

Current Patents

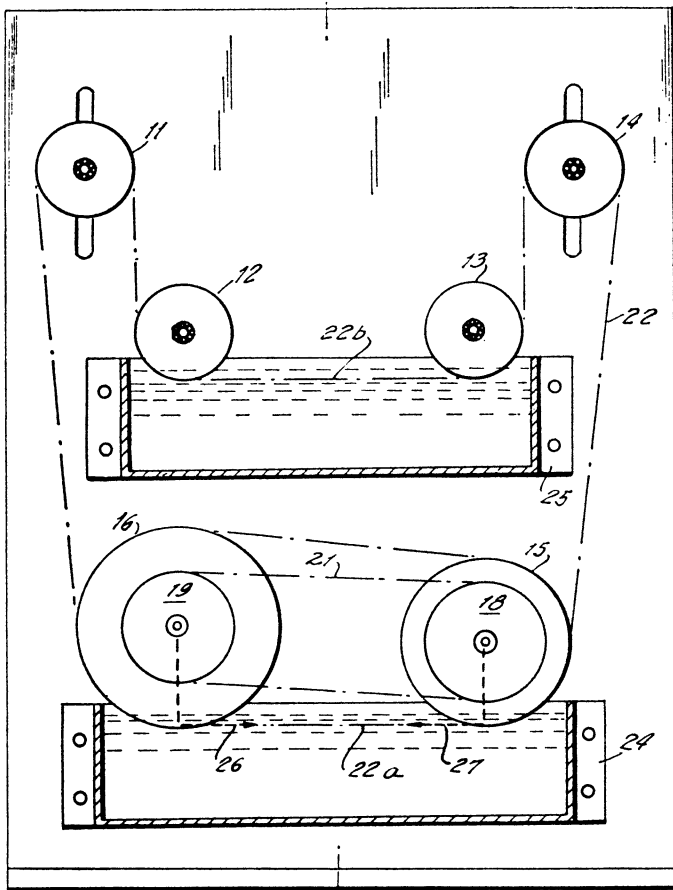
ENERGY PRODUCTION

Machine Uses Muscle Technique

Machines use chemical energy to produce mechanical work, but the intervening stages, such as the production of heat or electricity, cause waste.

Muscle tissue skips these intermediate stages. A chemical salt causes muscle fibers to contract, and its absence causes them to relax.

A machine that uses the same principle as muscle tissue was patented last week by a group of biologists at Israel's Weizmann Institute of Science. The machine passes a belt of contractile tissue through two solutions, one a salt concentration and the other pure water. The chemical action causes the belt to contract and expand continuously, turning a pulley. The belt moves at 20 centimeters per second.



A large number of artificial and natural materials were discovered by the Weizmann scientists to be usable as belt material. The one that worked best was a collagen made from sheep submucosa.

In the salt solution, the belt is passed over two pulleys, one larger than the other. When the belt contracts, the torque on the larger pulley is stronger, causing the belt to move in that direction. This brings a fresh, uncontracted, section of the belt into the salt bath, and moves the contracted section into the pure water, where it relaxes. The result is continuous motion in one direction.

The machine can also be used for desalinization, the patent claims. By mechanically driving the belt, the

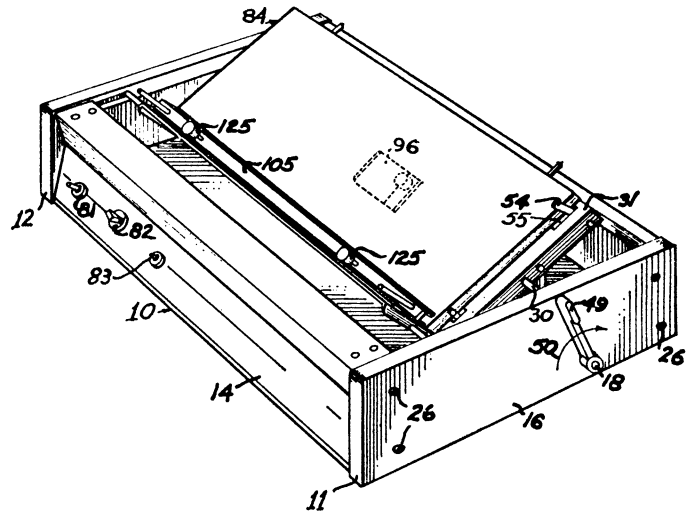
salt concentration can be increased in one bath and reduced in the other, leaving pure water.

The patent, No. 3,321,908, was assigned to the Weizmann Institute by the inventors, Aharon Katchalsky, Itzhak Z. Steinberg, Avraham Oplatka, and Amir Kam.

BINDERY

Infrared Book Binder

A book binder that is practical to use for a small number of copies was patented last week by Fred C. Bolick Jr. of Lanier Electronics Laboratory, Inc., Atlanta.



The binder should be particularly useful for the voluminous output sheets of computer data that come out in piles of accordion sheets too thick to staple, claims the inventor.

The machine has a clamp apparatus that lines up the edge of the sheets and presses them so that they flare out slightly. The operator then smears on glue and rotates the clamp to face an infrared heating element which dries the glue.

The patent, No. 3,321,786, was assigned to the Lanier Laboratory.

EXPLOSIVES

Tape Charge Can Be Knotted

Explosive tape is useful where containers have to be opened in a hurry, as on a military battlefield. But tapes developed so far aren't flexible enough to be folded or tied.

A recently patented explosive tape, consisting of a number of parallel strands held together by latex glue, can be tied and bent, claims its inventor, David Martin Welsh.

Welsh assigned U.S. patent No. 3,320,883 to the Canadian Safety Fuse Co., Ltd., of Montreal.

The tape strands have a core of fast-burning explosive wrapped in ordinary cloth and covered with waterproofing plastic. A detonating cap at one end of the tape sets off the explosive, causing the tape to burn off instantaneously. The tape can have an adhesive backing for easy application.