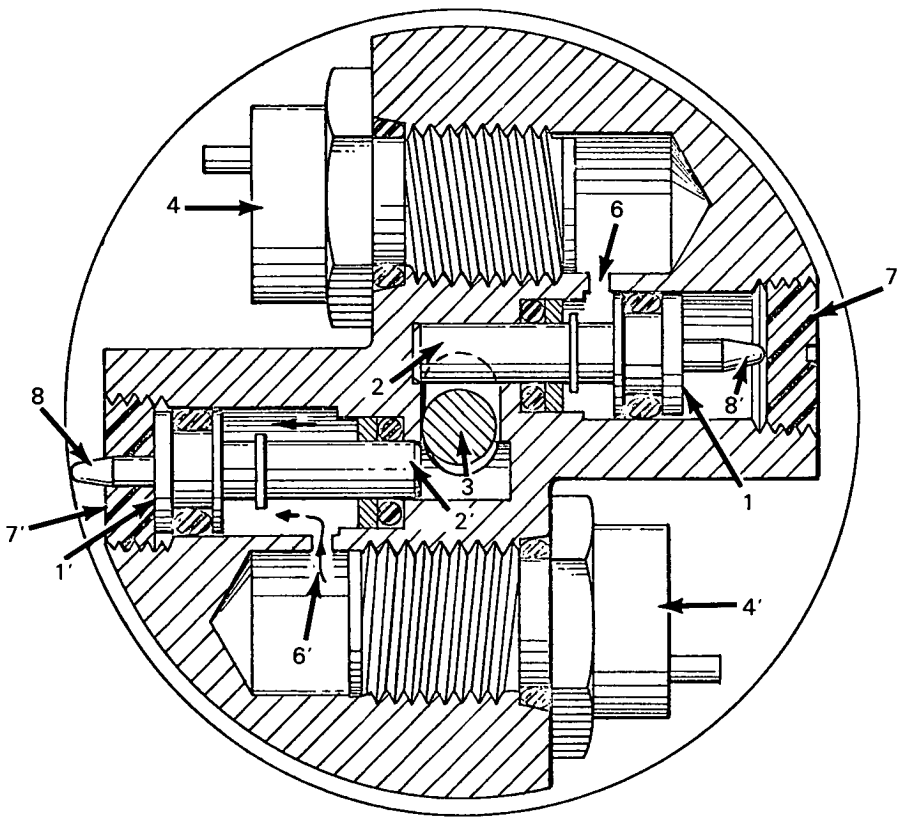
NASA TECH BRIEF

Pyrotechnic-Actuated Cable Release



In certain applications it is desirable to retain an attached load to a prime body until a predetermined time or event arrives. At such time or eventuallity it is often necessary to provide release of the attached load by a remote, unattended means. Such a means has been designed and reduced to practice that retains and then releases the attached load by means of a restrained cable that is released by electrical impulse on signal.

As shown in the figure, the device includes two pistons 1 and 1'. The cylindrical body members 2 and 2' of the pistons restrain a cable, to which an external load is attached, by retaining a ball 3 or similar object attached to the cable by swaging or other means. If either of the pistons is moved, the ball attached to the cable end is released, freeing the external load. The pistons are moved from their locked positions by firing of the squibs 4 and 4'. When the squibs are fired,

(continued overleaf)

the expanding gases flow through passages 6 and 6′ forcing the pistons to the right and left respectively. This moves the body members 2 and 2′ which retain the ball 3 away from the center of the device and toward the anvils 7 and 7′. The conical ends 8 and 8′ of the pistons penetrate the anvils which retain them in their most extended positions thus acting as dampers and preventing any possible rebound of the pistons which could interfere with the positive release of the load.

Note:

Documentation for the innovation is available from:

Clearinghouse for Federal Scientific
and Technical Information
Springfield, Virginia 22151
Price $3.00
Reference: B68-10535

Patent status:

No patent action is contemplated by NASA.

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