Additional Pin-indexing Failures

To the Editor:—We were interested to read Dr. Charles Hogg's account of "Pin-indexing Failures" (Anesthesiology 38:55-57, 1973), to which we can add two examples.

Example 1. A cylinder of helium was supplied to our hospital by one of the leading North American suppliers of medical gases. On attempting to fit the cylinder to a standard anesthesia machine, it was found that the valve would not fit in the helium yoke; it did, however, fit exactly in the nitrous oxide yoke. Further examination of this cylinder of helium revealed that the brown paint (He) could be scraped away to reveal blue paint (N₂O), and close examination of the valve (fig. 1) revealed a deep indentation in the region of the no. 6 pin hole, although the valve was pin-indexed in the standard nitrous oxide configuration (no. 3 and no. 5 pin holes). Analysis of the contents of the cylinder confirmed that it did indeed contain helium.

The distributors concerned insisted that tanks of this size are filled from a manifold with pin-index safeguards included; however, it is obvious that this cylinder was filled with the wrong gas when compared with the pin-index. It was, in fact, a former nitrous oxide cylinder which had been repainted, relabeled "helium," and filled from the helium manifold, presumably using double washers to "cheat" the pin-index. Pin-index systems rely on the integrity of medical-gas distributors if they are to be infallible.

Example 2. Older anesthesia machines are frequently modified to accept pipeline gases into cylinder yokes. Some pipeline fittings can be inserted into the cylinder yokes upside down and so will miss the pins altogether (fig. 2). Thus, a nitrous oxide pipeline may be readily connected to an oxygen yoke (fig. 3). Such fittings should be long enough that they cannot be reversed and placed on the wrong yoke.

We must agree that the pin-index system provides only partial protection against placing a cylinder on the wrong yoke.

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Figs. 1 (left), 2 (center) and 3 (right). See text.