

E. F. SCHOENTHALER.
SAFETY DRAWBRIDGE ATTACHMENT.
APPLICATION FILED FEB. 11, 1911.

1,041,359.

Patented Oct. 15, 1912.
2 SHEETS—SHEET 1.

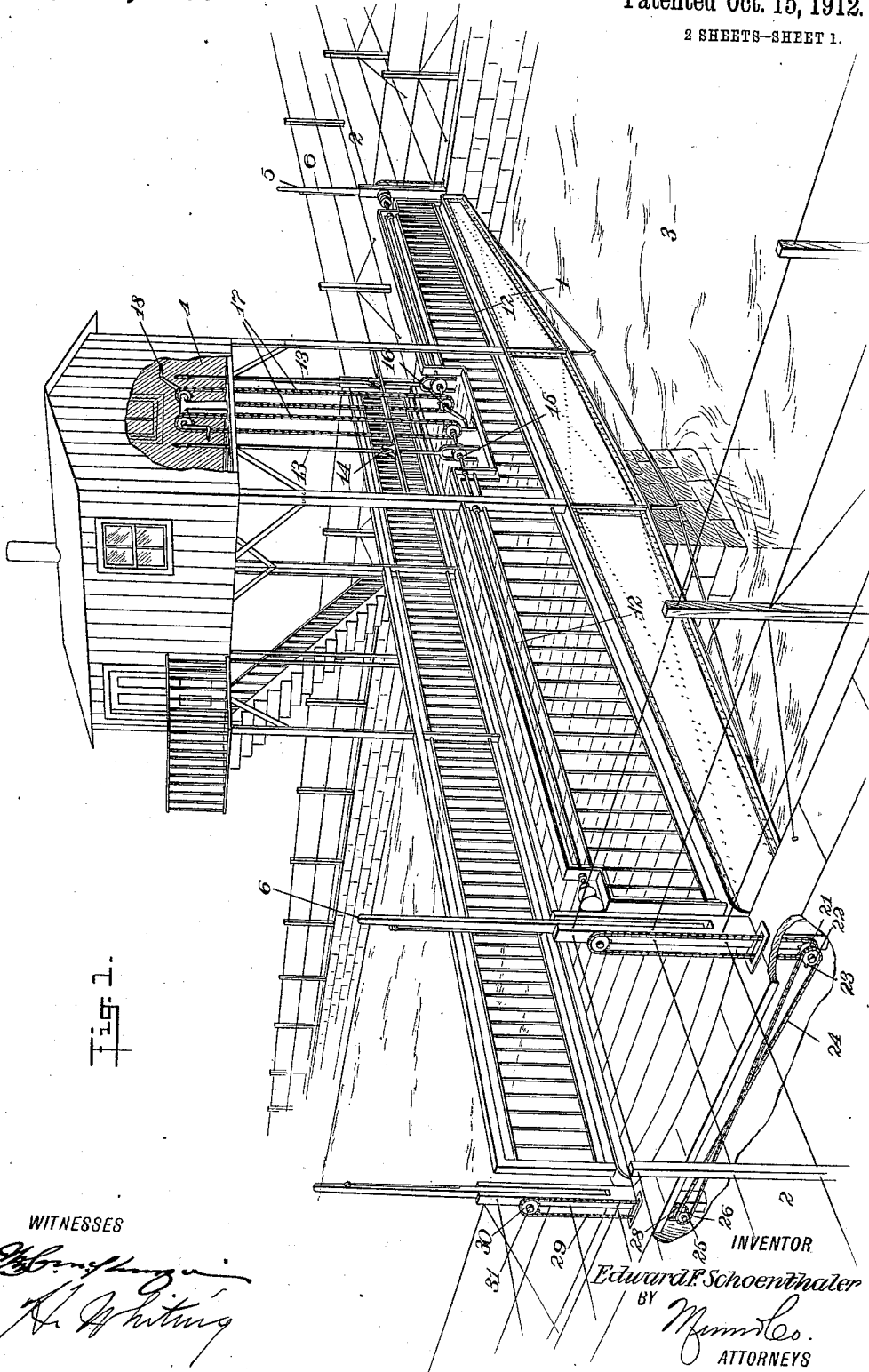


Fig. 1.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

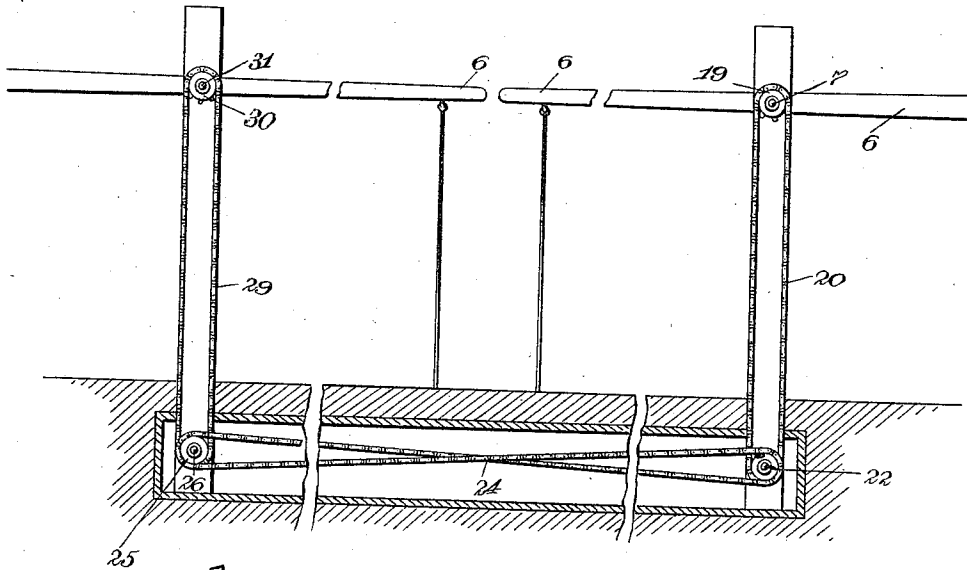


Fig. 3.

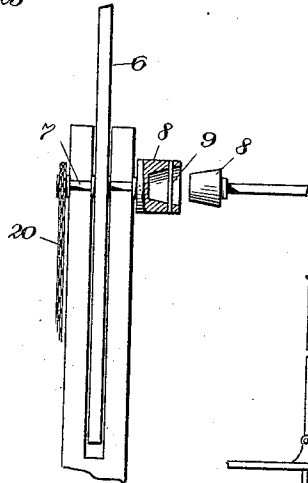


Fig. 4.

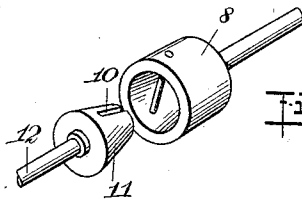
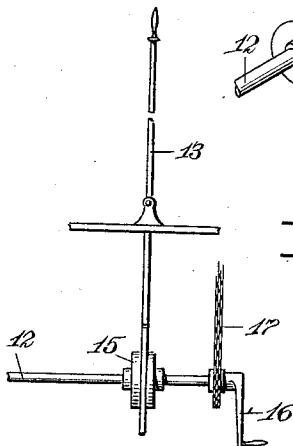


Fig. 5.



WITNESSES

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SAFETY DRAWBRIDGE ATTACHMENT.

1,041,359.

Specification of Letters Patent.

Patented Oct. 15, 1912.

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To all whom it may concern:

Be it known that I, EDWARD F. SCHOENTHALER, a citizen of the United States, and a resident of Long Branch, in the county of Monmouth and State of New Jersey, have invented a new and Improved Safety Drawbridge Attachment, of which the following is a full, clear, and exact description.

This invention relates to a new and improved attachment for a drawbridge, whereby the entrance to either or both sides may be guarded when the bridge is open, so as to prevent accident.

In the operation of the majority of drawbridges which are now in use, it is generally necessary to have at least two men, one to close the guard gates at the entrance to the bridge and the other to manipulate the machinery for turning the bridge.

An object, therefore, of this invention is to provide means whereby a single man can manipulate the guard gates at the entrance of the bridge from a point where the manipulation of the bridge itself is controlled, such as the engine-house on the bridge.

A further object of this invention is to provide means whereby the guard gates can only be opened conveniently when the bridge has returned to its position in alinement with the roadway, the means for operating the gates being operable either from above in the engine house, or below on the bridge itself.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a perspective view, with parts broken away to show the underlying structure; Fig. 2 is a vertical section through one of the guard gates; Fig. 3 is a detail view of the clutch mechanism for operating one of the guard gates; Fig. 4 is a perspective view of the clutch mentioned in connection with Fig. 3; and Fig. 5 is a fragmentary detail in elevation, of the controlling mechanism.

Referring more particularly to the separate parts of this invention as embodied in the form illustrated in the drawings, 1 indicates a drawbridge of any suitable character, which is normally in alinement with a road-

way 2 when in use, but is adapted to be swung in alinement with a stream 3 or other body of water, so as to permit the passage of vessels.

The bridge may be manipulated from one position to the other by any suitable means, which may be controlled from any suitable point, such as an engine-house 4 mounted on the bridge, and in this instance shown as located above the same.

To prevent accident before throwing the bridge from its position in alinement with the roadway 2 to its position in alinement with the stream 3, it is desirable to guard the entrance to the bridge either at one or both ends. In this instance both ends are shown to be guarded, and there are shown gates 5 for this purpose. These gates may be of any suitable character, and may consist of one or more arms 6, capable of swinging from a vertical position, as illustrated in Fig. 1, to a horizontal position, as illustrated in Fig. 2. In this instance, two arms are shown for each gate, but in certain cases where the width of the bridge is not excessive, one arm may be sufficient. In this embodiment, a shaft 7, which forms a pivot point for one of the arms 6, is provided with a clutch 8, the specific form of which is more clearly illustrated in Figs. 3 and 4. In this instance the clutch is shown as being formed with a conical cavity having a cross pin 9 therein, which is adapted to be engaged by a slot 10 on a clutch member 11, which is formed with a taper, so as to more readily enter the cavity in the clutch member 8. The clutch member 11, of which there is one provided for each gate, is secured to a shaft or rod 12, slidingly mounted in the bridge 1 so as to be capable of being manipulated into and out of engagement with a clutch member 8. In this instance, the clutch members 11 are shown as being located on separate shafts and manipulated by separate levers 13, but they might just as well, if desired, be on the same shaft, and operated in any suitable manner from a suitable lever. In this instance, the levers 13 are shown as pivotally connected at 14 on another portion of the framework, and having a bifurcated engagement at one end with collars 15 on the shafts 12. The opposite ends extend up into the engine-house 4, where they will be readily accessible to the bridge tenders. When the slot 10 in the clutch member 11 is in engagement with

the pin 9 on the clutch member 8, it can be readily seen that by rotating the shaft 12, the gates can be lowered or raised.

Any means for rotating the shafts 12 may be provided, such as hand cranks 16 located on the ends of the shaft adjacent the bridge proper. They may be also rotated by means of a chain-and-sprocket connection, indicated at 17, with hand cranks 18 located up in the engine-house. In the latter case, the bridge tender can control the swinging of the bridge and the operation of the gates from a common point and where he will be able to see the road in each direction. In the case where two arms for each gate are used, as shown in this instance, the one may be controlled from the other by means of the mechanism more clearly illustrated in Figs. 1 and 2. In this instance, the shaft 7 is shown as provided with a sprocket wheel 19, which drives a chain 20, having engagement with a sprocket-wheel 21 on a shaft 22. The shaft 22 is also provided with a similar sprocket 23 driving a cross chain 24, which in turn drives, by means of a sprocket 25, a shaft 26, provided with a similar sprocket 28 driving a chain 29. The latter engages a sprocket 30 on a shaft 31, which forms the pivot for the other arm of the gate, and is secured thereto, so as to manipulate the same.

The operation of the device will be readily understood when taken in connection with the above description.

The bridge tender, either located on the bridge itself or up in the engine-house 4, when he sees it is desirable to open the bridge, can also see the roadway at the same time, and therefore closes the gates at the proper moment. By throwing the levers 13, the clutch 11 may be brought into locking engagement with the clutch 8, if not already connected thereto, so that a rotation of the shafts 12, either from the bridge itself or from above, will lower the gates so as to prevent the passage of teams or persons beyond the banks of the river 3. Before swinging the bridge, the operator will manipulate the levers 13 so as to disengage the clutch members 11 from the clutch members 8, and then swing the bridge to its position out of alignment with the roadway. After the cause for the bridge being opened has passed, the bridge tender returns the bridge to its position in alignment with the roadway, and then, by the manipulation of the levers 13, connects the shafts 12 in driving relation with the gates, so as to raise them.

While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in various changes, alterations and modifications which may come within the scope of the appended claims.

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

1. The combination with a drawbridge adapted to bridge a gap between two portions of a roadway, of a pair of guard gates on said roadway located in juxtaposition to the end of said drawbridge, an engine-house on said drawbridge, from whence the swinging movement of said drawbridge may be controlled, each of said gates comprising a pivotally mounted arm, said arms being adapted to swing in opposite directions, a clutch member on the pivot of one of said arms, a shaft rotatably and slidably mounted on the drawbridge, a clutch member on said shaft, a lever mounted on the drawbridge for sliding the said shaft to move the clutch member thereof into and out of engagement with the clutch member on the pivot of said arm, means for rotating said shaft, a chain-and-sprocket connection with each of said arms, and a single cross chain-and-sprocket connection between said first-mentioned sprocket connections, whereby said arms will swing simultaneously in opposite directions.

2. The combination with a drawbridge adapted to bridge a gap between two portions of a roadway, of a pair of guard gates on said roadway located in juxtaposition to the end of said drawbridge, an engine-house on said drawbridge, from whence the swinging movement of said drawbridge may be controlled, each of said gates comprising a pivotally-mounted arm, said arms being adapted to swing in opposite directions, a clutch member on the pivot of one of said arms, a shaft rotatably and slidably mounted on the drawbridge, a clutch member on said shaft, a lever mounted on the drawbridge and extending into the engine-house for sliding the shaft to move the clutch member thereof into and out of engagement with the clutch member on the pivot of said arm, a chain-and-sprocket connection with the pivots of said arms, and a single cross chain-and-sprocket connection between said first-mentioned sprocket connections, whereby said arms will swing simultaneously in opposite directions, means for rotating said shaft, comprising a shaft mounted in the engine-house, a crank secured to said shaft for operating it, and a chain-and-sprocket connection between the said sliding shaft and the shaft mounted in the engine-house.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD F. SCHOENTHALER.

Witnesses:

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PHILIP D. ROLLHAUS.