of silica gel. The changing process can, in addition, be made quite rapid if several of these units equipped with the proper connectors are always available for rapid exchange with a spent unit. These tubes are applicable for use with any of the solid absorbents, such as granulated charcoal, in addition to silica gel.

*Cooling jacket for motor-driven Ten Broeck glass tissue grinder.* While preparing homogenized tissues it has been found convenient to keep the preparation cold by circulating cold fluid in an outer jacket that is fused to a Ten Broeck glass homogenizer, as is illustrated in Fig. 2. For some procedures tap water is cold enough, for others ice water or alcohol cooled in Dry Ice may be used as the cooling agent. The pestle may be attached to a stirring motor by means of a heavy rubber tube placed between a "hose-connection" on the pestle and the chuck of the motor. It is possible to observe the homogenizing process through the jacket. Rubber tubing connections permit movement of the jacketed portion of the homogenizer in an up-and-down motion over the pestle fixed in the motor.

ARTHUR D. MACK

*Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland*

17 December 1954.

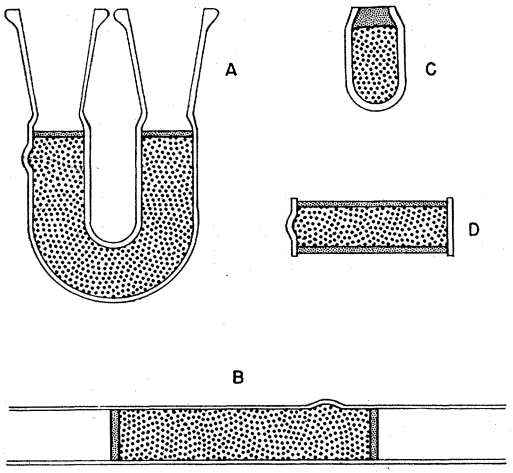


**Fig. 1.** Various types of permanently sealed solid-adsorbent drying tubes employing sintered glass disks.

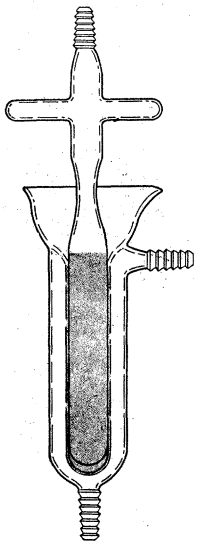

**Fig. 2.** Cooling jacket for motor-driven Ten Broeck glass tissue grinder.

## A Defense against New Ideas

I was flattered to see that my prewar dictum "There is no adequate defense, except stupidity, against the impact of a new idea" was still considered sufficiently relevant to justify printing [*Science* **120**, 963 (1954)]. However, recent events, in particular the leading article in the same number of *Science* by the board of directors of the AAAS, suggest that the dictum is outdated. I should like to amend it to read: "There is no adequate defense, except stupidity or a clumsy security system, against the impact of a new idea."

P. W. BRIDGMAN

*Lyman Laboratory of Physics, Harvard University, Cambridge, Massachusetts*

17 December 1954.

## Cycle Analysis through Industry Study

In March 1953 (*1*) I presented figures for the period 1922–30 to show that a fall in profit rate is followed by a decrease in the rate of investment. The figures given were based on totals for all United States corporations, without classification. The result is much clearer when the corporations are taken in industry groups (*2*).

Of the total increase of $54.0 billion in tangible corporate capital during the period 1922–30, $31.4 billion, or 58 percent, is represented by the utility sector, including transportation, and the service sector, including hotels, restaurants, entertainment, and so forth. Taking fixed capital only—that is, land, buildings, and equipment—the corresponding percentage is 66; in other words, two-thirds of the total increase in fixed capital for the entire corporate economy during that period occurred in its utility and service sectors. Of these two sectors, the service sector was relatively small. In either capital or earnings, more than nine-tenths was represented by the utility sector.

The net earnings of these two sectors of the corporate economy from operations, before deduction of interest paid but after deduction of taxes, so as to represent, comparatively, the net earnings on total tangible capital, are shown in Table 1, computed as a percentage of such capital; in addition, bond yields of the utility sector are also given for comparison (*3*). As the figures show, the earnings of both sectors held to a 6-percent level or better for the years 1922–26, inclusive, and then dropped to a new and fairly consistent level almost 1 percent lower. Bond yields dropped also but not to the same extent, so that the