

A. NORMAN.
PONTON BRIDGE.
APPLICATION FILED APR. 23, 1909.

951,379.

Patented Mar. 8, 1910.

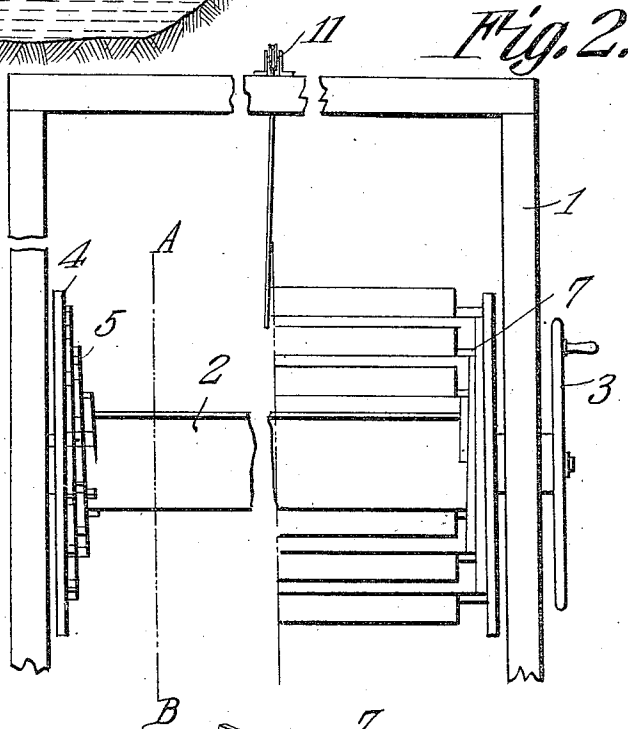
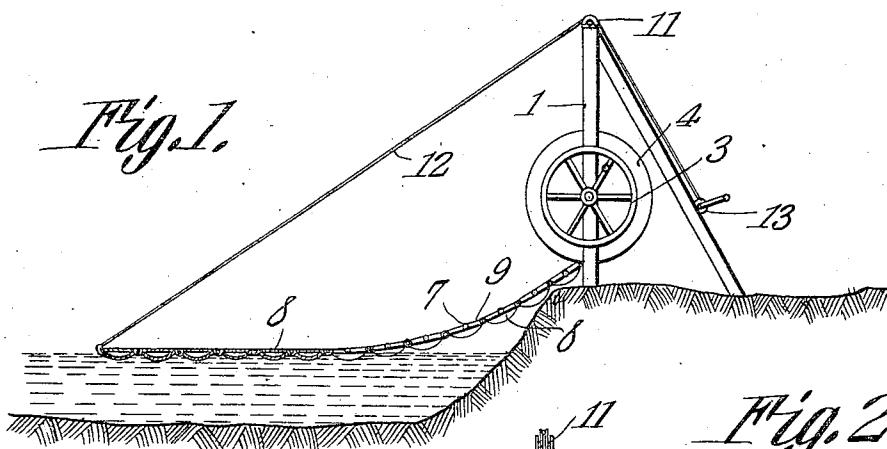
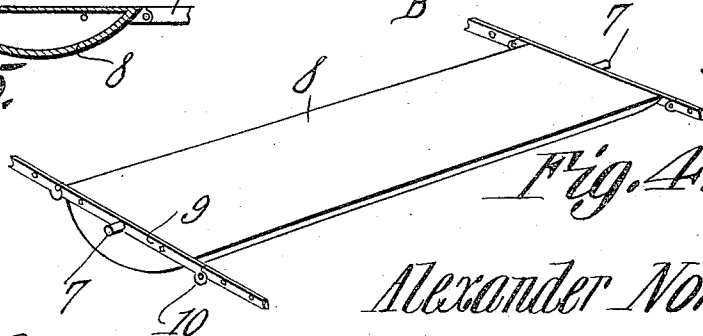
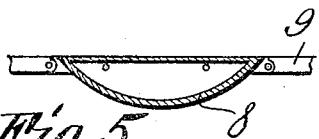
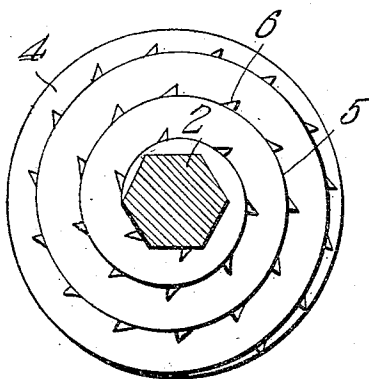


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

ALEXANDER NORMAN, OF GILROY, CALIFORNIA.

PONTOON-BRIDGE.

951,379.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALEXANDER NORMAN, a citizen of the United States, residing at Gilroy, in the county of Santa Clara and State of California, have invented a new and useful Pontoon-Bridge, of which the following is a specification.

This invention relates to pontoon bridges and its object is to provide a structure of this character consisting of one or more sections, each of which is designed to be transported in the form of a roll, and consists of a series of pivotally connected floats constituting the flooring of the bridge.

A further object is to provide means whereby, when the holding spool is rotated in one direction, the pontoon section will be positively unwound and forced outwardly along the surface of the body of water to be bridged.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a view, partly in side elevation and partly in section, of a pontoon bridge embodying the present improvements, said bridge being shown partly projected across a body of water: Fig. 2 is an enlarged front elevation of a portion of the apparatus, the pontoon section being removed from one end portion of the supporting spool: Fig. 3 is a section on line A—B Fig. 2: Fig. 4 is a perspective view of one of the floats of the bridge: Fig. 5 is a transverse section through one of the floats.

Referring to the figures by characters of reference 1 designates a supporting frame designed to be set up upon one bank of the river or other body of water to be bridged, and a spool is mounted to rotate within this frame and consists of a polygonal shaft 2, one end of which is provided with a driving device 3 in the form of a hand wheel or any other suitable device, there being disk-like heads 4 upon the shaft and adjacent the ends thereof. Each of the heads 4 has a spiral inner face as indicated at 5, there being a series of ratchet teeth 6 extending laterally from the several tiers of each head and spaced apart at regular intervals. These teeth are designed to engage trunnions 7

extending from the ends of the float members 8, each of which is preferably hollow and segmental in transverse section as indicated particularly in Fig. 5. Links 9 are secured to the ends of these float members, and the trunnions 7 may if desired be extended from them, and the various links of the float sections constituting the body of the pontoon bridge are pivotally connected as shown at 10, so that when all of the floats are assembled an elongated flexible platform is formed, each float having trunnions extending from its ends and disposed in the path of certain of the teeth 6 when said platform is wound upon the spool heretofore referred to. The trunnions 7 are of different lengths, the said lengths gradually diminishing from one end to the other of the platform, so that the trunnions will engage the proper teeth upon the spiral heads, while the flexible platform is being placed upon the spool.

It is to be understood that a large number of spools provided with platform sections may be utilized, and these spools can be stored in a comparatively compact space.

When it is desired to set up the bridge for use the frame 1 is first erected close to the edge of the body of water, and one of the spools on which a pontoon section is wound, is mounted within the frame. Said spool is then rotated so as to unwind the pontoon section and the teeth 6 will push against the trunnions 7 and force the section members 8 positively outwardly on to the surface of the body of water. After one section of the bridge has been extended over the body of water in this manner another spool having a section wound thereon is placed within the supporting structure 1 and coupled to the previously extended section, after which said spool is rotated so as to project the second section on to the surface of the water. This operation is continued until the body of water has been completely bridged, the various sections of the bridge floating upon the water.

If desired, and as shown in Fig. 1, a cable may be attached to the first one of the members 8 of the bridge and extended over a guide pulley 11 mounted on the frame 1. This cable, which has been indicated at 12, may be secured to a windlass or other winding device, such as shown at 13, and may be paid out as the bridge is projected over the water, said cable however being kept

taut so as to hold the front end of the bridge partly elevated and thus capable of traveling over any obstructions against which it might be pushed.

5 It is to be understood of course that the various floats 8 are preferably hollow and air-tight, although, if desired, they can be made solid but of a sufficiently light material.

10 It is of course to be understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing the advantages of the invention.

15 What is claimed is:—

1. A pontoon bridge comprising a series of hingedly connected floats constituting a bridge floor, trunnions extending from the floats, and spirally arranged revoluble means 20 for engaging the trunnions to hold the whirls of the coiled bridge out of contact and to shift the platform in the direction of its length.

2. The combination with a revoluble spool; 25 of a flexible platform disposed to be wound thereon and constituting a float, projecting devices upon the platform, and means upon the spool for engaging said devices to shift the platform in the direction of its length 30 during the rotation of the spool in one direction.

3. The combination with a spool mounted for rotation, said spool having spiral heads; 35 of a flexible platform disposed to be wound upon the spool, projecting devices upon the

platform for engagement with the spiral heads, and means upon said heads for engaging the projecting devices to positively direct the platform in the direction of its length during the rotation of the spool in 40 one direction.

4. In a device of the class described a spool having spiral heads, a flexible platform disposed to be wound upon said spool, said platform constituting a float, project- 45 ing devices upon the platform for engaging the spiral heads, teeth upon said heads for engaging said projecting devices, and means for rotating the spool in one direction to shift the platform longitudinally. 50

5. In a device of the class described a spool mounted for rotation, said spool having spiral heads, a bridge structure disposed to be wound upon the spool, said structure consisting of hingedly connected floats con- 55 stituting the bridge floor, trunnions extending from the sections and engaging the spiral heads of the spool, and means upon said heads for bearing against the trunnions to force the bridge structure longitudinally 60 from the spool during the rotation of the spool in one direction.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ALEXANDER NORMAN.

Witnesses:

W. A. WHITEHURST,
A. W. CHESBRO.