

(No Model.)

W. W. HUNTLEY.

RUDDER.

No. 381,786.

Patented Apr. 24, 1888.

Fig. 1

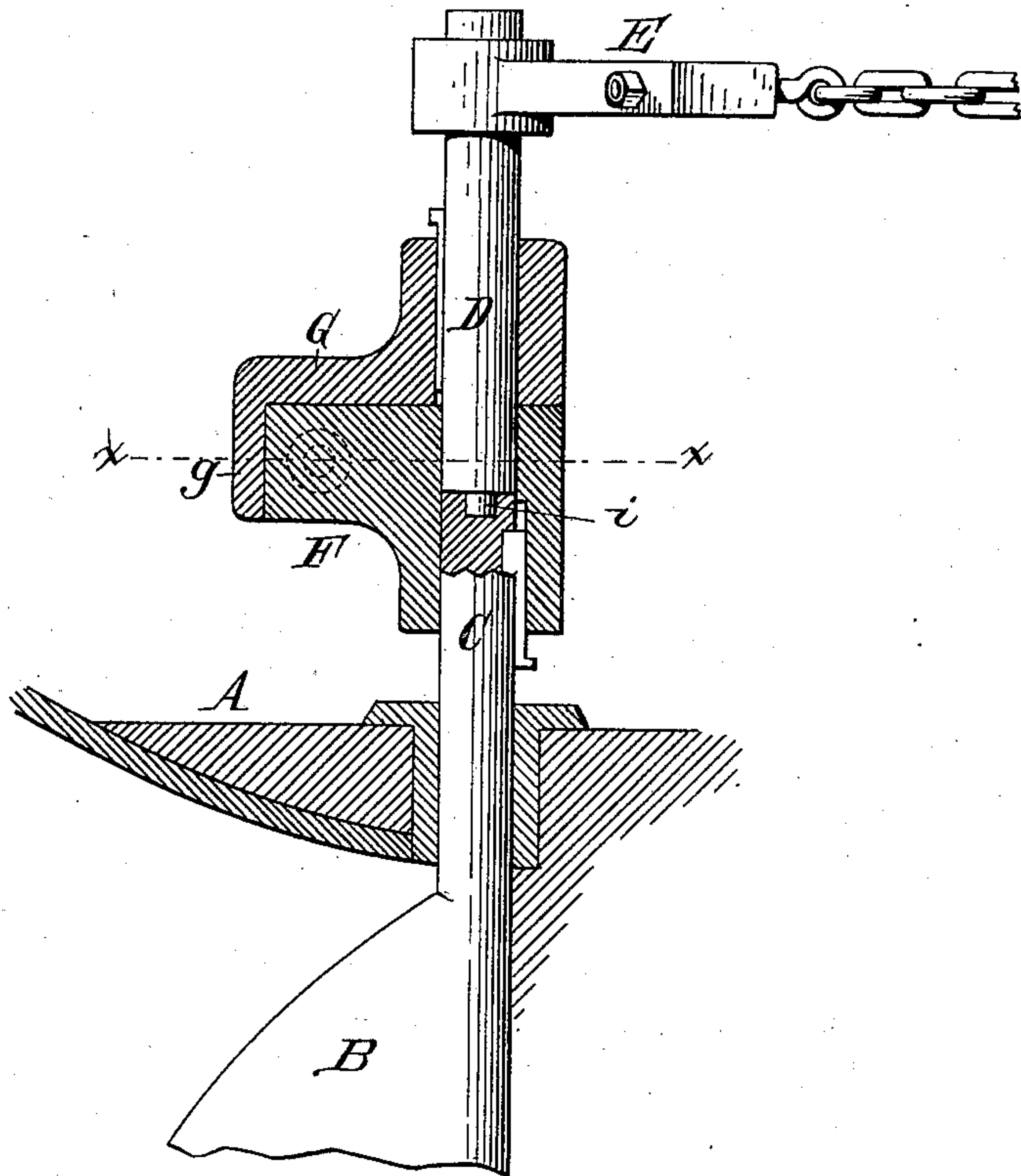
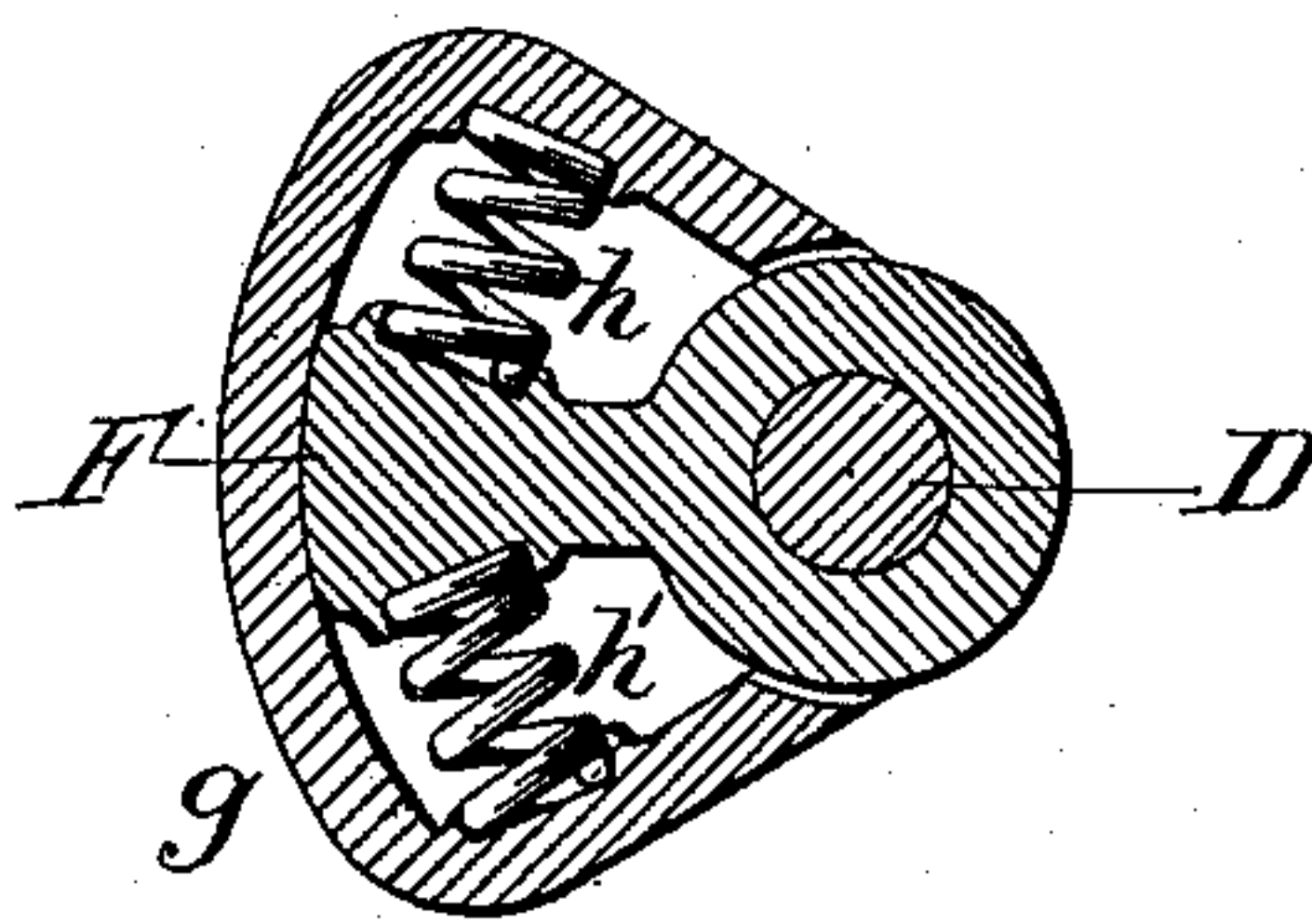


Fig. 2.



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UNITED STATES PATENT OFFICE.

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RUDDER.

SPECIFICATION forming part of Letters Patent No. 381,786, dated April 24, 1888.

Application filed December 12, 1887. Serial No. 257,621. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. HUNTLEY, of Silver Creek, in the county of Chatauqua and State of New York, have invented new and useful Improvements in Rudders, of which the following is a specification.

This invention relates to ships' rudders, and has the object to render the rudder yielding, so that it can change its position within certain limits independently of the tiller-head or steering-gear when subjected to an abnormal or excessive pressure or blow, which might in the absence of such provision cause breakage of the rudder or its fastenings or of its operating parts, thereby endangering the safety of the vessel. It is well known that the rudders of vessels, especially those of steamships, which are operated by steam steering mechanism, are frequently subjected to excessive strains in heavy seas, especially when the rudder is hard up, which strains result frequently in a breakage of the steering mechanism at a critical period.

My invention has the object to relieve the rudder from such excessive strains; and it consists of the improvements which will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section of a rudder provided with my improvements. Fig. 2 is a horizontal section in line *x x*, Fig. 1.

Like letters of reference refer to like parts in the several figures.

A represents a portion of the stern of a vessel; B, the rudder; C, the lower part of the rudder-post extending upwardly therefrom; D, the upper part of the rudder-post, and E the tiller-head or other contrivance secured to the upper end of the rudder-post and connected with the steering-gear by which the rudder is operated.

The two parts C and D of the rudder-post are arranged vertically in line with each other, and are connected by a yielding coupling, which compels both parts of the rudder-post to turn simultaneously in the normal working of the rudder, but permits each part of the rudder-post a limited independent movement under excessive or abnormal strains. As shown in the drawings, this yielding coupling is constructed in the following manner:

F represents an arm secured to the upper end of the lower part, C, of the rudder-post, and projecting laterally therefrom.

G represents an arm secured to the lower end of the upper part, D, of the rudder-post, and resting on the arm F. The upper arm, G, is provided with a downwardly-projecting marginal flange, *g*, which overlaps the face and sides of the lower arm, F, the side portions of the flange *g* being arranged at a suitable distance from the sides of the lower arm, F, to permit the latter the requisite play or movement within the arm G.

h h' represent springs interposed between the side portions of the flange *g* and opposite sides of the lower arm, F. These springs may be constructed of steel, rubber, or other suitable material, and are made of sufficient strength and stiffness to cause both arms, F G, and the parts of the rudder-post secured thereto to turn together in the ordinary or normal working of the steering apparatus, while permitting the rudder to yield under an excessive blow or strain. A number of such springs may be arranged on each side of the lower arm, F, and the arms and springs may be duplicated on the opposite side of the rudder-post, if necessary. The lower end of the upper portion, D, of the rudder-post enters the bore of the lower arm, F, whereby the upper part, D, is held against lateral displacement, and the two parts of the rudder-post may be further interlocked by a round pin, *i*, formed on one of said parts and entering a socket in the other part.

When the rudder is subjected to an excessive strain, the springs on one side of the arm F are compressed, thereby permitting the rudder to yield to the strain and avoiding the hard shocks which are liable to fracture the rudder or connecting parts. When the excessive strain has passed over, the compressed springs expand and return the rudder to its normal position.

I claim as my invention—

1. The combination, with the rudder, of a divided rudder-post and a yielding coupling connecting the parts of the divided rudder-post, substantially as set forth.

2. The combination, with the rudder, of a lower part of the rudder-post secured to the rudder, an upper part of the rudder-post se-

cured to the steering-head, and a yielding coupling connecting both parts of the rudder-post, substantially as set forth.

3. The combination, with the rudder provided with the lower part, C, of the rudder-post, and the upper part, D, of the rudder-post, provided with a steering-head, E, of an arm, F, secured to one part of the rudder-post, an arm, G, secured to the other part of the rudder-post, and springs interposed between said arms, substantially as set forth.

4. The combination, with the rudder provided with the lower part, C, of the rudder-post, and the upper part, D, of the rudder-

post, provided with a steering-head, E, of an arm, F, secured to one part of the rudder-post, extending beyond the latter and receiving the end of the other part of the rudder-post, an arm, G, secured to the other part of the rudder-post, and springs interposed between the arms F and G, substantially as set forth.

Witness my hand this 7th day of December, 1887.

WILLIAM W. HUNTLEY.

Witnesses:

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