NASA TECH BRIEF

Marshall Space Flight Center

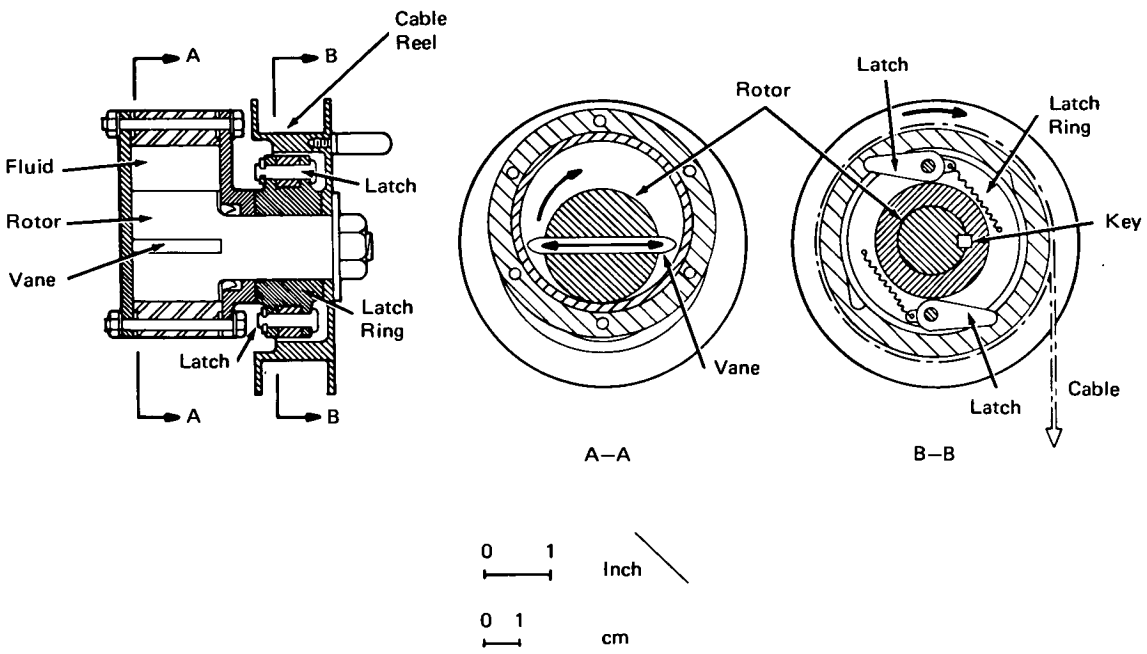
Emergency Descent Device

A new device has been developed for emergency descents from tall structures. The device includes a cable wound on a reel. A special assembly enclosed in a fluid medium controls the unwinding speed of the cable during a descent.

The basic mechanism as illustrated includes a cable reel, a latch ring, and a vane-rotor assembly enclosed in a fluid. When the cable is unwinding, the spinning reel engages two spring-loaded latches. The resulting torque is transmitted to the latch ring which is keyed to rotate the vane-rotor assembly.

While the vane-rotor assembly is spinning, the vane slides back and forth in the plane perpendicular to the rotor axis. This vane includes a number of bypass orifices (not shown). Fluid moving through these orifices controls the torque of the spinning rotor which, in turn, allows the reel to unwind at safe speeds.

The device is compact and reliable. It can be rewound very quickly because the reel disengages from the latches when it is turned in the opposite direction.



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(continued overleaf)

Notes:

1. Another emergency descent device is described in NASA Tech Brief 73-10369 (MFS-22720).
2. Requests for further information may be directed to:
   Technology Utilization Officer
   Marshall Space Flight Center
   Code AT01
   Marshall Space Flight Center, Alabama 35812
   Reference: B74-10226

Patent status:

Inquiries concerning rights for the commercial use of this invention should be addressed to:

Patent Counsel
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