

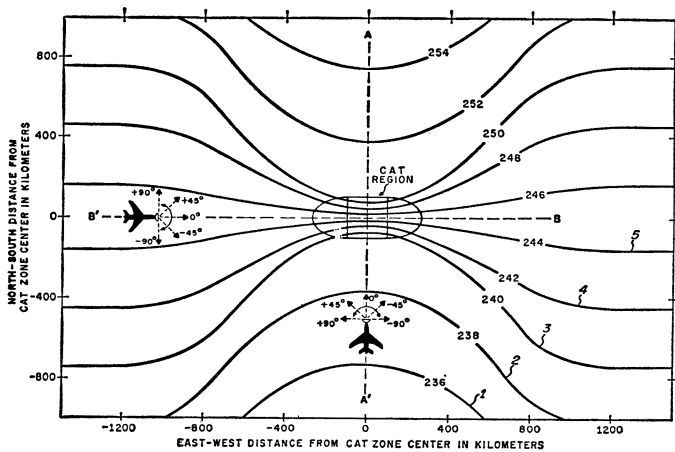
current patents

METEOROLOGY

Belling the CAT

Clear air turbulence is a mystery that meteorologists would love to solve: the sudden, violent phenomenon can tear a jetliner apart without warning.

One of the most promising ways of detecting CAT pockets assumes that they are accompanied by a sharp



change in temperature, which can be detected either by infrared or microwave detectors.

A CAT detector patented last week senses temperature far ahead and to the side of the aircraft by measuring microwave radiation put out by oxygen molecules, the intensity of which depends on temperature.

The remote temperature is compared with the temperature at the aircraft itself, and when a sharp change is noted, an electronic circuit tells the pilot which way to turn to avoid the disturbance.

The patent was assigned to Sperry Gyroscope Co. by the inventors, Benjamin R. Fow, Richard F. Hazel, and Wayne D. Mount. A Sperry spokesman says the remote temperature radiometer is being engineered by the company for use also in air pollution studies, but the whole CAT assembly hasn't been flown yet.

One difficulty with the temperature sensors is that the instrument has to be kept level. Temperature changes due to different altitudes, which would be picked up if the plane tips, give false alarms.

Other approaches to CAT detection include radar, which detects changes in the refraction of turbulent air; laser detectors, which pick up dust particles; and optical processes which detect changes in the scintillation of stars seen through turbulence. But none of the methods seem likely to bring a quick breakthrough, say experts.

Patent 3,359,557

HIGH ENERGY PHYSICS

Data From Wire Spark Chambers

A method of determining the position of particle tracks in a spark chamber now being used with atom smashers around the world earned a patent for its two inventors,

2/science news/vol. 93/6 january 1968

Dr. Victor Perez-Mendez of Lawrence Radiation Laboratory and James M. Pfab, who was also at LRL at the time of patent application in 1965.

Dr. Perez-Mendez says that the method provides a "means of determining the position of tracks in a spark chamber using an acoustic pulse to measure the magnetic field generated by the spark current. This makes it possible to handle large amounts of data electrically without having very large numbers of read-out wires." Only a single read-out wire for each plane of the chamber is required.

The method is being used with the particle accelerators at Brookhaven National Laboratory and at CERN in Geneva, the two highest energy machines doing experimental physics, as well as at many others in the United States and abroad. It will be incorporated into the auxiliary equipment at the new Russian atom smasher at Serpukhov, which has the world's highest energy of 76 Bev, and is new enough still to be in the shakedown stage.

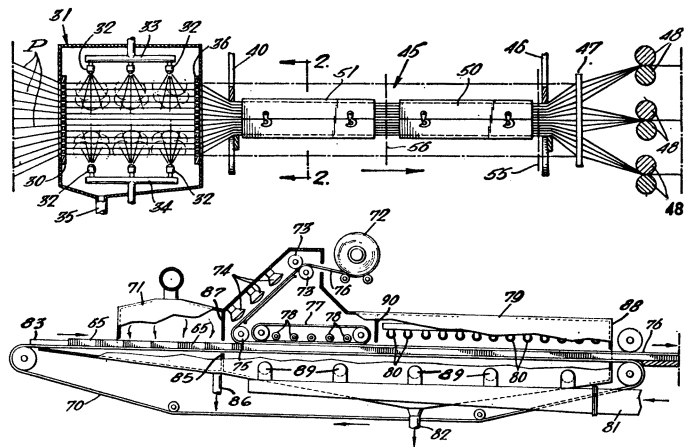
Patent 3,359,421

CARPETING

Chopping Frozen Yarn

Hand-woven variety and mass-produced efficiency are achieved by a new method of making carpets and upholstery that involves freezing the yarn in blocks and chopping off slices.

The invention won a patent for Paul E. Miller of



Norristown, Pa., who worked for 21 years with Burlington Industries.

In the process, the yarn is wetted and then pressed into blocks which can be of various shapes to form different patterns. The blocks are then frozen and slices of yarn are chopped off to form slabs. These slabs are then laid flat to form any combination of pattern or color desired. A plastic backing is stretched over the assembled blocks of yarn and heat-fastened to them.

Inventor Miller claims his method is the first to permit production of widely varied patterns in carpets without laboriously inserting individual piles in a woven backing.

Patent 3,359,147