(No Model.)

W. WILLIAMS & J. H. CROOK.

HOSE AND WIRE BRIDGE.

No. 488,258. Patented Dec. 20, 1892.

Fig. 2.

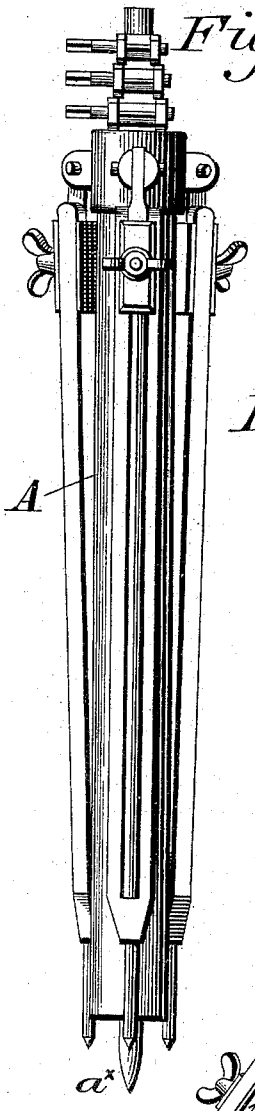

Fig. 1.

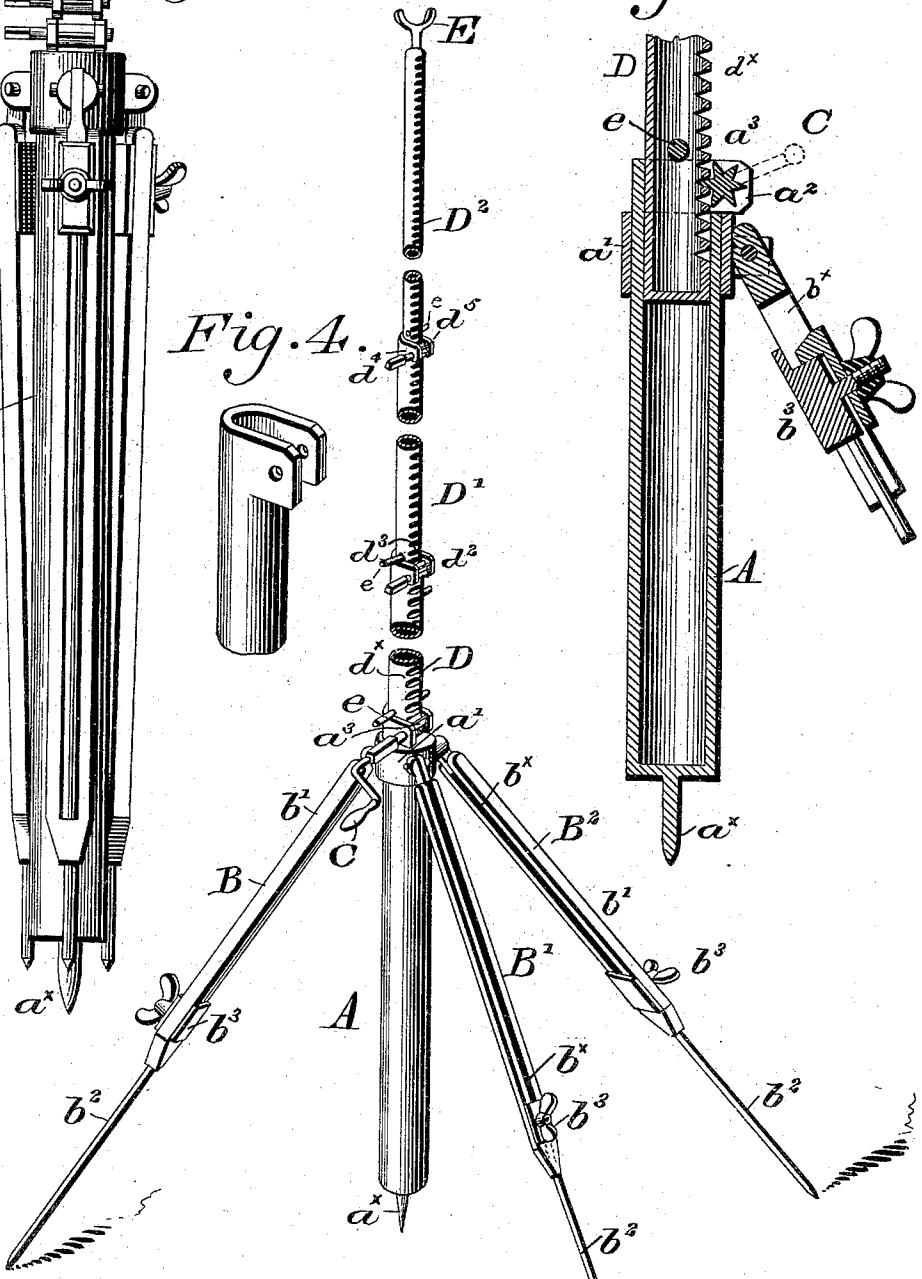

Fig. 4.

Fig. 3.

WITNESSES:

P. H. Eagles.

R. M. Russell

INVENTORS

Wm Williams

J. H. Crook

By their attorneys

Strawbridge & Taylor

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM WILLIAMS AND JOHN HANKINSON CROOK, OF PHILADELPHIA, PENNSYLVANIA.

HOSE AND WIRE BRIDGE.

SPECIFICATION forming part of Letters Patent No. 488,258, dated December 20, 1892.

Application filed May 11, 1892. Serial No. 432,560. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM WILLIAMS, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, and JOHN HANKINSON CROOK, a subject of the Queen of Great Britain, residing at said Philadelphia, have jointly invented a new and useful Improvement in Hose and other Bridges, of which the following is a specification.

It is the object of our invention to provide a novel device, adjustable as to height, and capable of being locked in any desired position within its range of adjustment, of few parts, and simple construction, compact and readily portable when folded or closed, and, in use, susceptible of quick and positive adjustment.

A further object of our invention is the adaptation of a device of the foregoing general character to use as a support for a line of hose crossing a street above said street to allow of the passage of vehicles beneath,—and as a means by which electric wires, suspended in such position as to obstruct the work of extinguishing a conflagration, may be elevated from such position.

In the drawings we show and herein we describe a convenient form of a preferred embodiment of our invention, the particular subject matter claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 is a view in perspective, but partly fragmentary, of our improved standard erected in position for use and extended. Fig. 2 is a view in side elevation of said standard when closed and folded for transportation. Fig. 3 is a central vertical sectional elevation of the standard casing, a portion of one of the casing legs, and a portion of one of the adjustable members. Fig. 4 is a view in perspective of the lug provided at the upper end of one of the adjustable members.

Similar letters of reference indicate corresponding parts.

In the drawings, A is the standard casing, the same being an elongated cylindrical body, open at its upper, and closed at its lower, end, and preferably provided at its lower end with a spur $a^{\times}$.

B B′ B^2 are three folding extensible legs applied to said casing and adapted to be either shortened and folded against the side of the casing for transportation,—or lengthened and extended out from the casing to form a tripod for the support of the standard when in use. The legs are all similar; description of one therefore suffices for all. Each leg is shown as formed of two members, the upper, b', of which is shown as pivoted between a pair of lugs projecting from a collar a' surrounding the upper end of the casing,—and as embodying a longitudinal slot $b^{\times}$, cut through the body of said member, and terminating at the lower end of said body in an axial aperture opening through the end of said member.

b^2 is the lower member of the leg, passing through the opening in the lower end of the upper member, and being adapted for longitudinal movement with respect thereto; the upper end of said lower member is equipped with a clamp b^3 the respective members of which exist on opposite faces of said upper member and are connected by a screw passing through and adapted to slide longitudinally along the slot $b^{\times}$; upon loosening the screw, the clamp and its attached member b^2 may be moved to any desired position of adjustment, and secured by tightening said screw.

D D′ D^2 are three telescopically related or relatively adjustable members, of successively graduated diameters, and adapted to be nested the one within the other within the casing A. The arrangement and operation of the member D and its connections may be described as follows:

a^2 are a pair of lugs projecting from the upper end of the casing A, (see Fig. 3) within suitable openings in which is journaled a small pinion a^3, the axle of which projects slightly and is squared for the reception of a suitable detachable operating crank handle C.

The member D is preferably of about the length of the casing A, and is preferably formed as a cylindrical shell, snugly fitted therein, and provided at its upper end with a pair of lugs d^2 of the same description as the pair a^2, through which lugs, d^2, said member D, when in its lowest position, rests upon the top of the casing A. The member D is to be

elevated by the rotation of the pinion a^3 under the actuation of the crank handle C, and we therefore provide said member D with a series of teeth with which the pinion a^3 is in constant engagement. These teeth may be very economically and satisfactorily formed by cutting notches $d^\times$ in the wall of said member D in proper position to receive the teeth of said pinion. Between the lugs d^2 is journaled a second pinion d^3, having a squared projecting axle.

The member D′ is substantially similar to, but of slightly smaller diameter than, the member D, and is nested within the latter, resting when in closed position by means of its lugs d^4 upon the member D, and adapted to be elevated by the operation of the pinion d^3. A pinion d^5 is journaled in the lugs d^4, and, the member D^2, being substantially similar to the members D and D′, and nested within the latter, is adapted to be elevated by the rotation of the pinion d^5. Each of the members embodies at its lower end an opening which when said member is elevated to its limit of movement, is brought to a point just above the edge of the preceding member, or of the casing, so that, by the insertion of a pin *e*, through said opening, as shown in Fig. 3, said member will be supported or locked in such elevated position.

The operation of the device will be readily understood. The casing with the members nested within it is placed in the desired position, and the legs adjusted to the proper length and inclination to afford the required support, the barb or spur $a^\times$ being entered in the ground. The handle C is applied to the axle of the pinion d^5 and rotated, thereby occasioning the elevation of the member D^2, and, when said member has reached the limit of its upward movement, a pin *e* is inserted to support it in such position. The crank handle is then removed and applied to the axle of the pinion d^3, and, by its rotation, the elevation of the member D′, (carrying above it, of course, the member D^2) is occasioned. When said member D′ has reached the limit of its movement a pin *e* is inserted to maintain it in position, and the handle is removed and applied to the axle of the pinion a^3, whereupon the member D is similarly elevated (carrying above it the other two members D′ and D^2) and similarly secured in position. The upper end of the member D^2 is provided with a hose or wire catching and supporting device, E, of any preferred character, but conveniently in the form of a cross piece having upturned extremities.

In the employment of our invention we prefer to employ two of the standards described to form a hose bridge, locating one standard on each side of the track or street above which it is desired that the hose should be elevated, but when wires are to be elevated one standard may be sufficient.

Having thus described our invention, we claim:

1. As an article of manufacture, a standard casing, a series of members contained therein and nested one within the other, each embodying a series of teeth, a pinion wheel mounted in said casing and in each except the upper of said members, substantially as set forth.

2. As an article of manufacture, a standard casing, means for supporting it in position, a pinion supported upon said casing, a series of telescopically related members, each except the upper provided with a pinion, and each provided with a series of teeth, substantially as set forth.

3. As an article of manufacture, a standard casing, a series of telescopically related members mounted therein each embodying a series of teeth and each adapted to be elevated by an independently operated pinion wheel, substantially as set forth.

4. As an article of manufacture, a standard casing, means for supporting it in vertical position, a pinion supported by said casing, a series of telescopically related members each provided with a series of teeth, and each, except the one which when the device is extended is the upper, provided with a pinion adapted to mesh with the teeth of an adjacent member, and means by which each member, when elevated or extended, is, in its extended position, secured to the next larger or succeeding member, so as to be carried up by said succeeding member when the latter is elevated, substantially as set forth.

In testimony that we claim the foregoing as our invention we have hereunto signed our names this 30th day of April, A. D. 1892.

WILLIAM WILLIAMS.
JOHN HANKINSON CROOK.

In presence of—
F. NORMAN DIXON,
R. M. RUSSELL.