Oct. 23, 1923. 1,471,448

C. W. BURROUGHS

GRIPPER

Filed June 1, 1922

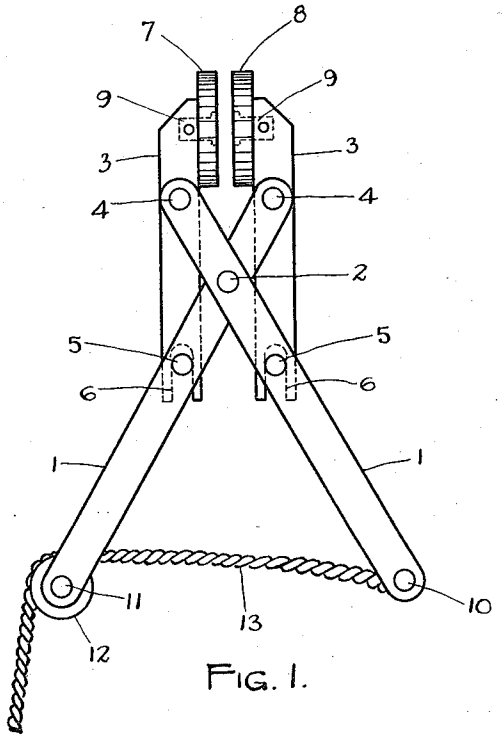


FIG. 1.

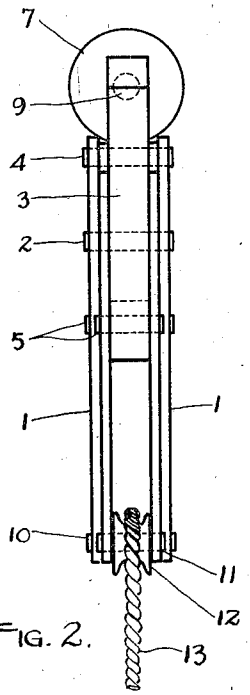


FIG. 2.

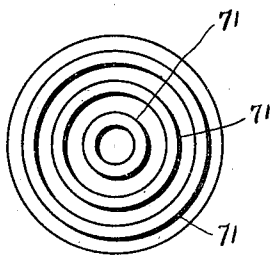


FIG. 3.

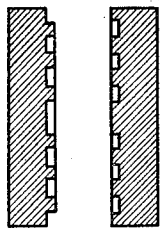


FIG. 5.

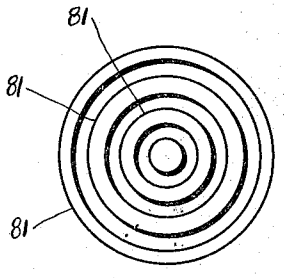


FIG. 4.

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Patented Oct. 23, 1923. 1,471,448

UNITED STATES PATENT OFFICE.

CHARLES WESLEY BURROUGHS, OF MONTREAL, QUEBEC, CANADA.

GRIPPER.

Application filed June 1, 1922. Serial No. 565,202.

To all whom it may concern:

Be it known that I, CHARLES WESLEY BURROUGHS, a subject of the King of Great Britain and Ireland, residing at the town of Montreal west, Province of Quebec, Dominion of Canada, have invented new and useful Improvements in Grippers, of which the following is a specification.

This invention relates to conveying apparatus, and more particularly to means for moving and lifting bags and the like containing heavy material.

It has for its object, to provide a gripper that can be readily and securely attached to the lug or corner of a bag, at the end of a tow line or hoisting rope.

A further object is to provide a gripper that can be instantly released without effort.

I am aware that various forms of gripping tongs are known and used, and that those having rotating jaws are not novel.

My invention consists of a pair of parallel tongs with rotating jaws having faces of a novel form and construction.

Reference is made to the annexed drawings, in which:—

Figure 1. is a side view of the gripper.

Figure 2. is a view of the edge of the gripper.

Figure 3. is a view of one of the faces.

Figure 4. is a view of the opposite face.

Figure 5. is a cross sectional view of the opposed faces.

In the form shown in Figure 1. the levers 1.—1. are pivoted together at 2. and also each lever is pivoted to one jaw arm 3. by the pins 4. 4. Each jaw arm 3. has a slot 6. in which the pins 5. 5. in the levers 1.—1., travel, when the gripper is opened or closed.

One of the levers 1. has a grooved pulley 12. journalled on a pin 11., while the other lever has a terminal pin 10. to which the end of the rope 13. is secured.

To the ends of the jaw arms 3. 3. are pivotally attached the jaw faces 7. and 8. These jaw faces are circular in form and are constructed with concentric grooves 71. and 81. adapted to mesh when brought together, as will appear by the view shown in Figure 5. The grooves of one face are made slightly wider than the ridges of the other face, so that they mesh freely.

With such a construction, the gripper, when placed over the lug or corner of a bag, and the rope is drawn taut, becomes securely attached. By means of the rotation of the faces, the gripper at once takes a position in which the pull is direct, and owing to the matched concentric grooves there is no possibility of the bag slipping or becoming loose.

The gripper is instantly released by loosening the tension of the rope and spreading the levers.

Owing to the strong construction of the gripper, it is capable of withstanding rough usage.

The gripper can be operated by a toggle or other equivalent means, but I prefer to use the rope and pulley as shown and described.

Bags or containers, by means of this invention can be hauled or hoisted rapidly and released where desired instantly.

What I claim is:—

1. In a gripper, the combination of a pair of parallel tongs, with jaws having rotating gripping faces which are grooved concentrically, a tow rope and means to close the jaws by the tension of the tow rope.

2. In a gripper, the combination of a pair of parallel tongs, with jaws bearing circular rotating gripping faces and concentric grooves therein, adapted to mesh together, a tow rope and means to close the jaws by the tension of the tow rope.

3. In a gripper, the combination of a pair of jaw arms having rotating gripping faces, grooved concentrically with levers centrally pivoted together, each lever pivoted at one end to one jaw arm, and having a pin passing through a slot at the end of the opposite jaw arm, a rope secured to the end of one lever, and a grooved pulley journalled at the end of the other lever.

4. In a gripper, a pair of rotating jaw faces adapted to operate in parallel, grooved concentrically to form male and female faces which mesh together, having the grooves of one face wider than the ridges on the other face.

5. In a gripper, the combination of a tow rope and a pair of jaw arms operating in parallel and controlled by the tension of the tow rope, with circular gripping faces grooved concentrically and pivoted on the jaw arms to rotate freely.

CHARLES WESLEY BURROUGHS.