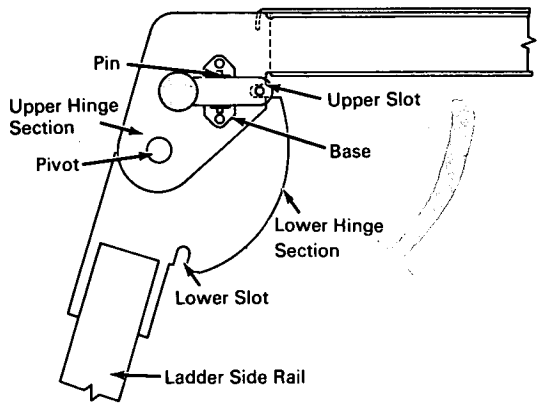
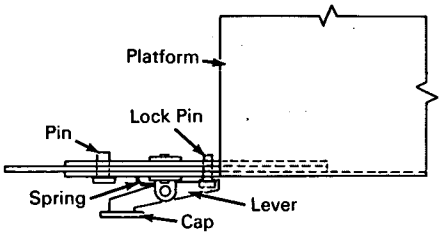
NASA TECH BRIEF

Adjustable, Self-Locking Ladder Includes Optional Work Platform





The problem:

Where access is difficult for checkout and maintenance of system components in elevated locations, the use of standard ladders limits the quantity and size of tools and expendables that can be handled at the work point. Additionally, where a system is of a complex, congested nature, frequent movement of a technician between the work point and his tools and expendables involves the risk of disturbance or damage to critical or fragile components.

The solution:

A height-adjustable ladder that mounts a self-locking platform at its top. The self-locking platform is retractable to fit into the normal configuration of the ladder for conventional ladder applications.

How it's done:

The ladder is in two sections, a lower and an upper. The square, tubular aluminum rails of the lower section telescope into like rails of the upper section, atop which a work platform is mounted. Adjustment is by bolts through mating holes in the two sections. Because the platform and its mounting method comprise the invention, only that is discussed here.

The platform is shown locked in the extended or working position. The latching mechanism is attached to the upper hinge section by a base that mounts a pivot pin on which a spring loaded lever, with a locking pin and release cap, rides. A lower hinge section, on which the upper hinge section pivots, is provided with an upper slot (locking pin engaged in illustration) and a lower slot. The platform is lowered to its down position (for conventional ladder application) by depressing the release cap which withdraws the locking pin from the upper slot. As the platform reaches a position parallel to the ladder side rails, pressure is removed from the release cap and the locking pin engages the lower slot in the lower hinge section, locking the platform against the side rails. The device is now essentially a standard extension ladder.

(continued overleaf)

Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B67-10067

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

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