

dry when the prone position, or Fowler position, was assumed, and allowing of a limited freedom of movement by the patient in the bed. This we think the most suitable apparatus for one confined to bed—bar the one finally to be described.

Hamilton Irving's apparatus used in St. Peter's Hospital, London, consists of a celluloid cup, which is held with strapping over the abdominal wound and has drainage tubes attached to it. It does not apply itself well to the abdomen of thin people, and so far as the writer knows, is not used except for bed-ridden patients. One would expect it to leak between skin and cup with the movements of stooping or walking.

We also used another English appliance, which consists of a glass beaver hat shaped affair, which is held in place by a rubber sheet, perforated to go around the top of the hat and lie on the rim. This rubber sheet is cemented to the abdomen. We found the cement would hold for only a few hours—tried several kinds of cement; but found none which would hold rubber to skin for any practical period, and discarded the appliance as useless on this account.

A "urinae hypogastrique pour recueillir les urines après cystotomié" ordinarily used in France (Albarran), which had been overlooked in devising the one about to be described has this in common, that the air cushion principle is the same. This we subsequently used, as it was at first looked on as practically the same as the author's design; but was found to allow of leakage between the skin and it, because the soft rubber cap allowed the air cushion to wrinkle on stooping.

The author's urinal was first made from the inflatable rubber ring of an Allis' inhaler, the flange of which suggested the possibility of inserting a metal plate to fit over the distensible part in such a way as to be held firmly from slipping on it. To this plate were attached metal loops for straps to pass around the hips, and at the lower margin, as wide apart as possible, posts, for clasps to straps which pass between the legs and up to the belt behind. These held the appliance in position. The plate was perforated between the posts and a hollow elbow soldered on, through which the urine could find its way to a rubber tube discharging into a rubber bag held on the leg. This plate can be made by a village tinsmith, of a shape to fit the inflatable rim of an Allis or Clover inhaler, the rim itself is part of the usual armamentarium of a surgeon, while the rubber reservoir, glass, and rubber tubing are in every drug store. We used a quart hot water bottle for the urinal part, placing a perforated rubber cork in the neck, through which ran a glass tube.