

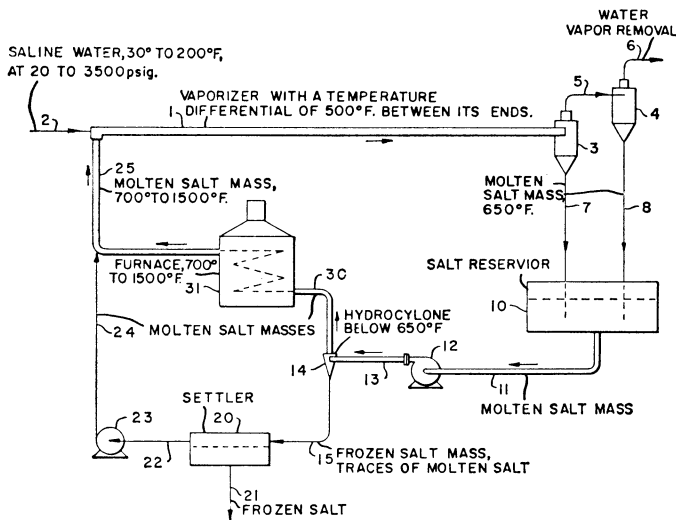
Current Patents

DESALINATION

Salts Themselves Remove Salt

One factor that makes desalination of sea water expensive is the way the salts tend to clog up surfaces, blocking the flow of liquids.

This problem is eliminated in a newly-patented desalination plant that uses salt itself, heated until it melts,



to distill the sea water. The water is taken off in the form of steam, and the left-over salts are carried away in liquid form along with the main stream of molten salt.

The invention by Donald E. Hardesty, who assigned the patent to the Shell Oil Co., involves a mixture of sodium hydroxide and sea salts, heated to about 700 degrees F. by conventional means (including nuclear power if the system is designed that way), at which point it melts. The molten mixture is pumped to an evaporator chamber where it mixes with the seawater to be treated.

The water is turned to salt-free steam; the salts it formerly contained are incorporated into the molten stream.

Hardesty says the steam could be used to drive turbines before it condenses, taking advantage of the high temperature produced by the molten salt.

Another advantage, he said, was that all the salts contained in the seawater could be recovered for later use.

PATENT 3,344,042.

SPACE ENGINEERING

Thin Atmosphere Analyzer

Space scientists often find that apparently simple measurements are surprisingly difficult. Tests routinely made in the laboratory aren't possible in space because the equipment either draws too much power or weighs too much.

Measuring the density of the outer atmosphere is an example, according to Charles A. Ziegler of Parametrics, Inc., Waltham, Mass. Ziegler received a patent last week for a lightweight, low-power gas analyzer suitable for

high altitude rocket sampling of the atmosphere above 45 miles.

The Ziegler analyzer measures air density by shooting out electrons and measuring the X-rays that result when the rays interact with gas molecules. When an electron is deflected by coming near an atom, it gives off X-ray radiation called brehmstrahlung. The more atoms in the atmosphere, the more radiation results, so the intensity of the X-rays reflects the density of the atmosphere.

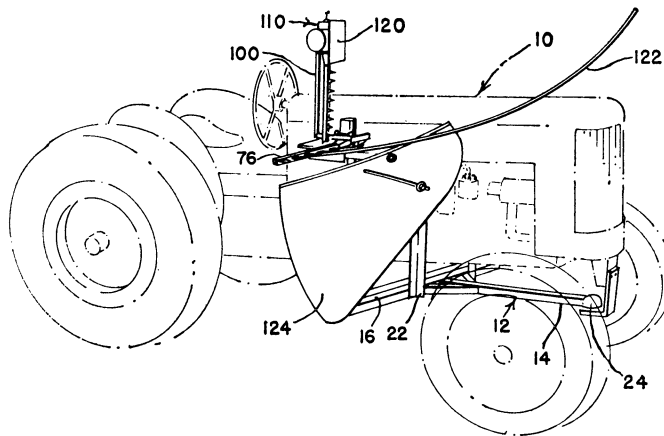
By stepping up the energy of the electron beam, the analyzer can also measure the chemical makeup of the atmosphere. Higher energy electrons cause different molecules to radiate particular kinds of X-rays.

PATENT 3,344,273.

MECHANICS

Tractor-mounted Vine Pruner

Since the days of Cyrus McCormick, inventors have produced a bewildering array of mechanical marvels that do the field work of many men. In recent years, a new generation of farm implements has been developed to



perform such delicate operations as transplanting seedlings, picking tomatoes, and harvesting asparagus.

Pruning grape vines falls into the delicate operation category; a pruning machine patented this week may move mechanization into that area.

The machine, patented by Harold E. Wagner, of Grandview, Wash., can prune more than 350 plants an hour, the inventor claims, compared to the 12-18 plants an individual can prune. Follow-up pruning is necessary, he admits, but this can be done at a rate of 40 plants an hour. The cost of pruning can thus be cut in half by using the machine, he claims.

The grape pruner attaches to an ordinary tractor and can be used also to prune raspberry vines, rose bushes and other berry vines.

For grape pruning, the machine automatically leaves a specified number of buds on each spur of the vine. The number of buds left can be adjusted manually.

PATENT 3,343,349.