

[537] Another natural field would be needed *basic researches*, which could be assigned, perhaps obligatorily or with subsidy, to associations or groups of them, when more suitable or financeable than through governmental, foundation, or university support. Merrill points out⁵²⁶ that in civil and mechanical engineering such basic work has not been so well attended to by American engineering schools as in Europe, nor sufficiently by corporations, all of which look mostly for early profitability. Another function today neglected would be invention for State and local governments, which as we told in ¶ 225 are the chief users of inventions in numerous fields, yet make almost none themselves. All these governments should form associations, or add to the functions of their present ones, to properly meet for the first time their needs for inventive progress. Where the work is peculiar and almost confined to Government, like sewage treatment, firefighting, or education, they might establish their own laboratories; but in other fields and these too, when the work is electronic, medical, or otherwise related to an established industry, they would doubtless call on the laboratories of other associations and existing corporations. The great point is that there be copious support for invention and research, and the second point is that the orders for invention should come from those having the most need, and the most understanding of their need.

[538] Still another function which could in many cases be assigned to various licensed associations, and which today begs grievously for support by someone, would be the creation of new fundamental inventions like the voice-operated writing machine, which today get little or no support, because neither the patent system nor any other institution is adapted to them. We have told their sad orphan story in chapter 8. The desalting of sea water languished for centuries in this limbo, but has lately been taken up by governments, our own to the tune of \$12.5 million (estimated for 1964), with resultant rapid progress and utilization (¶ 353). Our National Science Foundation, and various universities and private foundations (secs. 3 and 7 of chs. 9 and 10) do something, especially in fundamental researches, and with higher appropriations might well do more, or other Government offices be used, for this and certain new starts not related to any present industry, such as the reading machine (¶ 336), microprinting (¶ 337), novel indexing and various police techniques (¶ 347), inventions for the physically handicapped (¶ 350), atomic inventions and new power sources (¶ 353), hydroponics (¶ 358), and quartz (¶ 361). More suitable to the licensed associations might be calling on the radio and electronic industries to produce radio systems and the audiovisor for home-printed newspapers, point-to-point television, etc. (¶ 338-41), and the great electric machine for generating supreme music (¶ 342-5). The automobile industry, though it has failed to come up with a secure car lock, might be paid or directed to produce one (¶ 352), as well as the automatically guided motor car (¶ 351). The cheap prefabricated house (¶ 219, 367) would belong with the building industry.

[539] In all these cases, where a much needed invention is closely related to an industry which has nonetheless failed to produce it, some new stimulus is evidently necessary, either a Government command, or a subsidy, or the unlimited funds of the proposed associations.