

December 1971

Brief 71-10487

NASA TECH BRIEF

Langley Research Center



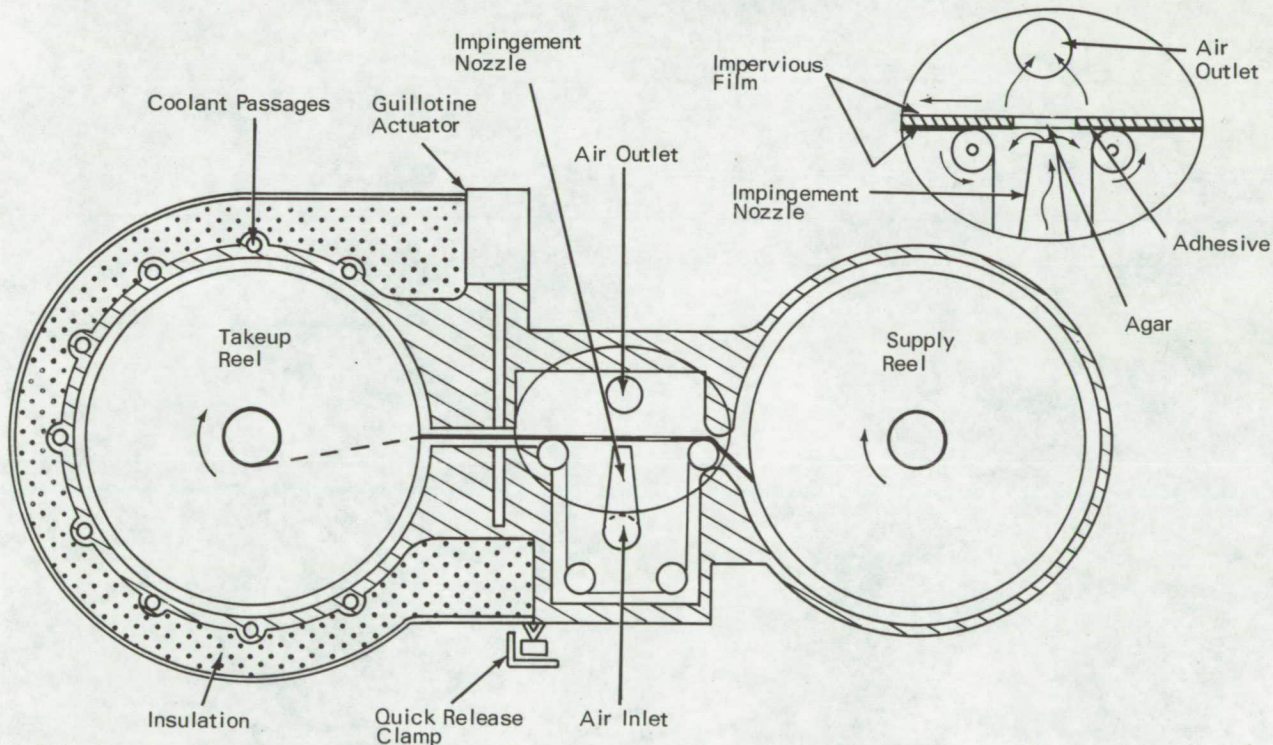
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Microorganism Sample Device

A compact device automatically collects microorganism specimens from circulating air streams. The device may find application in air pollution studies involving the collection of airborne microbial specimens.

impingement nozzle (see figure). The agar acts as an inert carrier for the specimens and provides sufficient moisture to prevent their dehydration.

Thin layers of the agar are deposited in square bands along one surface of a continuous length of



The device is based on a gel-impingement technique in which the microorganisms are separated from the atmosphere by a rapid 90° change in the flow direction of the air stream. The separated microorganisms impinge upon and adhere to an agar surface on an impervious plastic tape moving past an

the tape. Intervening areas are covered with an adhesive, and a second impervious film is pressed over the entire surface, thereby providing a protective cover and seal for the agar squares. The composite tape is wound on the supply reel, and the detachable cassette housing the takeup reel is

(continued overleaf)

insulated and provided with coolant passages to maintain a temperature of 10° F.

As the composite tape unwinds, the protective film is stripped off, the agar areas are exposed to the air flowing from the impingement nozzle, and the film rejoins and reseals the tape before it reaches the takeup reel. At the end of the sampling period, a spring-loaded guillotine is manually actuated to sever the tape and seal off the coolant passages in the cassette. A quick-release clamp is then opened, allowing the cassette to be removed.

Notes:

1. Related information is contained in NASA Tech Brief 69-10223.
2. No additional documentation is available.

Patent status:

No patent action is contemplated by NASA.

Source: J. M. Smith and L. L. Reed of
Lockheed Missiles and Space Co.
under contract to
Langley Research Center
(LAR-10258)