J. W. POST.

DRAW-BRIDGE.

No. 176,805. Patented May 2, 1876.

FIG. I.

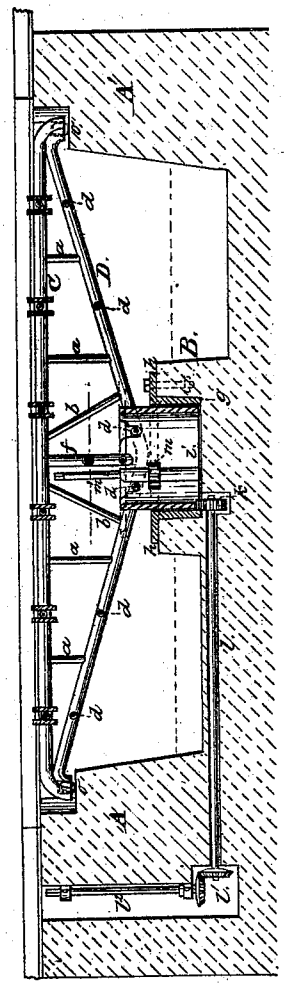


FIG. II.

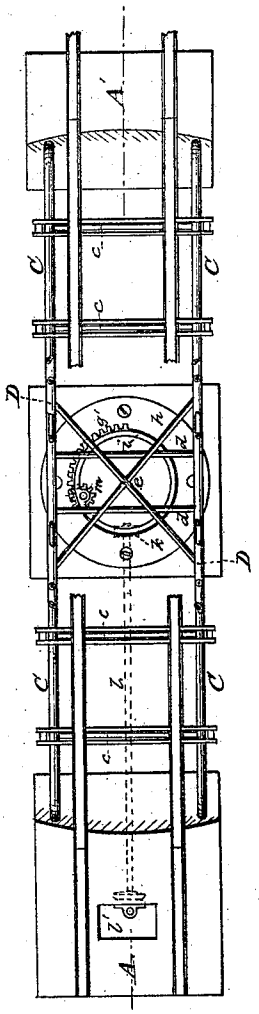


FIG. III.

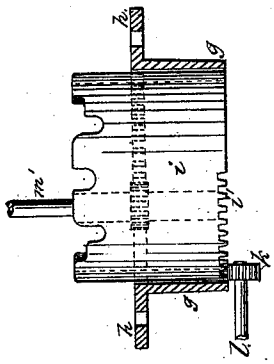
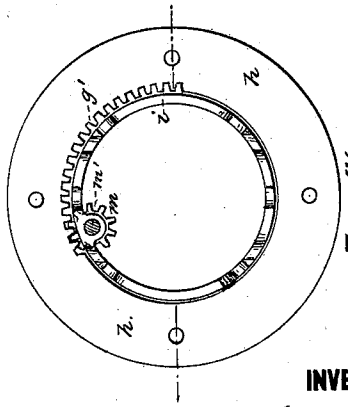


FIG. IV.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN W. POST, OF NEW YORK, N. Y.

IMPROVEMENT IN DRAW-BRIDGES.

Specification forming part of Letters Patent No. **176,805**, dated May 2, 1876; application filed April 11, 1876.

To all whom it may concern:

Be it known that I, JOHN W. POST, of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Draw-Bridges; and I do hereby declare that the following is a full, clear, and exact description thereof, 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, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to construct a draw-bridge that is light, strong, durable, not easy to get out of order, and that can be readily operated.

The invention consists of two truss-frames, braced and stiffened by struts, and united by cross-braces, all of which are made of tubes or pipes, of wrought-iron, steel, or other suitable material, so that they can be taken apart or put together in a very expeditious manner for transportation, &c. It also consists of certain devices for operating the bridge, either from the abutment or from the center of the bridge, all of which will be more specifically described in the annexed specification.

In the accompanying drawing, Figure 1 is a longitudinal section of my bridge. Fig. 2 is a top view, with part of the upper chords, &c., broken away. Fig. 3 is an enlarged side view of part of the operating devices. Fig. 4 is an enlarged top view of the same.

In the drawing, A A′ represent the abutments or piers, and B the central support or pivot for the bridge, upon which it revolves. The upper chord C and lower chord D are united by the vertical braces or struts *a* and diagonal braces *b*, all of which are made of tubes or pipes, and screwed together in any suitable manner, and form the two trusses or girders. They are connected together by transverse tubes or pipes *c* and *d*, and diagonal braces *e* and *f* in the center. The two upper chords C are furthermore united by cross-ties for the railroad-rails of a peculiar construction, which embrace the lower ends of the rails, and hold them securely in position, and prevent them from spreading. To the central support or pivot B a ring or cylinder, *g*, provided with a flange, *h*, through which the foundation-bolts pass, is let in and secured.

A cylinder, *i*, fits snugly into the ring *g*, and revolves in it. It is provided at its lower side with teeth *i′*, into which a pinion, *k*, on a horizontal shaft, *l*, meshes, and is operated either by power applied to the shaft *l* direct or by bevel-wheels l^1, one of which is secured on the vertical shaft l^2, that extends to the top of the abutment, and may be operated by a crank.

As a modification of these devices the flanged ring *g* may be provided with teeth *g′*, into which a pinion, *m*, on the upright shaft *m′* meshes.

The shaft *m′* is journaled in a lug on the inside of the inner ring *i*, and the teeth of the pinion *m* pass through a slot in the side of the said ring *i*, and mesh into the teeth *g′* of the flanged ring *g*. In the upper face of the ring *i* are also cut suitable notches, into which the braces *d* and *e* of the bridge fit, and by them the bridge and ring *i* are connected and operated together by the gearing.

If desired, friction-rollers *o* may be inserted in the bent ends of the chords C D, and travel on a track on the abutments A A′.

The operating devices may be covered with a water-tight covering, if desired.

The advantages of my improved draw-bridge are, that it is very light, strong, durable, and not likely to get out of order; that it can be easily put together or taken apart for transportation, &c.; that it can be lengthened to suit different localities, by the insertion of additional lengths of tubes, which may also be varied in size to suit different loads or strains, and that the bridges can be furnished at a very small cost.

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

1. The draw-bridge herein described, consisting of tubular chords C D, braces *a b*, cross-braces *c d e f*, and operating mechanism, substantially as shown.

2. The flanged ring *g h*, provided with teeth *g′*, into which the pinion *m* on shaft *m′* meshes, in combination with a draw-bridge, substantially as shown and herein set forth.

3. The combination of the ring *i*, provided with notches for the braces *d* and *e*, with the flanged ring *g h*, having teeth *g'*, into which the pinion *m* meshes, substantially as shown and specified.

4. The ring *i*, provided with notches for the braces *d* and *e*, in combination with the draw-bridge C D, constructed substantially as shown and described.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

JOHN W. POST.

Witnesses:
J. R. NOTTINGHAM,
FRED. R. GOODRIDGE.