E. WEIL & M. DEADY.

EXTENSION LADDER.

APPLICATION FILED DEC. 3, 1913.

1,089,608.

Patented Mar. 10, 1914.

2 SHEETS—SHEET 1.

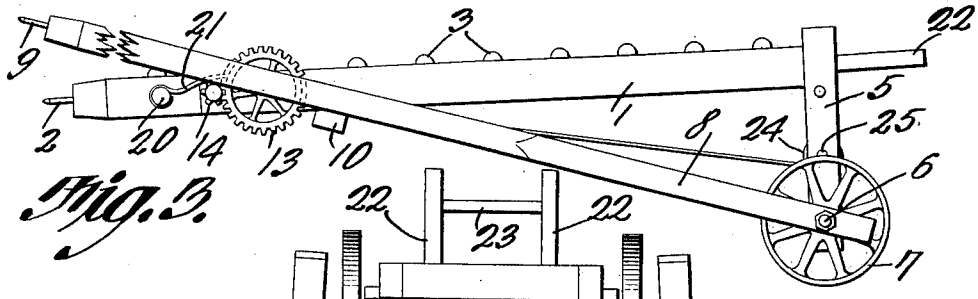


Fig. 3.

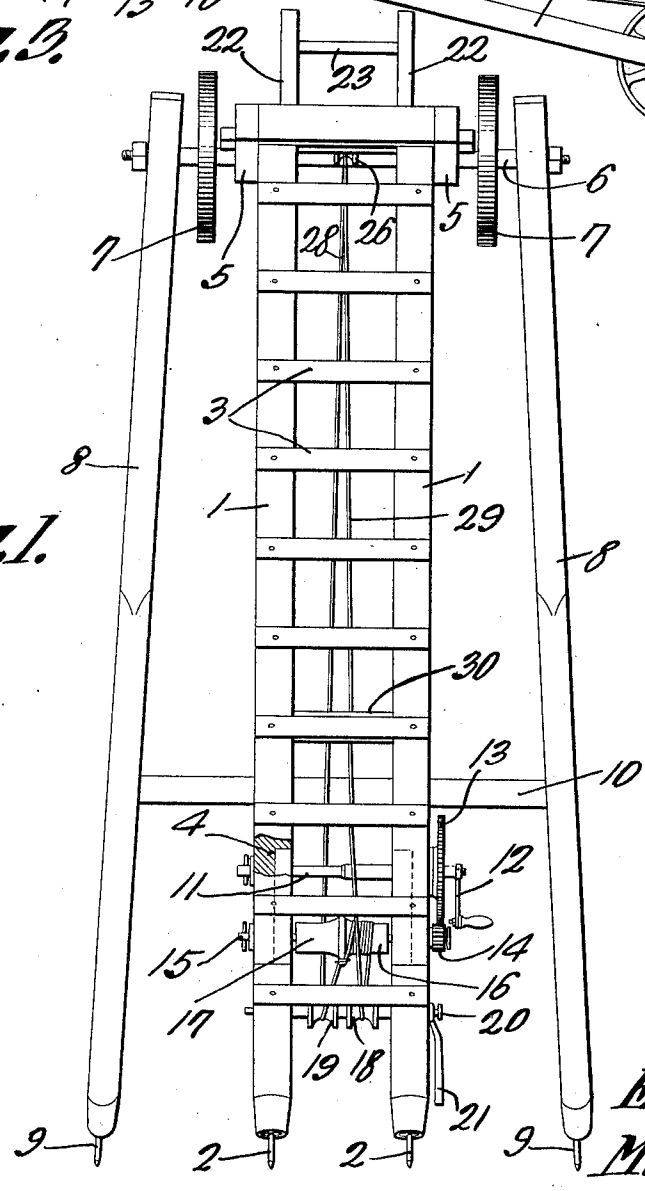


Fig. 1.

Witnesses

J. T. Tomlin

S. Willson.

E. Weil and M. Deady

Inventors

by C. A. Snow & Co.

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

E. WEIL & M. DEADY.

EXTENSION LADDER.

APPLICATION FILED DEC. 3, 1913.

1,089,608.

Patented Mar. 10, 1914.

2 SHEETS—SHEET 2.

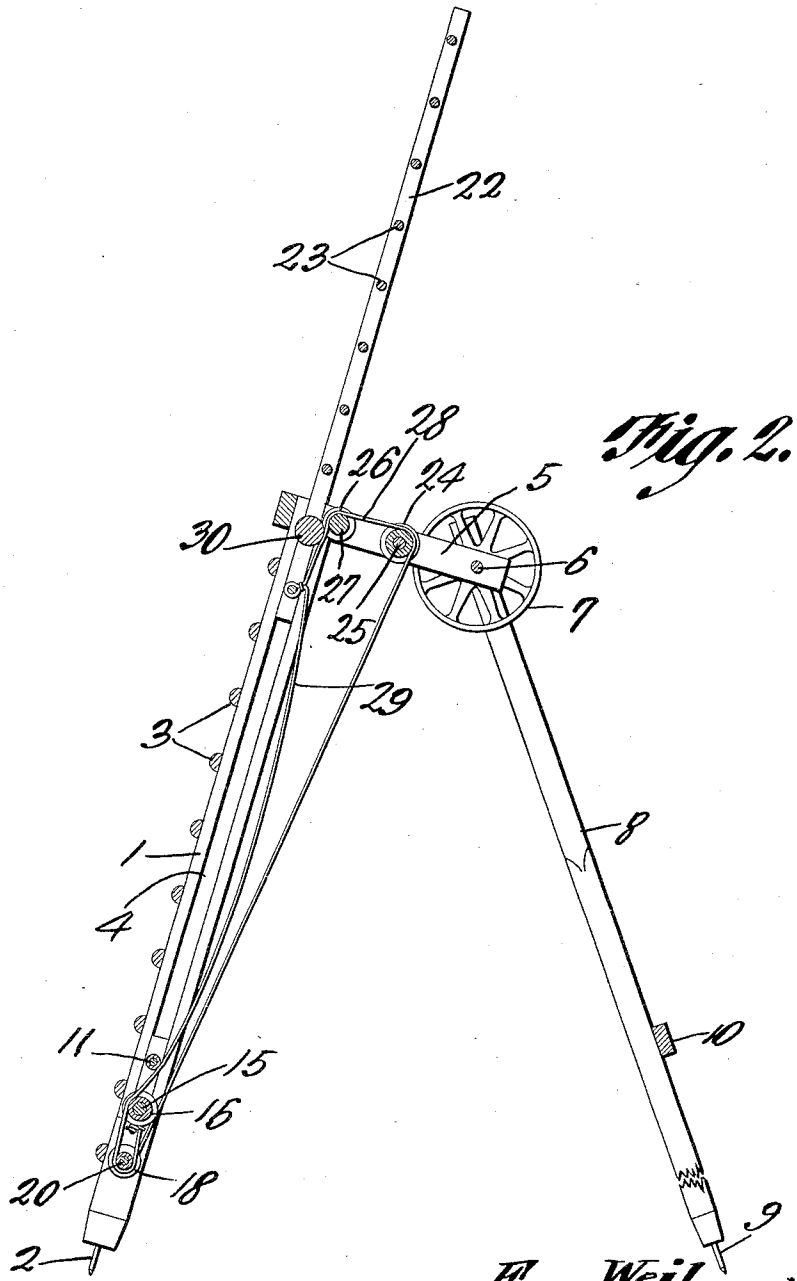


Fig. 2.

Witnesses

J. P. Tomeis

S. Willson.

E. Weil and
M. Deady Inventors

by C. A. Snow & Co.

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C

UNITED STATES PATENT OFFICE.

EDWARD WEIL AND MARTIN DEADY, OF LA FAYETTE, INDIANA.

EXTENSION-LADDER.

1,089,608. Specification of Letters Patent. Patented Mar. 10, 1914.

Application filed December 3, 1913. Serial No. 804,463.

To all whom it may concern:

Be it known that we, EDWARD WEIL and MARTIN DEADY, citizens of the United States, residing at La Fayette, in the county of Tippecanoe and State of Indiana, have invented a new and useful Extension-Ladder, of which the following is a specification.

This invention relates to extension ladders and more particularly to ladders of this type for use in orchards, one of the objects of the invention being to provide a ladder made up of a main section having supporting wheels connected to it and a slidable or secondary section movably mounted in the main section, whereby after the ladder has been wheeled to the place of use, it can be set up and the secondary or slidable section shifted longitudinally so as to elongate the ladder.

A further object is to provide a ladder of this type having braces or prop legs mounted on the axle of the supporting wheels and which are adapted to fold against the main ladder section while the ladder is being moved from place to place but which can be readily set up into active position for the purpose of supporting the ladder while in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a front elevation of the ladder set up, the secondary or movable section being shown in lowered position. Fig. 2 is a central longitudinal section through the ladder with the extension shifted upwardly. Fig. 3 is a side elevation of the ladder folded and in condition to be wheeled from place to place.

Referring to the figures by characters of reference 1 designates the side rails of the main ladder section, each of these rails being provided, at the lower end, with an anchoring pin 2 connected thereto in any preferred manner. The two side rails are connected by cross rungs 3 and formed in the inner side of each of the rails 1 is a longitudinal channel 4. Arms 5 are fixedly connected to the upper ends of the side rails 1 and mounted in these arms is an axle 6 on which supporting wheels 7 are mounted for rotation. This axle also serves as a means for pivotally connecting to the arms 5 the braces or prop legs 8 which are provided, at their free ends, with anchoring pins 9. Wheels 7 are preferably interposed between the prop legs 8 and arms 5 and the two prop legs are connected by a cross tie 10 adapted, when the prop legs 8 are folded upwardly relative to the side strips 1, to engage the said side rails, as shown in Fig. 3.

Journaled within the side rails 1 near the lower ends thereof is a cross shaft 11 adapted to be rotated in any suitable manner, as by means of a crank 12. Secured to this shaft is a gear 13 which constantly meshes with a smaller gear 14 secured to a transverse shaft 15 journaled in the side rails 1. Said transverse shaft carries spools 16 and 17 which can either be separate or integral and arranged below the spools are guide sheaves 18 and 19 mounted for rotation on a cross rod 20. A pawl 21 may be loosely mounted on one end of this rod 20, this pawl being adapted to receive the gear 13 so as thus to hold it against rotation in one direction. When the pawl is not in use it can hang freely as shown in Fig. 1.

Slidably mounted within the grooves or channels 4 are the side rails 22 of the supplemental or movable ladder section, these side rails being connected by rungs 23. A sheave 24 is supported between the arms 5 by a rod 25 and a guide roller 26 is also supported between the arms 5 close to the path of the ladder section 22, this roller 26 being formed with an annular groove 27. A rope 28 is secured to one of the rungs, preferably the lower one, of the slidable ladder section and extends upwardly over the roller 26 and sheave 24 and thence downwardly under sheave 19 and up to the spool 17. This rope lies within the groove 27. Another rope 29 extends downwardly from said rung of the slidable ladder section and passes under the sheave 18 and up to the spool 16. The two ropes 28 and 29 are adapted to be wound in opposite directions respectively upon their spools so that, when the

two spools are rotated in one direction, one of the ropes will be unwound while the other rope will be wound.

In order that the upward movement of the movable ladder section may be limited, a large stop strip 30 is arranged between the lower end portions of the side rails 22 so that, when the movable ladder section has been raised to a certain point relative to the other ladder section, this cross strip 30 will press against the roller 26, as shown in Fig. 2.

When it is desired to wheel the ladder from place to place, the parts are positioned as shown in Fig. 3 wherein the movable ladder section is housed between the side rails 1 and the prop legs 8 are folded across the sides of said rails. When it is desired to set up the ladder, the prop legs 8 are lowered and the ladder swung upwardly to the position shown in Fig. 1 so that the anchoring pins 2 and 9 will engage the ground. Should it then be desired to extend the ladder, the gear 13 if rotated, would actuate the ropes 28 and 29 so as to cause the movable ladder section to slide upwardly a desired distance. The extended position of the movable ladder section has been illustrated in Fig. 2. With said section thus extended, the dog or pawl 21, when placed in engagement with the gear 13, will hold the ladder section in its elevated position. By releasing the gear 13, the ladder section can be lowered by reversing the rotation of gear 13.

It is to be understood that the prop legs 8 can be of any length desired and when the structure is folded, as shown in Fig. 1, the rear ends of these legs can serve as handles whereby the structure can be moved readily from place to place, after the manner of a truck, the cross tie 10 operating to support the main ladder section out of contact with the ground by the free ends of the prop legs 8 are held in the hands of the person pushing or pulling the ladder.

What is claimed is:—

A ladder including a main section, arms fixedly connected to one end thereof and extending at an angle therefrom, an axle mounted in said arms, supporting wheels mounted on the axle, prop legs pivotally mounted on the axle and adapted to swing diagonally across the sides of the main section, a cross tie connecting the prop legs and adapted to engage the sides of the main section when the ladder is folded, the free ends of the prop legs constituting handles.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

EDWARD WEIL.
MARTIN DEADY.

Witnesses:
JOHN YEAGER,
JOSEPH M. CLARK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."