downward and toward an opposite segment. These wedge-plates h^3 are secured by screws or nails to the segment *g'*. A wedge, *h*, is then formed to operate movably between the segments *g' g'* and throw them the requisite distance apart. The central portion of the wedge *h* is provided with converging inclines h^2 h^2, which incline toward and meet in the center of the wedge *h*. A pressure-rod H is then attached to the wedge *h*, between the inclines h^2 h^2, by the staple *h'*, and extends upward through the slot c^2 between the slot-rails C C. I then make the outer form, K, from suitable materials, with the braces *k* placed at the required distances apart and inclined at *k'*, or at the lower end. The longitudinal sides of the form K extend from the side of one yoke to the side of an adjoining yoke, and are held by the braces *k* parallel with the core G, and at a suitable distance away from the core G laterally to receive between said core and form the concrete.

In laying the concrete to form the tube the interior form and dimensions of said tube are made to conform to the central transverse opening, F, in yoke A, which opening is made sufficiently large to operate the cable and the tube serving to conduct the foreign matter which falls through the slot into suitable pits. On

either side of opening F and in the yoke are the transverse openings *a a*. The yoke-beam B, supporting the yoke A, and to which it is bolted, is also provided with transverse openings *b b*. One end of the core G is then placed in a closed relation in the tube-opening F of the yoke and its opposite end in and supported by the tube-opening in an adjoining yoke. The wedge *h* is operated by the pressure-rod H to throw the sides of the core against the sides of the opening F in the yoke. The outer form, K, is placed in a parallel relation to the core G at the required distance therefrom, and the concrete deposited between said core and form. The concrete, by the means of the openings *a a* and *b b*, forms a union with the yoke, and also with the concrete placed in the continuous formation of the tube on opposite sides of the yoke and beam, thereby giving an increased solidity to the structure. As soon as the concrete has "set" the wedge *h* is released by rod H, and drawn upward, the inclines h^2 h^2 on said wedge meeting with the wedge-plates h^3 h^3, which act in concert to throw the sides of the core away from the concrete and close the said core. The core is then drawn out from its bed and in the longitudinal direction of the tube into an adjoining yoke, and the operation repeated.

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

1. A form for the construction of continuous underground tubes in cable railways, consisting of longitudinal strips arranged in corresponding relation to the shape of the tube and opposite transverse supporting-segments, and adapted to fold together within the limits of the tube, substantially as described.

2. A form for the construction of continuous underground tubes in cable railways, consisting of longitudinal strips arranged in corresponding relation to the shape of the tube and opposite transverse supporting-segments, hinged together at one end, and adapted to fold together within the limits of the tube, substantially as described.

3. The combination, in a form for continuous underground tubes, of longitudinal strips arranged in corresponding relation to the shape of the tube and opposite transverse supporting-segments, hinged together at one end, and a wedge interposed between said segments, for the purpose described.

4. The combination, in a form for continuous underground tubes in cable railways, of longitudinal strips arranged in corresponding relation to the shape of the tube and opposite transverse supporting-segments, hinged together at one end, and wedge-plates on said segments, and a wedge, and a pressure-rod attached to said wedge, for the purpose shown and described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ROBERT GILLHAM.

Witnesses:

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FRED. W. PERKINS.