

human (Fig. IV) which would resist leakage and at the same time not

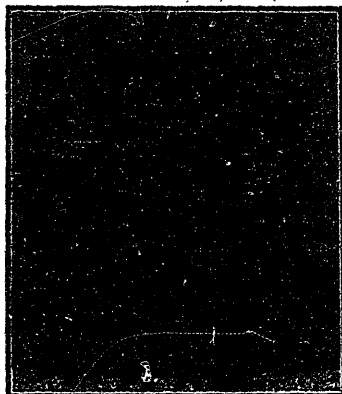


FIG. 4.—Mask for the human. (a) Air inlet. (b) Outlet controlled by set-screw.

press unduly upon any part of the face, entailed numerous failures before the present product was evolved.

With the use of this apparatus, either with or without the ether segment, we have carried out a number of thoracotomies upon dogs, the results of which we hope to report fully in a later paper.

Our object in undertaking a series of pneumonectomies in dogs with the aid of positive differential, in the face of the unfavourable results previously recorded, was threefold: (1) To acquire a knowledge of the proper application, limitations and effects of the plus differential; (2) to devise, if possible, some simple and effective means of overcoming tension pneumothorax; and (3) to acquire a suitable technique for bronchial closure.

As already stated, the apparatus devised by Robinson has in this later series of experiments proved entirely efficient as a means of preventing lung collapse in the presence of wide thoracotomy. With the use of positive pressure, providing the animal be completely narcotized, the normal cardiac and respiratory rhythm may be observed to proceed without disturbance for an indefinite period, and under these conditions owing to the slight movement at the root of the lungs, ligation of the bronchial vessels and the finer manipulations, such as depression and inclusion of the stump by suture, may be carried out with absolute ease. It is only when the animal is lightly narcotized that violent respiratory disturbances follow the opening of the thorax. Under such a condition of incomplete narcosis, the disturbance observed takes the form of exaggerated expiratory movements, at which time, owing to