New Inventions.

A BATH FOR THE TREATMENT OF COMPOUND FRACTURES OF THE FEMUR.

THE difficulty of efficient bathing of septic compound fractures of the femur has been well manifested during the war. In the hope of overcoming this and of procuring more rapid aseptic conditions I have had made a bath which can be used with Hey Groves's or the Balkan splint, or with a slightly wider Thomas's splint and a cradle. The special features of this bath are as follows. It may be employed for (a) the ordinary saline or antiseptic bath; (b) continuous irrigation; (c) Bier's treatment after the bath; (d) it may be removed with out pain or alteration of the position of the bones or interfering with the extension; (e) or it may be left on during the course of treatment when it acts as a special support and splint to fractured bone. The accompanying sketch shows the bath in use. The bath is made of strong rubber with pneumatic tube at either end, shaped to fit the limb. The pneumatic tubes or collars are inflated through a smaller tube provided with a tap; the upper of these

may be used by means of an adjusting strap as a Bier's ring. A tube conducts the solution from the bottom of the bath over the bedside for continuous irrigation; when an ordinary bath is required the tap provided is turned off. The firm portion of metal and rubber offers excellent support for the limb, and in use the bath is very comfortable. The malleable metal when covered with the bandage or towel and attached to the top of the splint, or cradle, resists the outward pressure of the pneumatic tube and so makes the bath water-tight. The removal of the bath is very simple, and performed without affecting the position of the limb.

Messrs. Down Bros., Limited, St. Thomas's-street, Borough, S.E. 1, are the makers.

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A SIMPLE LAMP FOR DARK-GROUND ILLUMINATION.

DARK-GROUND illumination is invaluable to the early diagnosis of syphilis, but would probably have been more universally used if it had not required a comparatively strong source of illumination. It can certainly be worked with such illuminants as an inverted mantle, but the light and bull's-eye have to be arranged very carefully, and the average microscopist, more interested in rapid diagnosis than triumphs in optical skill, has tended rather to neglect dark-ground illumination where he could not command such an illuminant as an arc or a Nernst lamp. To overcome this difficulty I was searching before the war commenced for a simple lamp which could be placed under the dark-ground condenser and illuminate it without the intervention

of a mirror. At my request Mr. N. Clarke, of the Rochester Row Military Hospital, has worked out the mechanical details connected with the variable adjustment of the height of the lamp and the result is the arrangement illustrated. Although in its present form it will not demonstrate *Spirochæta pallida* satisfactorily with such paraboloidal condensers as the Zeiss, Reichert, Spencer lens, and Watson, it gives excellent results with dark-ground condensers of

FIG. 1.

the hemispherical type, such as the Leitz, Baker, and Swift. It is also a satisfactory illuminant for the examination of stained specimens.

As shown (Fig. 1), it consists of a small 4-volt bulb, which is mounted on a stand, so that it can be raised or lowered by means of a milled wheel. The lamp is run by a 4-volt accumulator or a dry cell, preferably the former. It is set under the condenser (shown in Fig. 2) and arranged so as to illuminate the centre of the field when the specimen is examined with a low objective. The high-powered objective is then turned on and the lamp raised or lowered by means of the milled wheel, so as to give the best illumination. It may also be necessary to adjust the height of the condenser,

FIG. 2.

lowering it very slightly to correct any haze. The field is usually quite black and shows up spirochætes easily; it is not so dazzling as with stronger sources of illumination, a point for which it may be preferred even by those who have electricity laid on and can use an arc lamp. It was designed, however, for use where stronger forms of illumination than gas-light are not available.

The lamp is made by Messrs. Hearson's, incubator makers, 68, Willow Walk, Bermondsey, S.E.

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