

Feb. 28, 1939.

R. C. MORGAN

2,148,911

GRABHOOK

Filed June 26, 1937

Fig. 1.

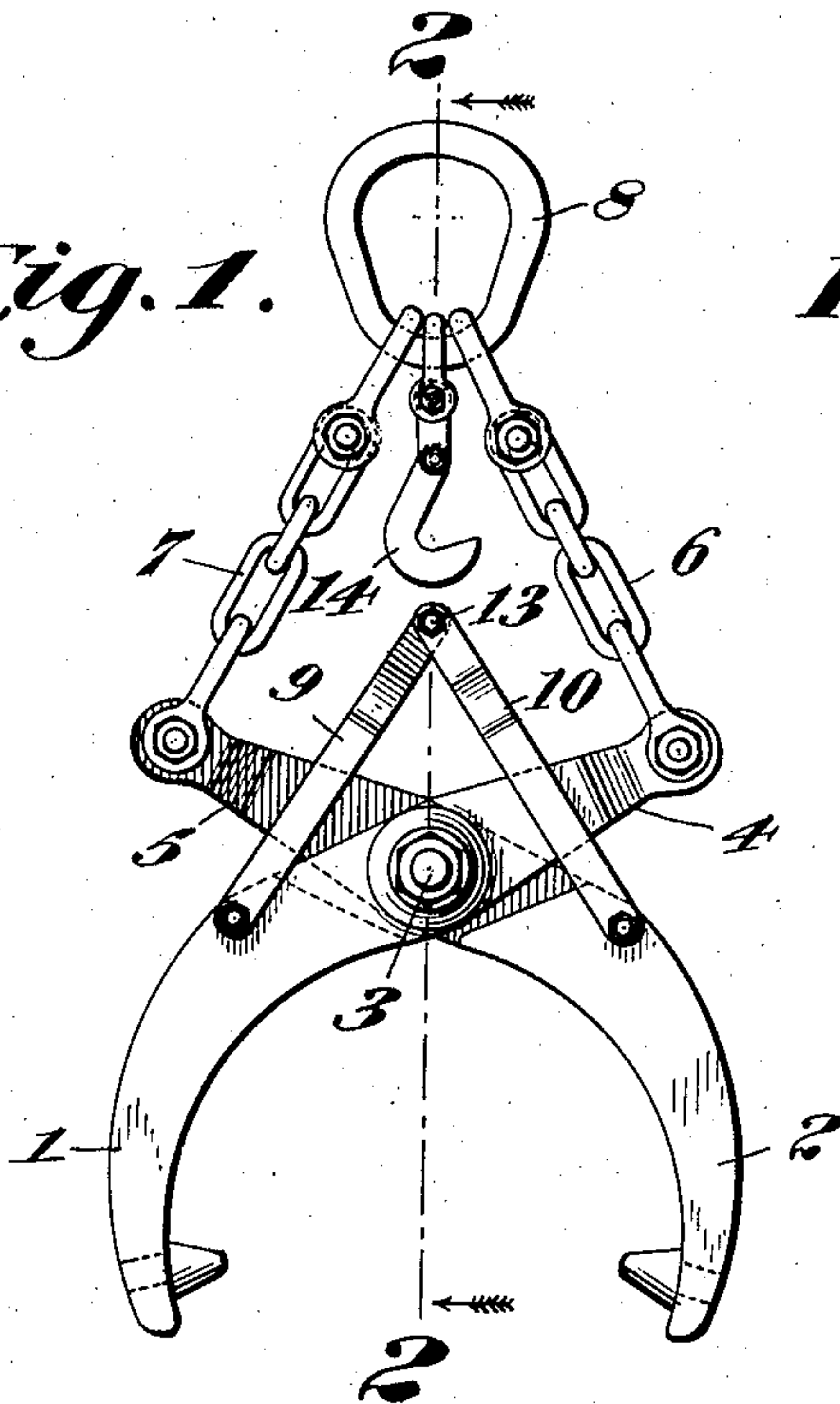


Fig. 2.

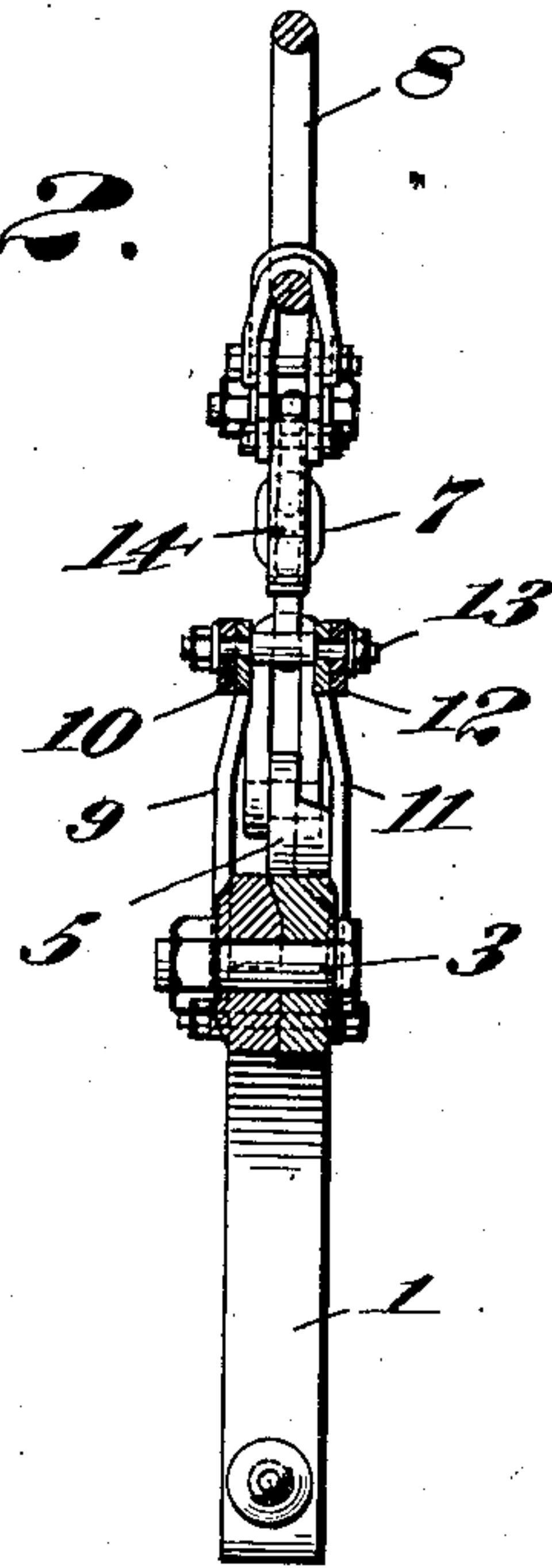
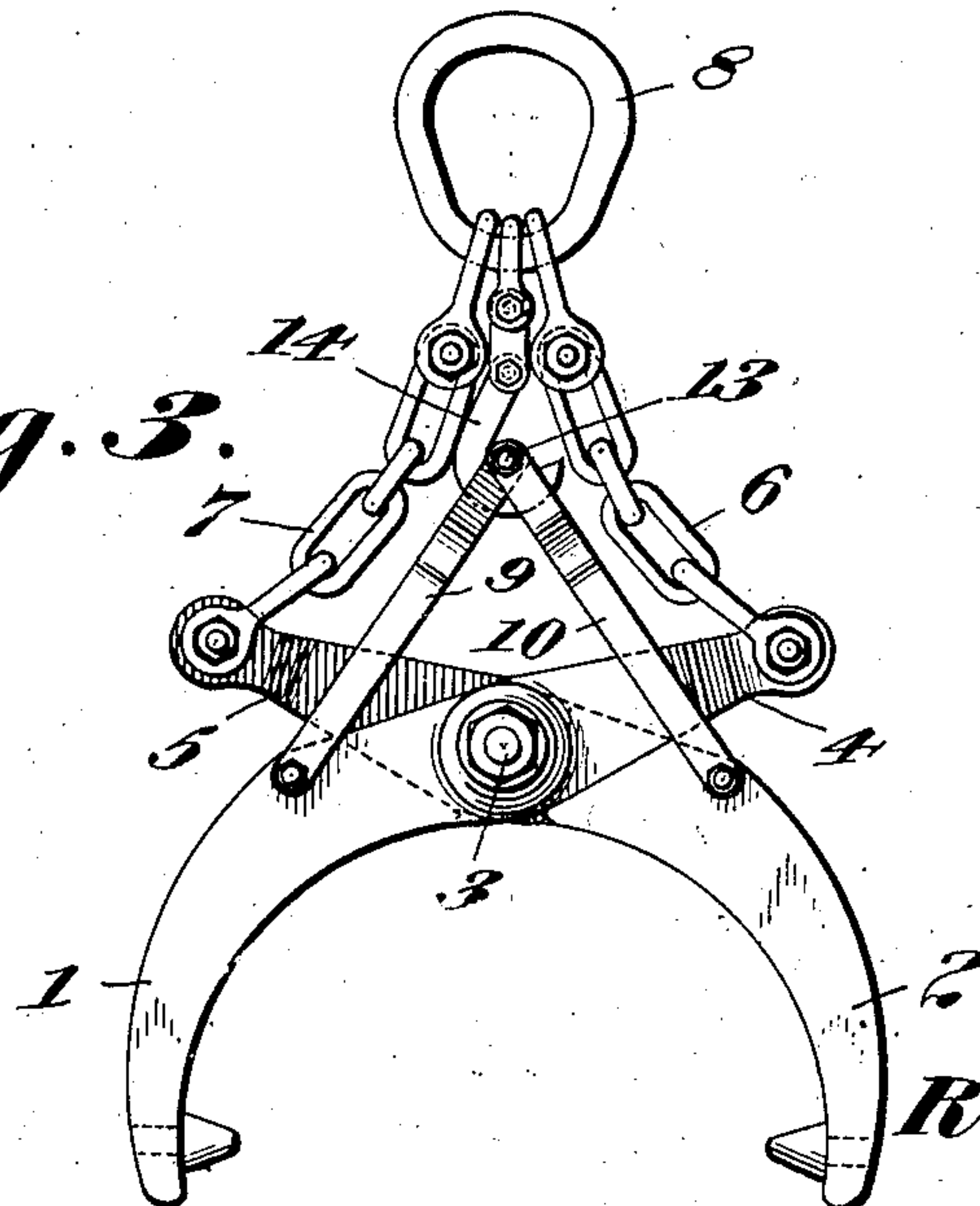


Fig. 3.



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UNITED STATES PATENT OFFICE

2,148,911

GRABHOOK

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Application June 26, 1937, Serial No. 150,591

1 Claim. (Cl. 294—118)

This invention relates to grab hooks, and in particular to certain improvements therein whereby grab hooks may be manipulated, when desired, in open position.

5 Grab hooks of the type contemplated by my invention comprise in general a pair of oppositely opposed jaws pivotally connected to each other, each jaw having an arm extending beyond the point of such pivotal connection in such a manner that the application of lifting means to the outer ends of said arms operates to close the jaws about the object to be raised and thereafter to raise said object.

10 Because of the manner in which grab hooks of this type are constructed they tend, when empty, to assume a closed position and as a consequence it is necessary when adjusting them over and about an object to be raised, to use independent means for opening the jaws.

15 Various devices have heretofore been employed for maintaining the jaws of grab hooks in open position, but such devices to the best of my knowledge must be operated, or brought in and out of operative position, manually. By my invention, a grab hook can be manipulated with their jaws in open position, by means which can be automatically engaged or disengaged by the operator of the grab hook without manual adjustment.

20 The inventive idea involved is capable of receiving a variety of mechanical expressions, one of which is shown, for the purpose of illustration, in the accompanying drawing, in which:

25 Fig. 1 is a front elevation of a grab hook built in accordance with my invention;

Fig. 2 is a section thereof on line 2—2; and

Fig. 3 is a front elevation thereof showing the jaws of the grab hook being held in open position, through the use of my invention.

30 Referring to the drawing, 1 and 2 denote oppositely disposed jaws pivotally connected at 3 and having, respectively, oppositely extending arms 4 and 5. At the outer ends of arms 4 and 5 are fastened chains 6 and 7 the ends of which chains are fastened to link 8 which in turn is operatively connected to any suitable lifting means, such as a crane.

35 The links 9, 10, 11 and 12 are pivotally connected to the jaws 1 and 2 and to the pin 13. Hook 14 is dependently fastened to link 8.

40 To operate the lifting tongs, hook 14 is engaged with pin 13. By the application of lifting means to link 8, the jaws are opened and raised. The tongs thus opened can be placed over the 45 object to be lifted and lowered until the jaws

contact said object whereupon hook 14 is released from engagement with pin 13. Hook 14 is then moved out of operative engagement with pin 13, by shifting link 8 in a suitable manner. After hook 14 has been moved out of engagement with pin 13, application of the aforesaid lifting means to link 8 will operate through chains 6 and 7 and arms 4 and 5 to close the jaws 1 and 2 and raise the object to be lifted.

45 When the object being handled reaches its destination, the lowering of the grab hook automatically releases the jaws. By lowering link 8 still further, hook 14 is brought into operative engagement with pin 13 and the grab hook may then be raised with the jaws in open position ready to be placed over the next object to be lifted.

50 It will be seen that through the use of my invention it is possible for the operator of the grab hook to manipulate the tongs in either open or closed position without the necessity for manually bringing said hook 14 and said pin 13 in and out of operative relationship.

55 It will further be understood that the particular feature of my invention which produces this novel and useful result is the use of the flexible chains 6 and 7 to connect the arms 4 and 5 to the link 8, whereby said link 8 and dependent hook 14 are not restricted to a vertical motion to and from the pin 13, as is the case if rigid links are substituted for the chains 6 and 7, but are also enabled to move horizontally with relation to said pin, as a result of which the necessity for manual adjustment of said hook and said pin is dispensed with. Obviously, other flexible connections may be substituted for the chains 6 and 7. Accordingly where reference is made in the claims to "a flexible connection between the arms of the jaws" it shall be deemed not to include means of connecting said arms to the lifting means which limit the motion of the lifting means to a straight line to and from the jaws.

60 Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

65 In a device of the class described, comprising a pair of pivoted jaws each having an arm extending therefrom, a flexible connection between the arms of the jaws, means attached to the flexible connection when actuated for closing the jaws, a pivoted link connection between the jaws, a hook pivoted to the flexible connection adapted to intermittently automatically engage the pivoted link connection when actuated to open the jaws.

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