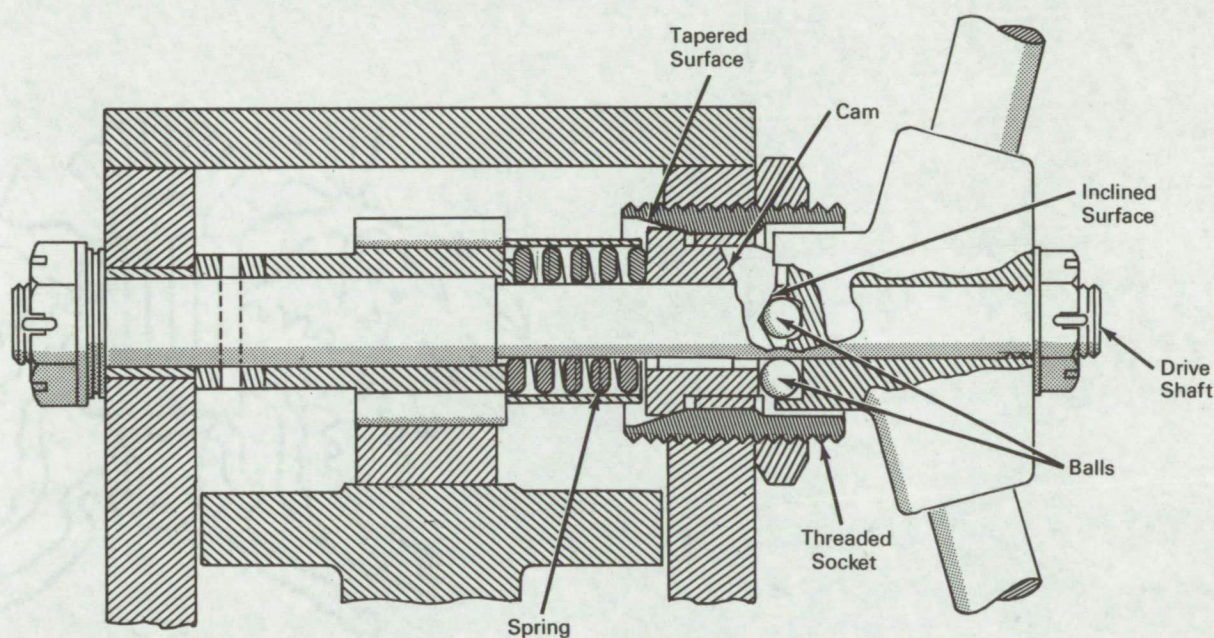


NASA TECH BRIEF



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Braking Mechanism Is Self Actuating and Bidirectional



The problem:

It is desired to effect a braking action on a moving item of equipment, in either direction of motion, immediately upon removal of the driving force and with no human operator involvement.

The solution:

A mechanism that automatically applies braking force, regardless of the driving force direction, and permits no coasting.

How it's done:

In operation, driving torque is applied in either direction of rotation to the drive shaft. Rotation of the drive shaft causes the balls that are seated against the cam to ride slightly up the cam surface, depressing the

spring and thus forcing the tapered surface of the cam away from the mating surface of the threaded socket. The shaft is now free to turn so long as a constant driving force is applied to it. Upon removal of the driving force, the balls return to their original seats against the cam and release the spring which causes the mating surfaces of the cam and threaded socket to re-engage, thereby producing immediate braking action.

Notes:

1. This device would be useful wherever free movement is undesirable after an object has been guided into a precise position. It could be used for precise control of the raising and lowering of objects on a chain hoist.

(continued overleaf)

2. The automatic brake could be used on wheeled equipment operating on slopes in circumstances that can not tolerate slippage.
3. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B66-10484

Patent status:

No patent action is contemplated by NASA.

Source: Joseph Pizzo
of North American Aviation, Inc.
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