

No. 664,510.

Patented Dec. 25, 1900.

J. F. TRUMBLE.

STARTING JACK FOR ENGINE FLY WHEELS.

(Application filed July 9, 1900.)

(No Model.)

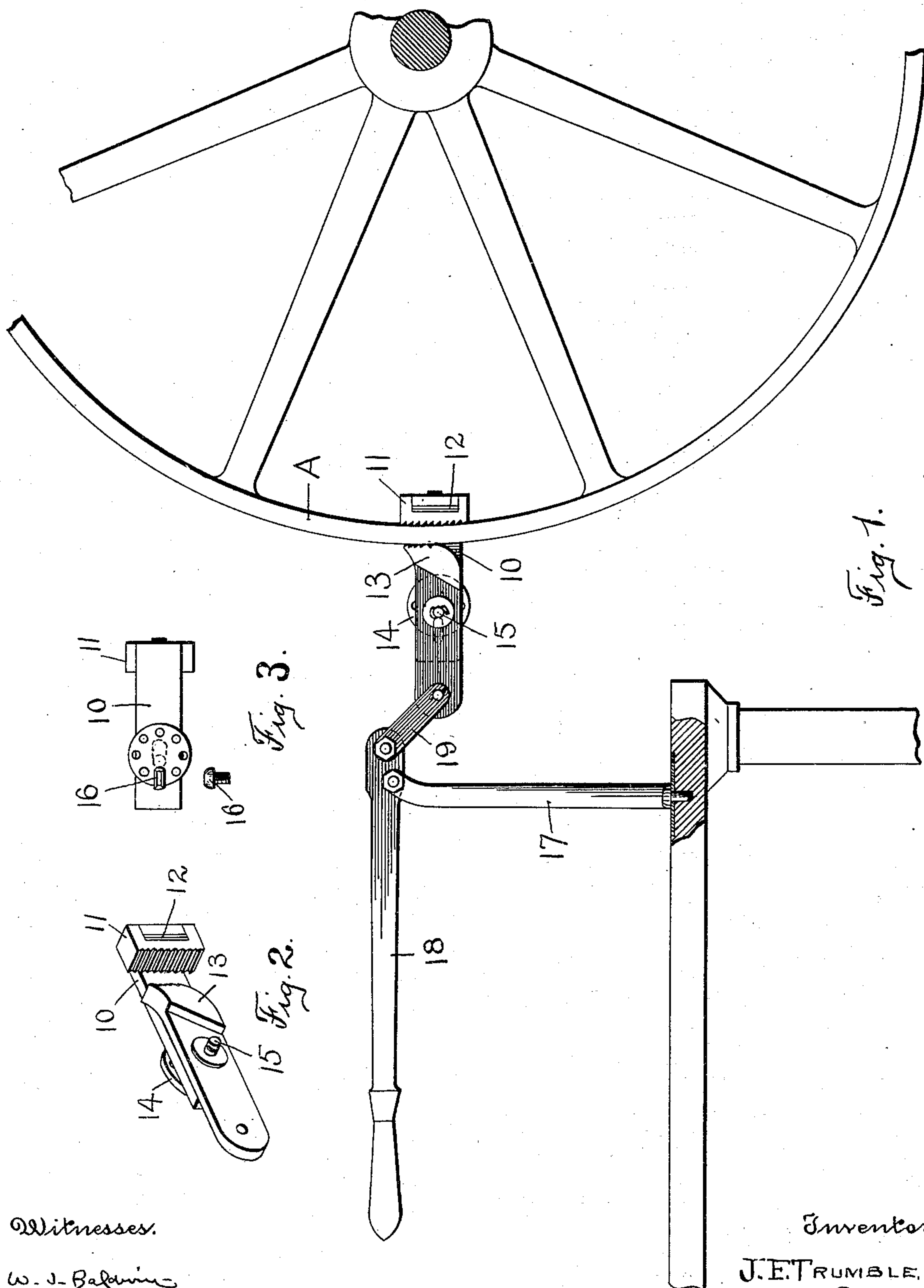


Fig. 1.

Fig. 3.

Fig. 2.

Witnesses.

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JAMES F. TRUMBLE, OF WHEELWRIGHT, MASSACHUSETTS, ASSIGNOR TO
HIMSELF AND GEORGE W. WHEELWRIGHT, OF SAME PLACE.

STARTING-JACK FOR ENGINE FLY-WHEELS.

SPECIFICATION forming part of Letters Patent No. 664,510, dated December 25, 1900.

Application filed July 9, 1900. Serial No. 22,905. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. TRUMBLE, a citizen of the United States, residing at Wheelwright, in the county of Worcester and State of Massachusetts, have invented a new and useful Starting-Jack for Engine Fly-Wheels, of which the following is a specification.

This invention relates to a hand-operated attachment or starting-jack for turning engine fly-wheels by hand; and the object of this invention is to provide an efficient, simple, and inexpensive starting-jack having clamping-jaws arranged to secure a strong bite or grip on the rim of a fly-wheel, said clamping-jaws being preferably connected together by an adjustable pivot, so that the jaws may be set or adjusted to cooperate with fly-wheel rims of different thicknesses.

To this end this invention consists of the starting-jacks for engines and of the combinations of parts therein, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a side view of an engine fly-wheel partially broken away, illustrating the application of my starting-jack thereto. Fig. 2 is a perspective view illustrating the clamping-jaws, and Fig. 3 is a detail view illustrating the construction for adjusting the pivot of the clamping-jaws to adapt the same to fly-wheel rims of varying thicknesses.

In nearly all large manufacturing plants it frequently happens that it is desirable to turn or operate the engine fly-wheel and the machinery driven therefrom by hand. The occasion for doing this not only arises when the engine is accidentally stopped upon one of its dead-centers, so that the admission of steam will not start the same, but also whenever alterations or changes are being made it is desirable to turn or operate the machinery by hand in order to test the same before power is applied, and in numerous instances also it is desirable to turn or operate the machinery by hand when steam-pressure is not available for running the engine. To provide connections for turning an engine fly-wheel by hand, a number of different forms of jacks have been devised. Some of these jacks have been found in practice to be objectionable, as they do not secure a suffi-

cient leverage for turning or operating heavy fly-wheels, and nearly all of the engine-jacks which have heretofore been employed are objectionable because they cannot clamp or bite the fly-wheel rim with sufficient force to secure a reliable action.

The especial object of my present invention is therefore to provide an engine-jack having clamping-jaws arranged to bite or clamp themselves firmly into engagement with a fly-wheel rim, said jaws being preferably adjusted together to adapt the jack in connection with fly-wheels having rims of varying thicknesses. To this end an engine-jack constructed according to this invention consists of a piece or elbow having a jaw for engaging the inner side of a fly-wheel rim and an outside clamping-jaw having a pivotal connection with said piece, which pivotal connection is preferably adjustable, the tail of the outside clamping-jaw having a link connection with an operating-lever which may be pivoted in an ordinary support.

Referring to the accompanying drawings and in detail, A designates an engine fly-wheel to which an engine-jack constructed according to my invention is applied.

The engine-jack, as shown in the drawings, consists of a piece or elbow 10, carrying a clamping-jaw 11 for engaging the inner side of the fly-wheel rim. The clamping-jaw 11, as herein illustrated, fits over the end of the elbow or piece 10, and one or more thin pieces of metal or shims 12 may be arranged back of the jaw 11 to take up wear and adjust the jaw 11 as desired.

Connected to the elbow or piece 10, preferably by means of an adjustable pivotal connection, is an outside clamping-jaw 13. To adjust the pivotal connection between the piece 10 and outer clamping-jaw 13, the piece 10 is preferably provided with a pivot-pin for receiving the piece 13, which pivot-pin may be adjusted or set to different positions. As shown, a pivot-pin, as 15, is carried by or formed integrally with a disk 14. The disk 14 is provided with a series of holes near its periphery, any one of which may receive the screw 16 for fastening the same to the piece 10. The pivot-pin 15 is eccentric with respect to its disk 14, so that when the disk 14

is turned so that different holes therein will be engaged by the screw 16. the pivot-pin will be moved to different positions in a slot in the piece or elbow 10. An ordinary operating-lever 18 is pivotally mounted in the usual support 17, the front end of the operating-lever 18 being connected by links 19 to the rear end of the clamping-jaw 13.

The foot of the upright or support 17 may be provided with pins or dowels to engage sockets in the engine-room floor, as shown, so that the engine-jack may always be set in the same relative position with respect to the engine fly-wheel in connection with which the same is to be used.

In using an engine-jack as thus constructed to turn the fly-wheel of an engine the jack is first set to the required position and the clamping-jaws adjusted as required by the thickness of the engine fly-wheel. When the operating-lever 18 is raised, the grip of the clamping-jaws on the fly-wheel will be relaxed and the clamping-jaws will swing or fall down in position to secure a new bite or grip upon the wheel-rim, so that when the end of the operating-lever is moved down again a powerful leverage will be exerted, which will first turn the outer clamping-jaw 13 to secure a firm bite or grip upon the engine fly-wheel rim and will then act to lift or raise both clamping-jaws to turn or advance the fly-wheel.

I am aware that changes may be made in the relative proportions and arrangements of parts in an engine-jack constructed according to my invention by those who are skilled in the art without departing from the scope thereof as expressed in the claims. I do not wish, therefore, to be limited to the form of engine-jack which I have herein shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a starting-jack for turning engine fly-wheels, the combination of an elbow-piece having a jaw for engaging the inner side of a fly-wheel rim, an outside clamping-jaw hav-

ing a pivotal connection therewith, an operating-lever connected to operate the outside clamping-jaw, and means for adjusting the pivotal connection of said outside clamping-jaw to adapt the starting-jack for use in connection with fly-wheels having rims of varying thicknesses, substantially as described.

2. In a starting-jack for turning engine fly-wheels, the combination of a piece or elbow having a jaw engaging the inner side of a fly-wheel rim, a pivot-pin adjustably mounted in the piece or elbow, an outside clamping-jaw mounted on said adjustable pivot-pin, and an operating-lever connected to the rear of the outside clamping-jaw, substantially as described.

3. In a starting-jack for turning engine fly-wheels, the combination of the piece or elbow which carries the jaw engaging the inner side of the engine fly-wheel, a pivot-pin extending through a slot in the piece or elbow which carries the inner clamping-jaw, a disk having a series of holes for receiving a screw to hold the pivot-pin in its adjusted position, an outer clamping-jaw mounted on the pivot-pin, and an operating-lever connected to the outer clamping-jaw, substantially as described.

4. In a starting-jack for turning engine fly-wheels, the combination of the piece or elbow 10 having a jaw 11 for engaging the inner side of a fly-wheel, a perforated disk 14 having an eccentric pivot-pin extending through a slot in the piece 10, a fastening-screw 16 for holding the pivot-pin in its adjusted position, an outside clamping-jaw 13 mounted on the pivot-pin, and an operating-lever 18 pivoted in a support 17 and connected by links 19 to the rear end of the outer clamping-jaw 13, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES F. TRUMBLE.

Witnesses:

LOUIS W. SOUTHGATE,
PHILIP W. SOUTHGATE.

It is hereby certified that the name of the assignee in Letters Patent No. 664,510, granted December 25, 1900, upon the application of James F. Trumble, of Wheelwright, Massachusetts, for an improvement in "Starting-Jacks for Engine Fly-Wheels," was erroneously written and printed "George W. Wheelwright," whereas said name should have been written and printed *George W. Wheelwright, Jr.*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 22d day of January, A. D., 1901.

[SEAL.]

F. L. CAMPBELL,
Assistant Secretary of the Interior.

Countersigned:

C. H. DUELL,
Commissioner of Patents.