(No Model.)

T. W. HUGHES.

LADDER.

No. 352,922. Patented Nov. 23, 1886.

Fig. 1.

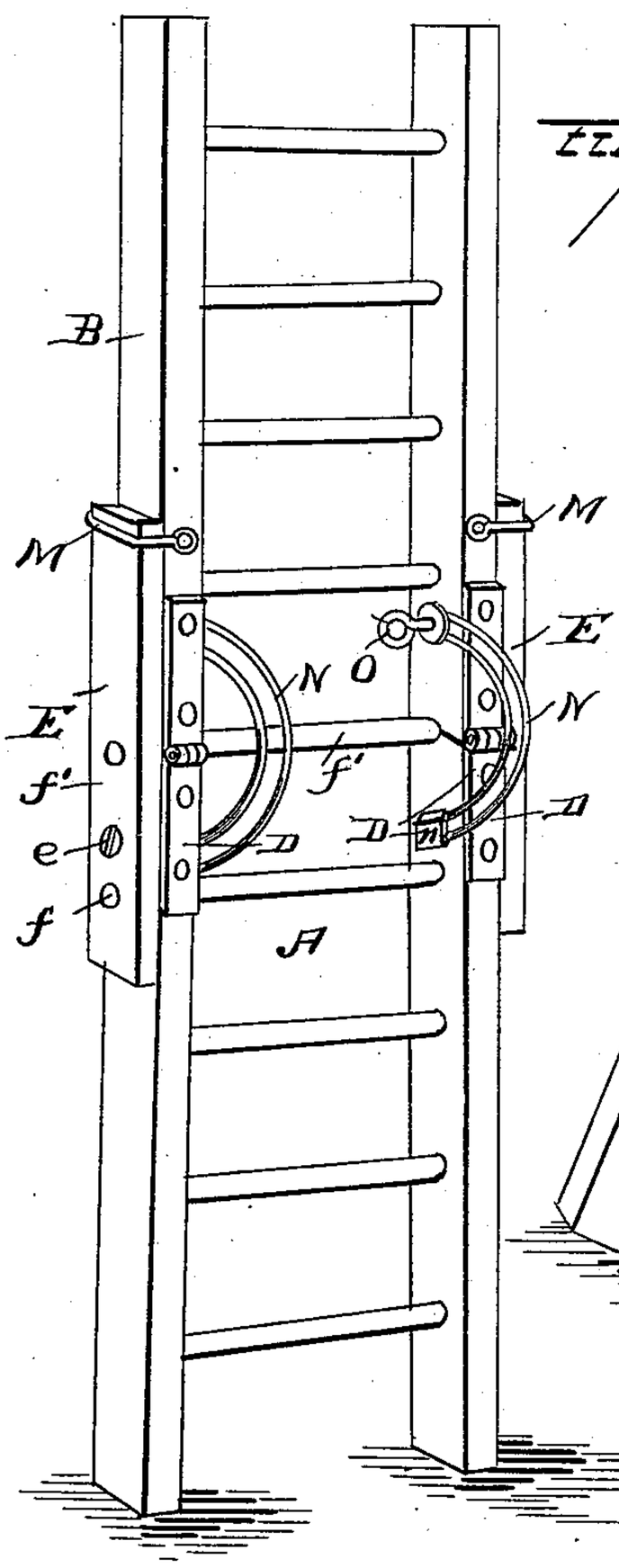


Fig. 2.

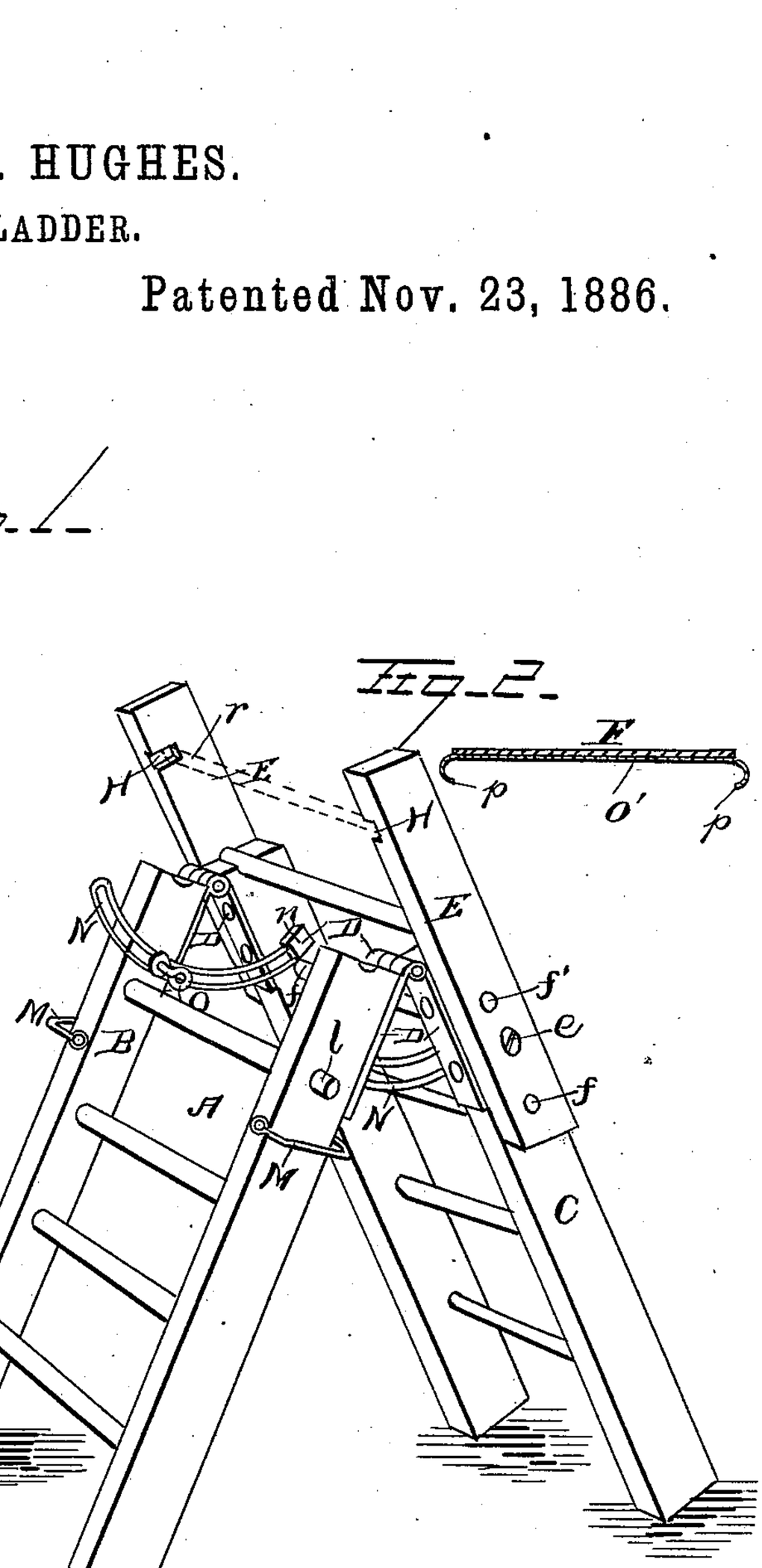
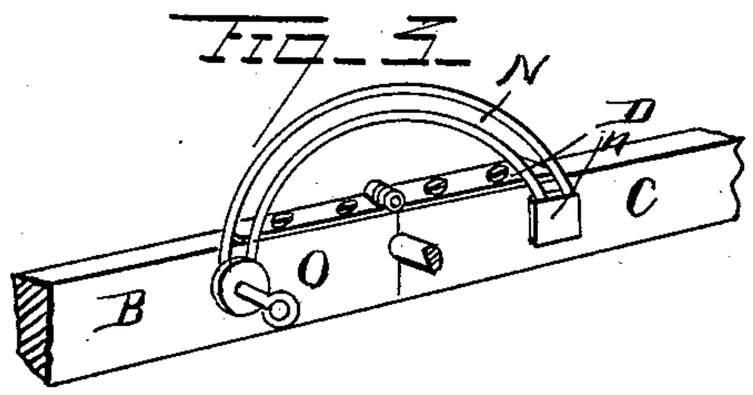


Fig. 3.



Witnesses

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THOMAS W. HUGHES, OF BUTLER, MISSOURI.

LADDER.

SPECIFICATION forming part of Letters Patent No. 352,922, dated November 23, 1886.

Application filed April 27, 1886. Serial No. 200,363. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. HUGHES, a citizen of the United States, residing at Butler, in the county of Bates and State of Missouri, have invented a new and useful Improvement in Ladders, of which the following is a specification.

My invention relates to an improvement in ladders; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my invention in use as a straight ladder. Fig. 2 is a similar view of the same used as a step or platform ladder. Fig. 3 is a detail perspective view of the joint of the ladder.

A represents a ladder, which is jointed at the center, so as to form an upper section, B, and a lower section, C. These sections are joined together by strap-hinges D, which are preferably made of malleable iron.

E represents side rails, which are secured to the outer side of the lower section by means of screws or bolts *e*, and by means of rungs *f* and *f'*, the ends of which project beyond the outer side of the lower section of the ladder and pass through the rails E. These side rails extend upwardly along the lower outer sides of the top section of the ladder for a suitable distance. Near the upper ends of these rails, on their inner sides, are made open grooves or notches H, which receive the projecting ends of the rung *l* in the upper section when the ladder is straight.

M represents loops or bails, which are pivoted to the upper section of the ladder, and are adapted to engage the upper ends of the side rails, E, so as to secure the upper section of the ladder firmly to the said side rails, thereby locking the upper and lower sections of the ladder very firmly together. The side rails, E, serve to stiffen the center of the ladder and prevent it from swaying and vibrating laterally.

N represents semicircular curved slotted arms, which are pivoted to the lower section of the ladder, as at *n*, and extend to the upper section of the ladder, the center of the rung *f'*, between the upper and lower sections of the ladder, forming the center of the circles of which the curved arms form segments. Through the slots in the curved arms pass set-screws O, which enter the inner sides of the side rails of the upper section of the ladder, and thus permit the said upper section to be clamped firmly to the curved arms at any desired adjustment and at any angle with reference to the lower section of the ladder.

In order to convert the ladder into a step or platform ladder the loops or bails M are first released from the upper ends of the side rails, E, and the upper section of the ladder is folded over in the position shown in Fig. 2. The platform F is placed on the rungs *l* and *f* in a horizontal position, the said platform having a metallic strap, O', secured on its under side, the ends of the strap being bent to form hooks *p*, to catch the rungs *l* and *f* and prevent the sections of the ladder from moving farther apart. The upper ends of the side rails, E, extend above the platform, thereby forming an extension, as shown, and a rung, *r*, may be secured in the notches H of the said side rails made vacant by the rung *l*, which rung *r* may be used to hang a bucket or basket upon when the step-ladder is used in picking fruit or painting.

A ladder thus constructed is cheap and simple, is very strong and durable, and may be used either as a straight or a step ladder at will.

Having thus described my invention, I claim—

1. The combination of the upper section, B, the lower section, C, hinged thereto, and the side rails, E, secured to the lower section and extending from the same to embrace the sides of the upper section, the said rails having the notches *h*, to receive the projecting ends of the rung *l* in the upper section, substantially as described.

2. The combination, in a ladder, of the upper and lower sections, pivoted or hinged together, and the curved arms connecting the said sections, the said arms being secured to one of the sections, and the other section being provided with means for clamping the arms thereto at any desired angle, substantially as described.

3. The combination, in a ladder, of the upper and lower sections, pivoted together, the

curved slotted arms secured to the lower section and extending to the upper section of the ladder, and the set-screws extending through the slots of the curved arms and entering the upper section of the ladder, for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

THOMAS W. HUGHES.

Witnesses:
E. C. GIBBS,
E. S. CHATTERTON.