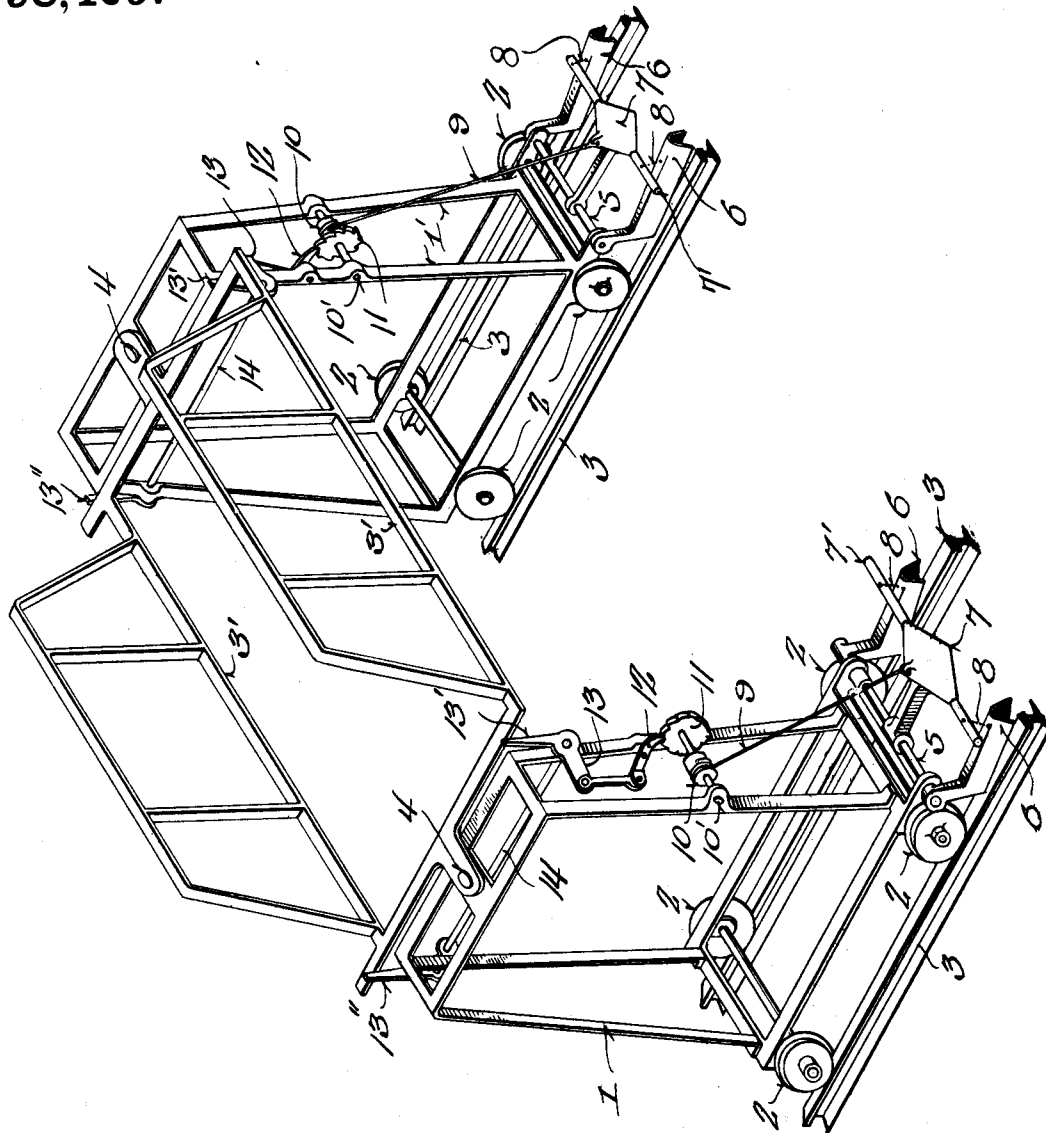


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LOCKING MECHANISM FOR TRAVELING BRIDGES.
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LOCKING MECHANISM FOR TRAVELING BRIDGES.

1.198.409

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To all whom it may concern:

Be it known that I, CHARLES BERGHOEFFER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Locking Mechanisms for Traveling Bridges; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, economical and effective locking mechanism for traveling bridges, the said locking mechanism being normally held in suspension and arranged to be released coincident to abnormal skew or shift of the bridge caused through wind pressure induced by weather conditions. The said mechanism when so released will automatically lock the bridge in connection with its rail-supported superstructure, whereby wreckage of the mechanism is avoided.

Experience has demonstrated, especially in connection with heavy dock bridges utilized in connection with handling coal or analogous materials, that heavy wind storms frequently twist these structures to a position where they are wrecked and it is to overcome such contingencies that the above invention is employed.

With this object in view the invention consists in certain peculiarities of construction and combination of mechanical elements as set forth hereinafter with reference to the accompanying illustration and subsequently claimed.

The drawing illustrates a diagrammatic view of a bridge structure in perspective having attached thereto a locking mechanism embodying the features of my invention.

Referring by characters to the drawing, 1, 1', represent carriage members of any desired type, the same being supported by truck-wheels 2 which are adapted to travel upon rails 3. The carriage members serve as end supports for a bridge member 3', the ends of which bridge member are anchored to the carriage members by pintle connections 4. Each carriage member, as shown, is provided with a locking mechanism embodying the features of my invention, but for convenience and clearness in description the locking mechanism of only one carriage is described, it being noted that the mechanism of both carriages are identical.

The carriage 1 adjacent to the rails carries a rock-shaft 5, which rock-shaft has secured thereto a pair of locking members 6 in the form of wedge-shoes, the same being adapted to straddle and wedgingly engage the rails or in any other suitable manner be locked to said rails coincident to the release. The shaft 5 also has loosely mounted thereon a hammer-weight 7, which weight has arms 7' extending therefrom that are alined over the locking members. These arms are connected to the juxtaposed brake members by flexible chains or cords 8, said hammer-weight being also connected to a cable 9, which cable is coiled about and secured to a windlass 10. The shaft 10' of the windlass is suitably journaled in the framework of the carriage and also secured to said shaft is a ratchet-wheel 11, which ratchet-wheel is adapted to be engaged by a pawl 12. The pawl is hingedly secured to one of the beams of the carriage and, in turn, is connected by a rod or cable to a tappet-lever 13. The tappet-lever 13 is secured to a rock-shaft 14 which extends lengthwise of the carriage and is mounted in suitable journals with which said carriage is provided. The tappet-lever carries an arm 13' that projects upward and adjacent to one corner of the carriage, the said rock-shaft being provided with a similar tappet-arm 13'' that is disposed in a corresponding position relative to the opposite corner of the bridge member.

When the parts are in the position illustrated the hammer-weight and locking members are held in suspension and locked in this position by means of the pawl 12. Hence the mechanism is at rest. Should wind pressure be sufficient to cause the bridge to horizontally twist or skew upon its fulcrum in either direction, it is apparent that this movement will cause one or the other of the tappet-arms 13', 13'', to be engaged, whereby the pawl 12 will be released and thus the hammer-weight is permitted to swing down, together with the lock-members. The lock-members will thereby frictionally engage the rails and be firmly seated by the blow of the hammer-weight incidental to the same coming to rest. Hence it is apparent that the carriage will be locked to the rails and the wind pressure will thus be resisted as no further movement relative to the carriage or bridge

members can be effected. Thus it will be seen that the bridge structure can be held intact after an initial skew due to tripping the locking mechanism, which tripping is automatically effected by twist of the bridge caused through impact of the wind, it being understood that both ends of the bridge may be provided with the locking mechanism.

10 I claim:

1. In a bridge structure having end carriages, truck-wheels therefor, supporting rails for the truck-wheels, and a bridge member pivotally supported upon the carriages; the combination of locking means carried by each carriage adapted to engage the juxtaposed rails, means for temporarily suspending the locking mechanisms, and a release lever in connection with each suspension means adapted to engage the ends of the bridge.

2. In a bridge structure having end carriages, truck-wheels therefor, supporting rails for the truck-wheels, and a bridge pivotally supported upon the carriages; the combination of a pivoted weight-controlled locking mechanism in connection with each carriage adapted to engage the juxtaposed rails, a windlass mounted upon each carriage in chain or cable connection with its

locking mechanism, a ratchet-wheel carried by each windlass, a locking dog for engagement with the ratchet, and a lever in connection with each locking dog having an arm extending into the path of abnormal movement of the juxtaposed end of the bridge.

3. In a bridge structure including end trucks, track rails for the trucks and a bridge pivotally carried by the trucks; the combination of a locking means for the trucks comprising locking shoes pivoted to the trucks and adapted to wedgingly engage the rails to locking the trucks against movement with respect thereto, hammer weights associated with respective shoes and means associated with the hammer weights and shoes, for normally holding said shoes and inner weights in raised position, said means being releasable upon certain relative movement of the bridge and trucks.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

CHARLES BERGHOFER.

Witnesses:

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EDW. W. SHEEHAN.