guards do not prevent the use of these controls, but the
user receives a tactile reminder each time the low flow
control is adjusted (fig. 1). The hospital's Engineering
Department made the guards from 1-mm thick stainless
steel and pop riveted them onto the frame of the plastic
flowmeter shield. A similar pattern could be made for
the Ohio® DM 5000 or other apparatus where it may
be needed.

LESLE RENDELL-BAKER, M.D.
ORVILLE L. KLEIN, A.R.T.
PREMILA CHARLES, M.D.

Department of Anesthesiology
Loma Linda University
Medical Center
Loma Linda, California 92357

REFERENCES
1. Rendell-Baker L: Update anesthesia equipment to reduce risks.
   Anesth Analg (Cleve) 51:787-792, 1972

Fig. 1. Guards attached to the low flow controls for N₂O and O₂ to
alert the user to the flowmeter being used.

Anesthesiology
56:156, 1982

Cardiopulmonary Resuscitation of Late-Pregnant Women

To the Editor—Cardiac arrest may result from the
accidental intravascular injection of more than the test-
dose of 0.75 per cent bupivacaine during attempted ex-
tradural block. I have detailed information on five such
complications occurring in healthy gravidae scheduled
for cesarean section. Characteristically, there was a short
grand mal seizure followed by disappearance of pulse
and blood pressure. All five women required external
cardiac compression for more than 10 minutes. In three,
the infant was delivered with dispatch, and the mothers
survived, two with no after-effects but amnesia. In the
other two gravidae, delivery of the fetus was delayed for
several minutes; both mothers suffered irreversible brain
damage.

Cardiac compression is accomplished most efficiently
with the patient supine on a hard surface. In late-preg-
nant women, however, this position is associated with
aortocaval compression and resultant decrease in venous
return to the heart. Therefore, delivery of the infant will
improve maternal circulation promptly and significantly.
If immediate delivery cannot be undertaken safely, expert
uterine displacement must be undertaken without delay;
manual displacement (to the left and slightly cephalad)
is most rational in such a situation.

Prompt delivery of the infant should be considered
part of cardiopulmonary resuscitation of late-pregnant
women.

GERTIE F. MARX, M.D.
Professor of Anesthesiology
Albert Einstein College of Medicine
Bronx, New York 10461

(Accepted for publication on August 16, 1981.)