Mr. HORTON. I am assuming you are an expert in this field, the field of computers and what they can do. I am asking you from a technical standpoint whether or not it is possible—in other words, could we pass a law that would require—the construction of a computer that would only produce statistical information that would be foolproof insofar as individual information was concerned?

Mr. BARAN. "Foolproof" is a rough word. I think we could build safeguards to make it difficult. How effective they are, I think, requires a level of detail that we have not examined yet.

Mr. HORTON. The point I am trying to make is that I think any law Congress would enact to safeguard the right of individuals in this area would depend to a large measure upon the state of the art.

Mr. BARAN. That is right.

Mr. HORTON. With regard to the technical aspects, I do not think we have sufficient information to protect the private individual in the computerized systems.

Mr. BARAN. That is right. The technical art is changing very rapidly in computers. The speed of the computer is going up tremendously. The cost is coming down. The size of the memories is expanding very rapidly. As we look to the future we could probably see increases of size of computers—perhaps on the order of 10,000 times as powerful as today's computers.

Mr. HORTON. As a very simple case, if it were possible to pass a law that no computer system could have key A and that key A would be the key that would release personal information, there would be a safeguard. But short of that it seems to me we have a very difficult problem of enacting a law that is going to provide the type of safeguard that we are looking for.

Mr. BARAN. That is right. It is a very difficult problem to solve by law and law alone, because it is so difficult to implement the intent of the law.

Mr. HORTON. Have you given any thought to the technical aspect of how you could build in safeguards to protect private individuals' information?

Mr. BARAN. I think this is going to have to be done on a per system by per system basis. I do not think there is a general panacea. If a centralized statistical information bank is proposed, one would have to look at that particular system configuration very carefully in detail—in nuts and bolts detail—before making any statements.

Mr. HORTON. He could not pass a law for each system or each individual computer.

Mr. BARAN. That is the problem.

Mr. HORTON. How would we devise a law that would cover all computers? This is the problem.

Mr. BARAN. That is right. This is why it is too difficult a problem. All we could do in the way of law is to make misusing the information a crime. We would not expect this to be effective in itself—just increasing the price to those who would misuse the information. But there is no guarantee at all that this would solve the problem.

Mr. HORTON. I was not thinking so much of a crime as I was just to put in adequate safeguards that would prevent the misuse of information.