engage the head of the arm which is fashioned to engage the teeth and lock the lever in any desired position of adjustment.

9. In a foot-vise, the combination with a stationary jaw, a movable jaw, and a loose yoke embracing the two jaws, of a power-lever fulcrumed on the yoke and connected with the movable jaw, a foot-lever, a rod connecting the two levers, a locking-arm mounted on the foot-lever and adapted to engage teeth formed on the frame, and a spring normally holding the locking-arm in the released position.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD B. NEWNAM.

Witnesses:
A. J. O'BRIEN,
EDITH HIMSWORTH.

UNITED STATES PATENT OFFICE.

LUITJEN JACOB ROELFS DE VRIES, OF PANOLA, ILLINOIS.

LADDER.

SPECIFICATION forming part of Letters Patent No. 663,821, dated December 11, 1900.

Application filed June 25, 1900. Serial No. 21,431. (No model.)

To all whom it may concern:

Be it known that I, LUITJEN JACOB ROELFS DE VRIES, a citizen of the United States, and a resident of Panola, in the county of Woodford and State of Illinois, have invented a new and Improved Step-Ladder, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved step-ladder which is simple and durable in construction, designed for use in fruit-picking, washing, painting, scrubbing, and other purposes, and arranged to permit the user to reach a large area at each adjustment of the ladder and to permit of supporting baskets, pails, or other receptacles and articles within convenient reach of the user.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement. Fig. 2 is a rear end view of the same. Fig. 3 is an enlarged cross-section of the shelf supporting and adjusting device. Fig. 4 is an enlarged sectional plan view of the leg-evener, the section being on the line 4 4 in Fig. 1; and Fig. 5 is a face view of the leg-disk for the shelf supporting and adjusting device.

The improved step-ladder consists, essentially, of a ladder A and a leg B, having the upper ends of its side bars B' B^2 fulcrumed on the projecting ends of a rod C, extending transversely through the upper ends of the side bars A' A^2 of the ladder, as is plainly illustrated in the drawings, so that the ladder can properly fold in the leg B. The side bars A' A^2 of the ladder support the usual steps A^3 and a top platform A^4. The side bar A^2 is connected by a sectional brace D with the side bar B^2 of the leg B to limit the outward or normal movement of the leg relatively to the ladder A, as is shown in Fig. 1. A cross-bar E, arranged in the lower portions of the side bars A' A^2, serves to strengthen the ladder A by preventing the same from unduly spreading.

On the lower end of the side bar B' of the leg B is arranged an evener F, consisting, essentially, of a projection F', secured to the lower end of the side bar B' and extending through an elongated slot in an extension-piece F^2, fitted to slide lengthwise of the side bar B'. In the projection F' is arranged a pivot-pin F^3 for a cam-lever F^4, adapted to press the extension-piece F^2 in firm contact with the base F^5 of the projection F', so as to securely hold said extension-piece in position after the same is adjusted to the desired height, according to the unevenness of the ground or floor on which the leg B is set.

In order to lock the cam-lever F^4 in a closed position the free end of said lever is provided with a spring-clamp F^6, made U-shaped and adapted to straddle the sides of the side bar B' and its parts, the inner curved ends of the spring being at the inside of the side bar, so as to prevent the cam-lever F^4 from accidentally opening. By the operator swinging the cam-lever F^4 outward the extension-piece F^2 becomes unfastened and can be moved up or down on the side bar B' until the desired place is reached, according to the unevenness of the ground or floor, and then the cam-lever F^4 is swung into a closed position, the spring-catch engaging the side bar B' to hold the cam-lever in a closed position.

In order to enable the user of the ladder to conveniently support pails, baskets, and other receptacles and articles, a metallic shelf G is provided, having on its under side attaching-pieces G' G^2, of which the piece G' engages the upper end of the supporting-stick H for the shelf G, the said stick being engaged by a supporting and adjusting device I, held on the side bar B' of the leg B. On the upper end of the stick H is secured a bracket H', on which is secured the fastening-piece G^2 of the shelf G to securely hold the shelf in position on the upper end of the stick H. The device I is formed with a socket I' for the free passage of the stick H, and the latter is adapted to be locked in the socket by a cam-lever I^2, fulcrumed on the socket I (see Fig. 3) and arranged to clamp the stick in position after it is adjusted up or down to bring the shelf

formed on this base is thereby considerably increased and also the molecular distribution of the same, and the igniter itself is, with regard to the atmospheric influences, unsusceptible, since it of course only consists of the indifferent durable silicates of the original meerschaum, the oxids of the rare earths, and the platinum metal. Thus according to this process a fire-resisting, rapid and continuously acting, weather-resisting igniting body is obtained, which complies with the highest requirements of an igniter.

Having now particularly described the said invention, what I claim, and wish to secure by Letters Patent, is—

The herein-described process for producing solid igniting bodies consisting in the following steps in the sequence named, to wit, digesting a suitable fire-resisting substance with pure hydrochloric acid until a test shows no red residue; washing with hot water until no acid is indicated; digesting with absolute alcohol; digesting with sulfuric acid; heating slowly to a red heat in a platinum vessel; impregnating with a solution of a salt of a metal of the platinum group and thorium salts to which cerium is added until almost evaporated to dryness; and finally completely drying in vacuum, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EUGEN NOWAK.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.