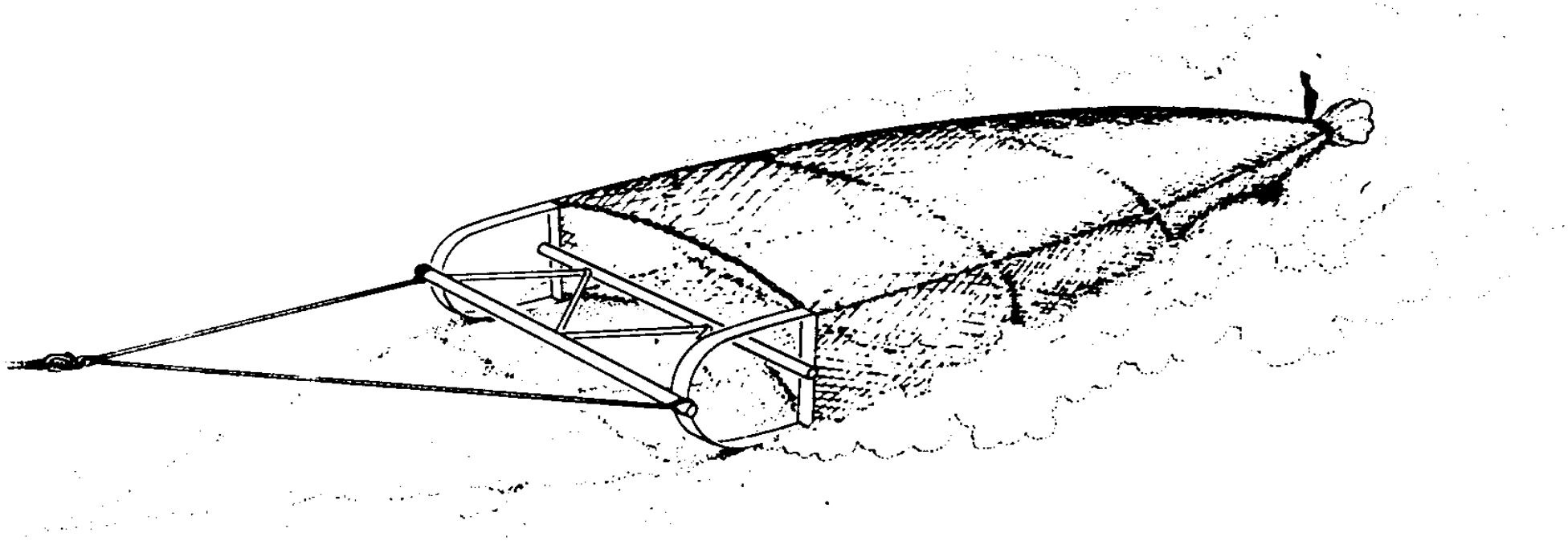


Fig. 6.2. Agassiz trawl.

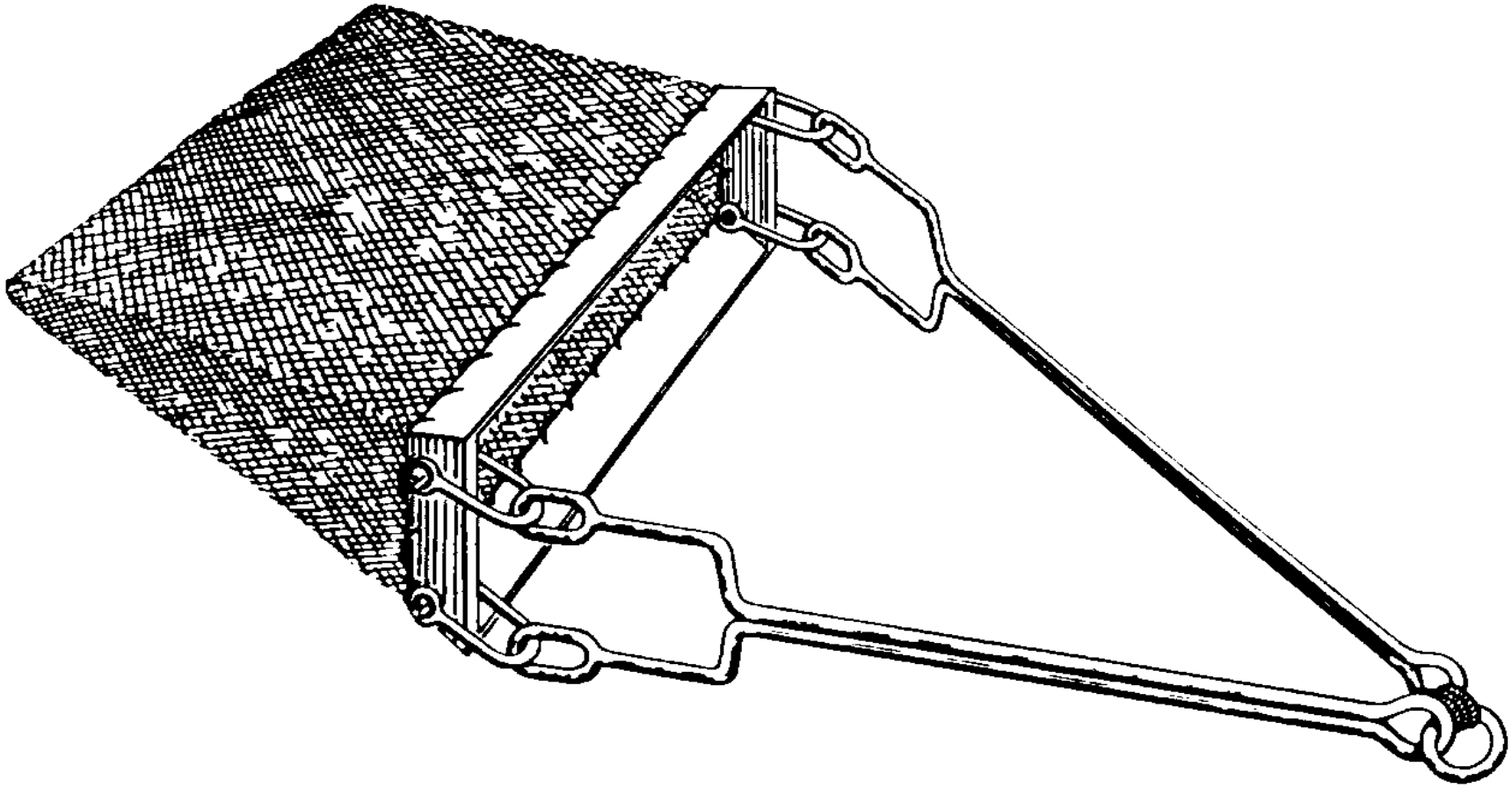


Fig. 6.8. Naturalists' or rectangular dredge. Note weak link of twine joining one arm to ring.

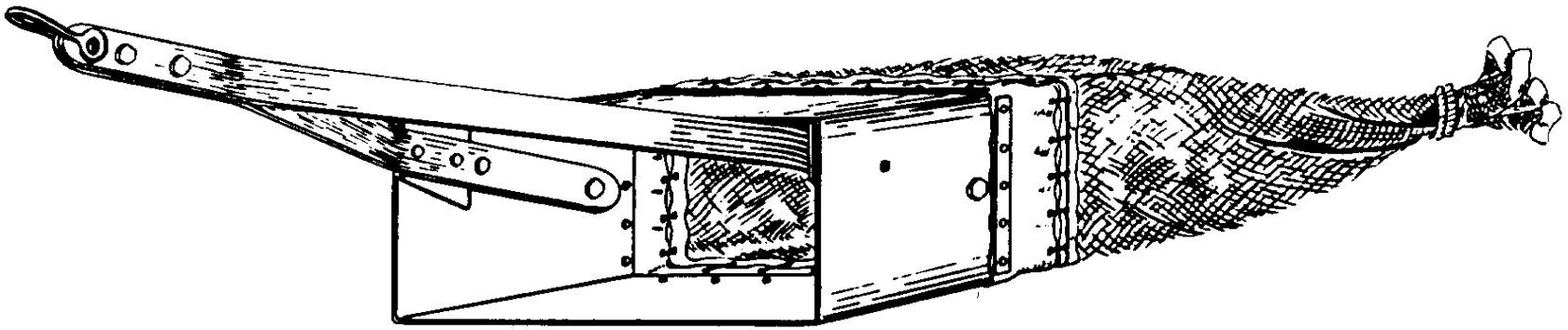


Fig. 6.10. Double-sided anchor dredge as used by Holme (1961). The wishbone towing arms are free to swivel or can be locked to one side if required.

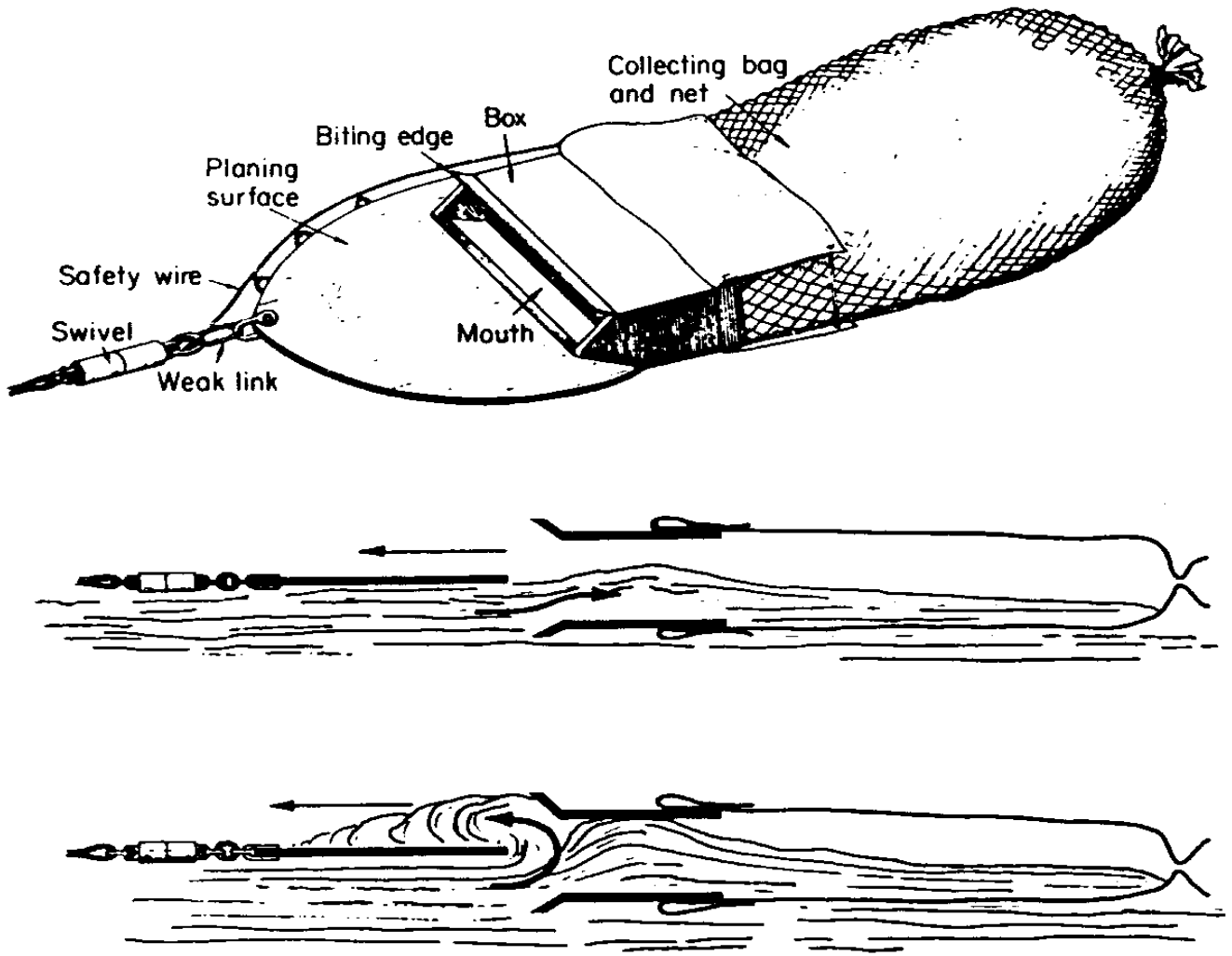


Fig. 6.11. Deep-sea anchor dredge. Above, general view; centre, movement of sediment into dredge before clogging; below, movement of sediment after clogging. (Redrawn from Sanders *et al.*, 1965.)

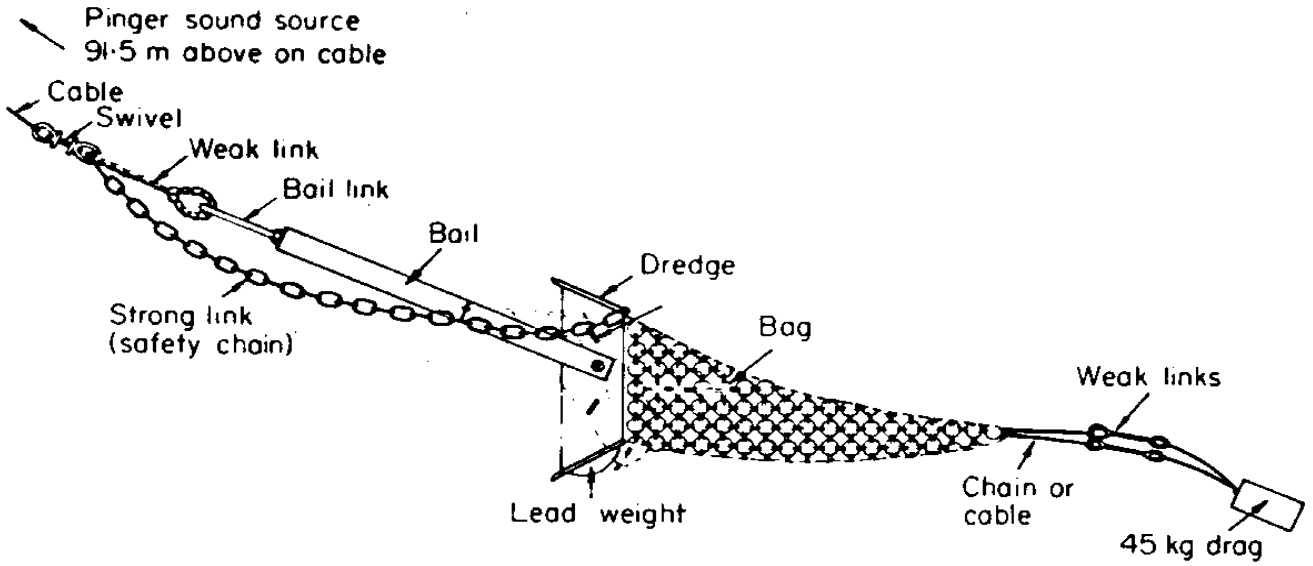


Fig. 6.9. Rock dredge, showing arrangement of weak link, safety chain and swivel. The bag is of interlaced metal rings. (Redrawn from Nalwalk *et al.*, 1962.)

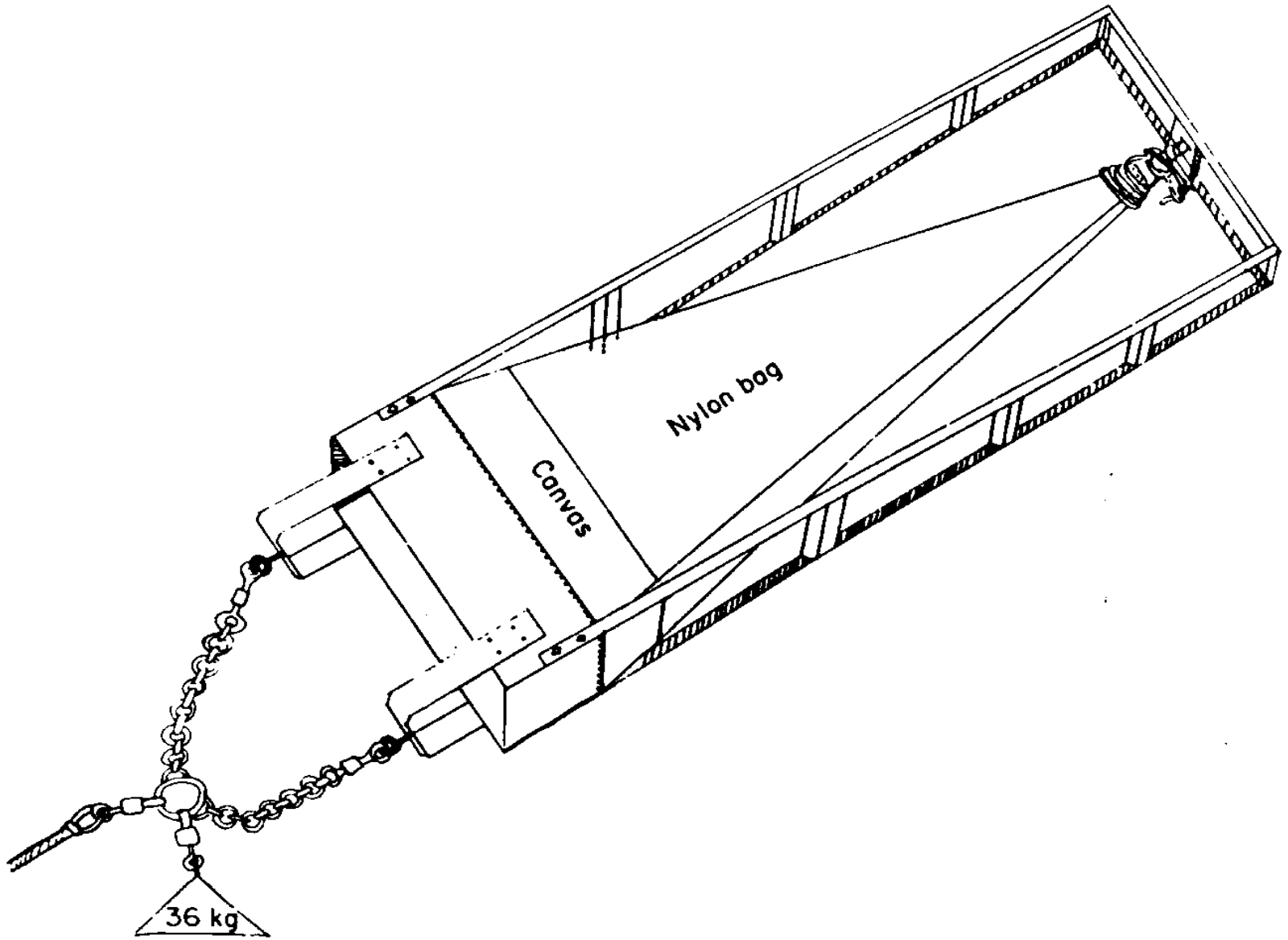


Fig. 6.6. Small Biology Trawl of Menzies (1962). The frame length is 3 m and width 1 m.

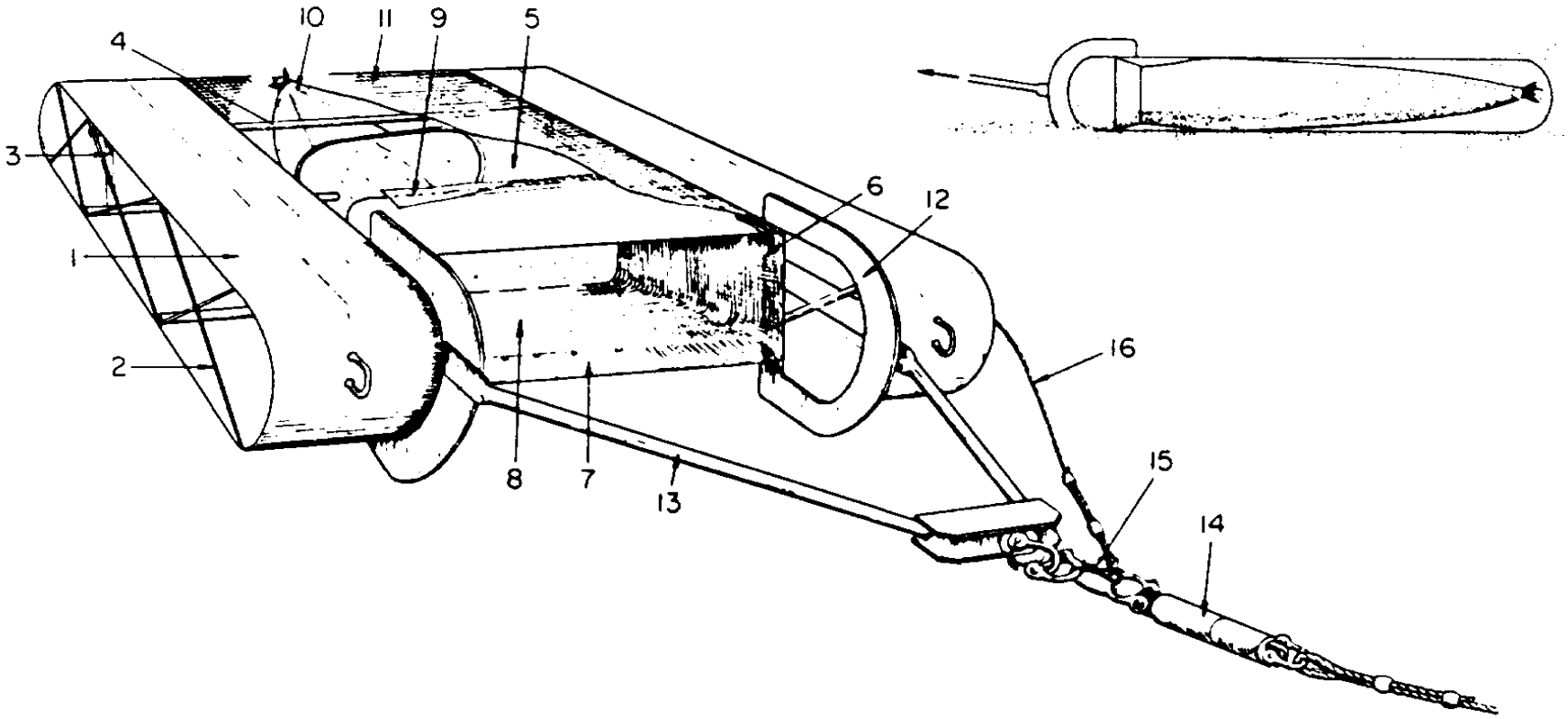


Fig. 6.4. Epibenthic sled. In this sketch much of the top protective wire screen and part of the anterior tubular cross-piece are cut away to show additional details. 1, runners; 2,3, strengthening members inside runners; 4, tubular cross piece; 5, collecting net (nylon);6, side-plate at mouth of net; 7, biting edge at top and bottom of net, adjustable for height; 8, canvas collar at front of net, which is tied by canvas flaps (9) to the tubular crosspieces and struts; 10, net tied at posterior end; 11, heavy wire screen to protect net; 12, flange preventing mud entering net from the side; 13, towing yoke; 14, swivel; 15, weak link; 16, safety-line. The smaller drawing shows the mode of operation of the sledge. (Redrawn from Hessler & Sanders, 1967.)

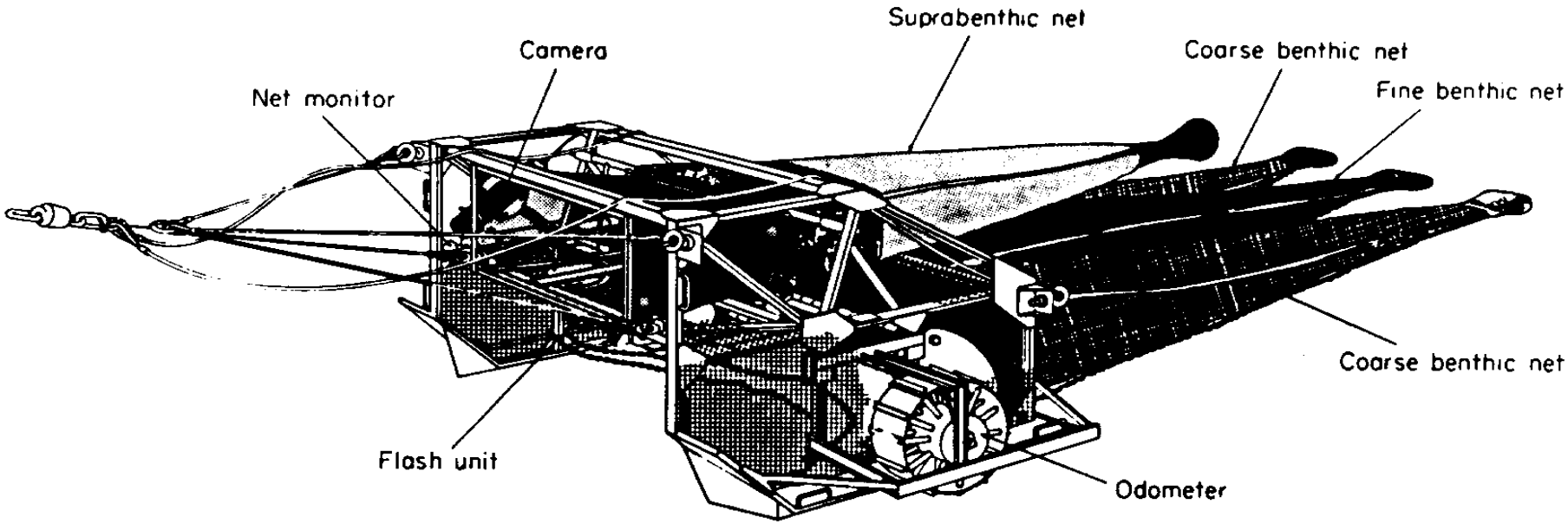


Fig. 6.5. IOS epibenthic sledge, shown in attitude adopted on the sea bed. (From Rice *et al.*, 1982.)

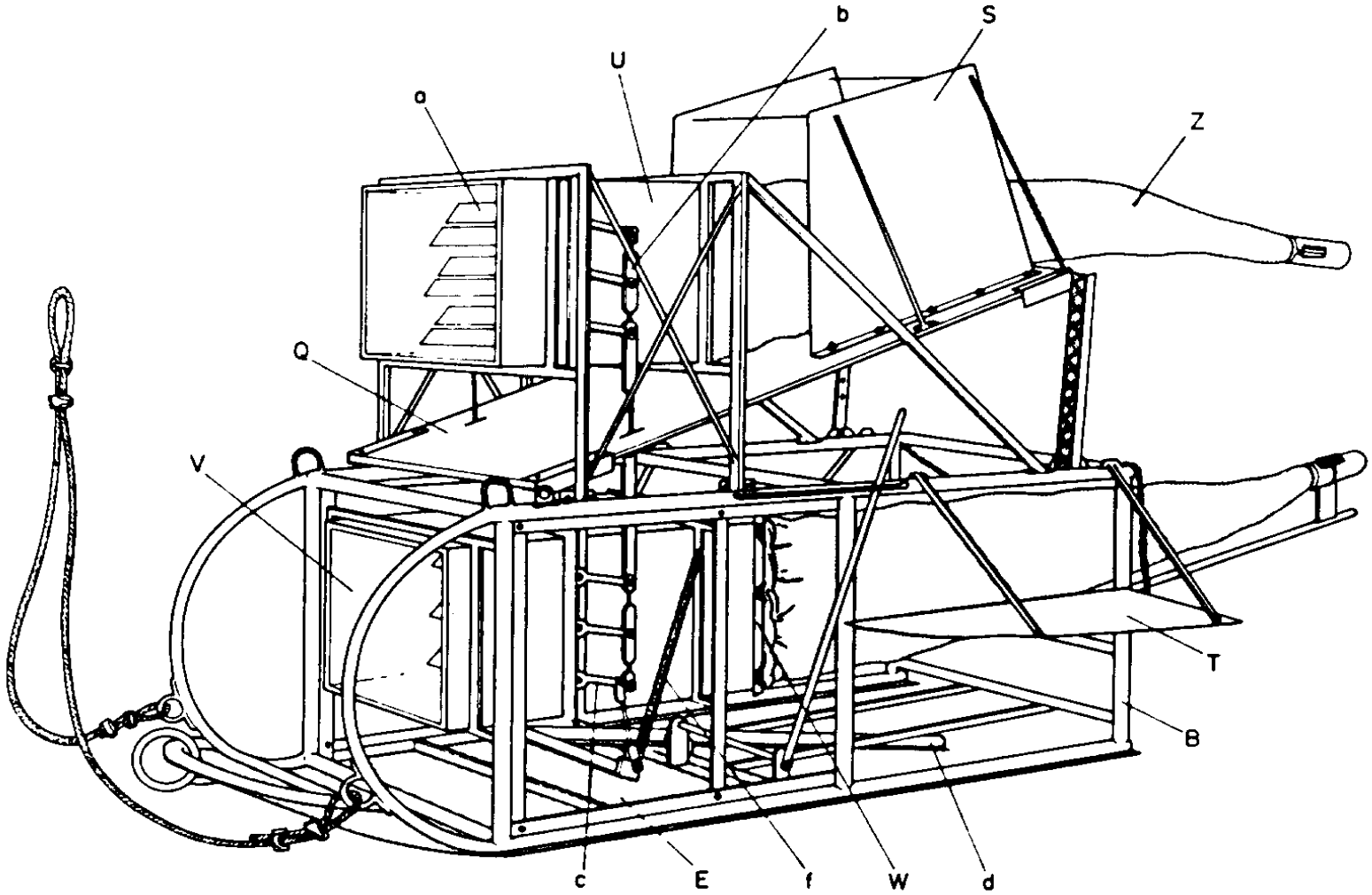


Fig. 6.3. Macer GIROQ sledge. B, tubular chassis; E, sheet-metal gliding plate, turned upward at front; Q, adjustable wooden depressor; S, vertical fin; T, horizontal fin; U, wooden box at front of upper net; V, wooden box at front of lower net; W, metal strip for attachment of net; Z, zooplankton net; a, shutter closing mechanism; b, adjustable control link; c, crank lever; d, lever operating closing mechanism; f, closing spring. (After Brunel *et al.*, 1978.)

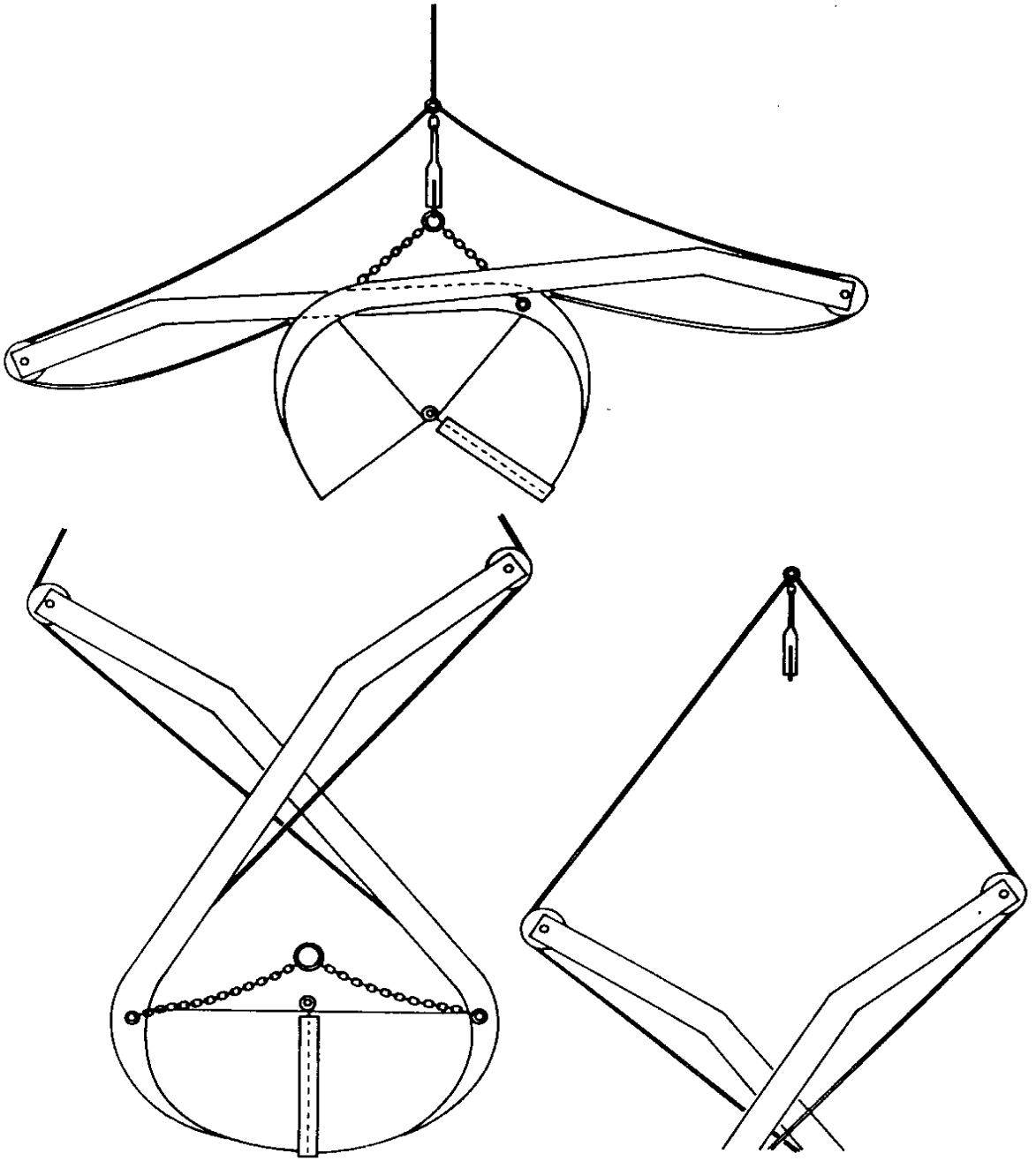
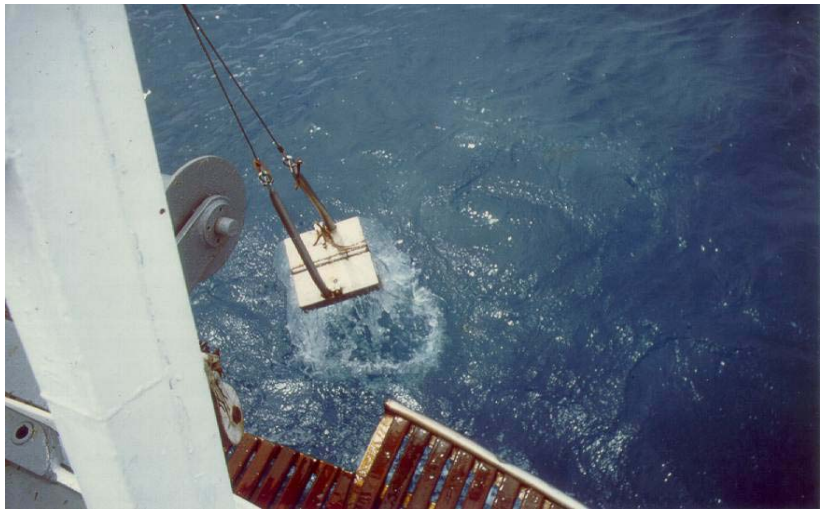


Fig. 6.14. van Veen grab, open and closed. (Redrawn from Dybern *et al.*, 1976.)

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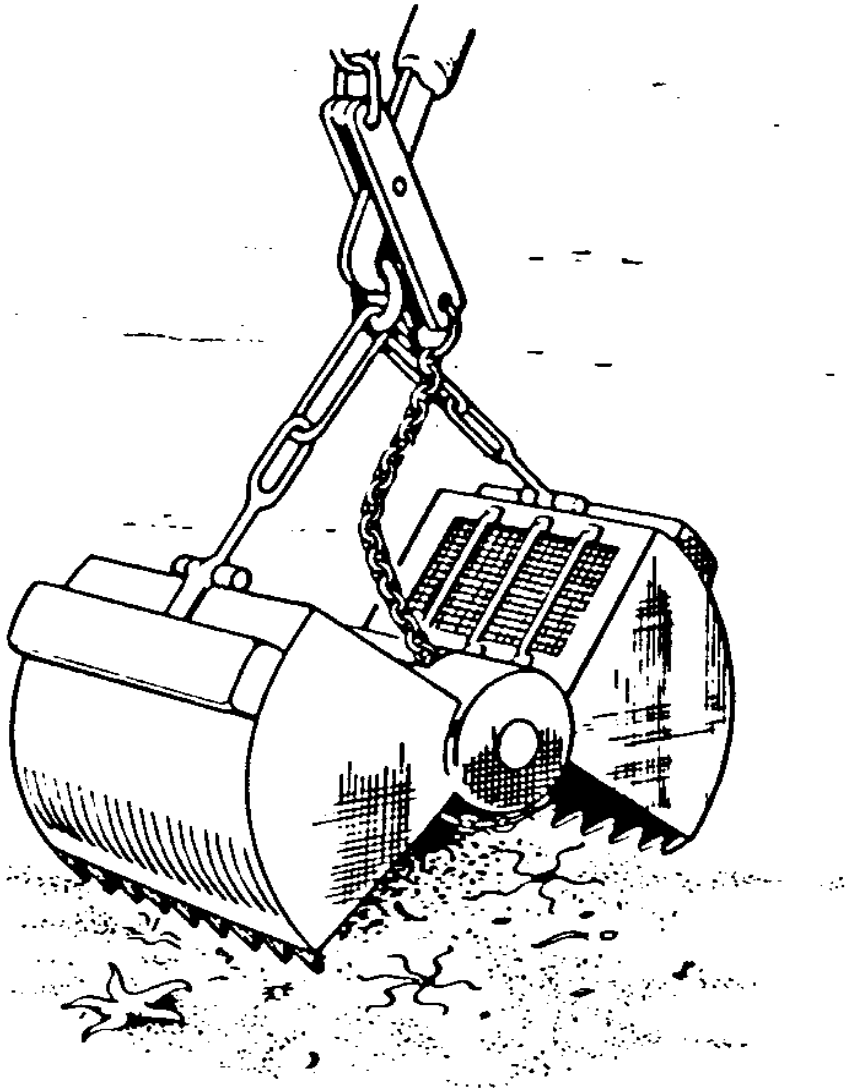
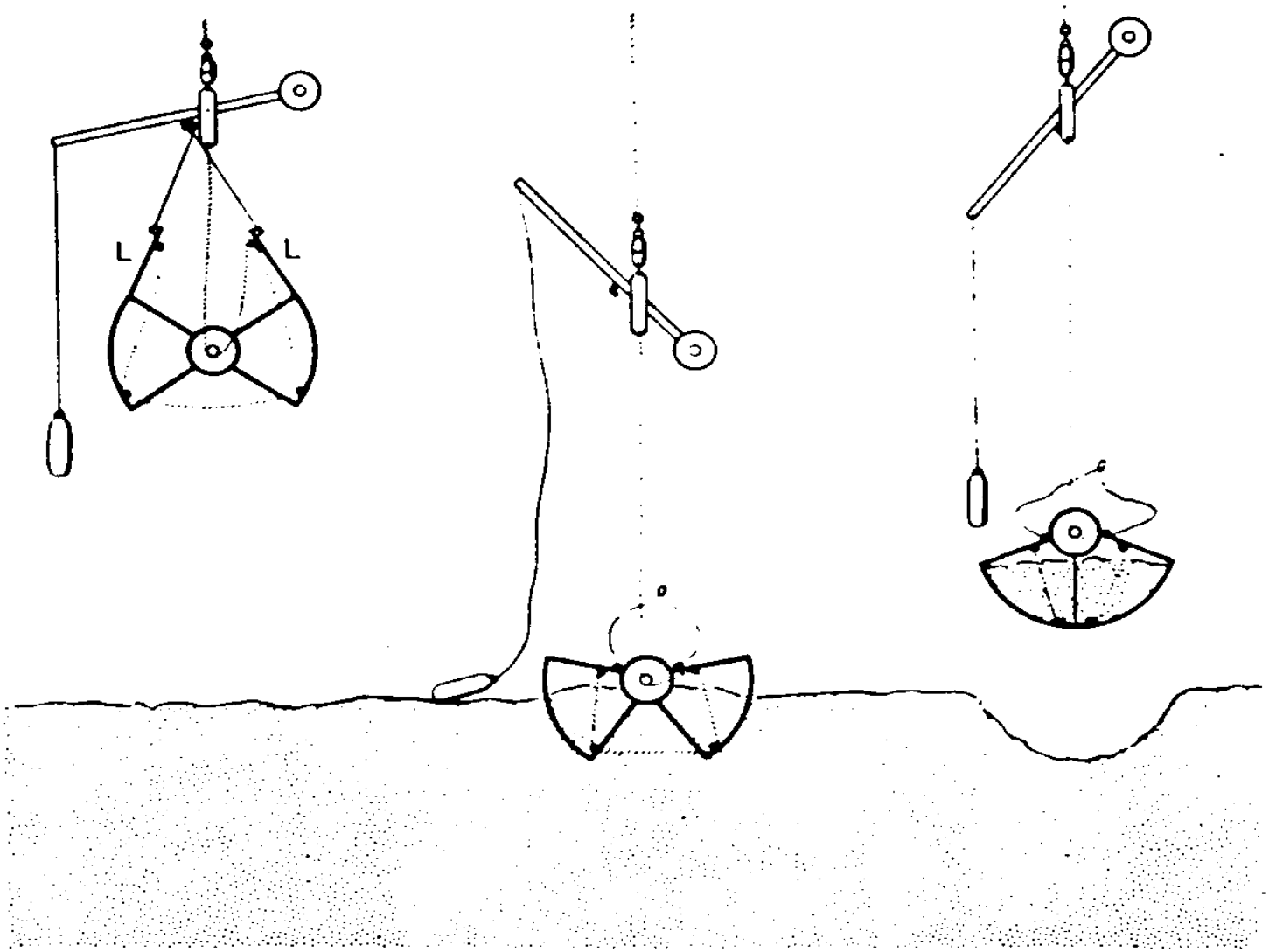


Fig. 6.12. Petersen grab approaching the sea bed. After the release hook has actuated, an upward pull exerted on the central chain closes the two halves of the grab. (After Hardy, 1959.)



g. 6.13. Operation of the Okean grab. Note the counterweight release and the s (L) of the two buckets, which are open during the descent. (Redrawn from itsin & Udintsev. 1955.)

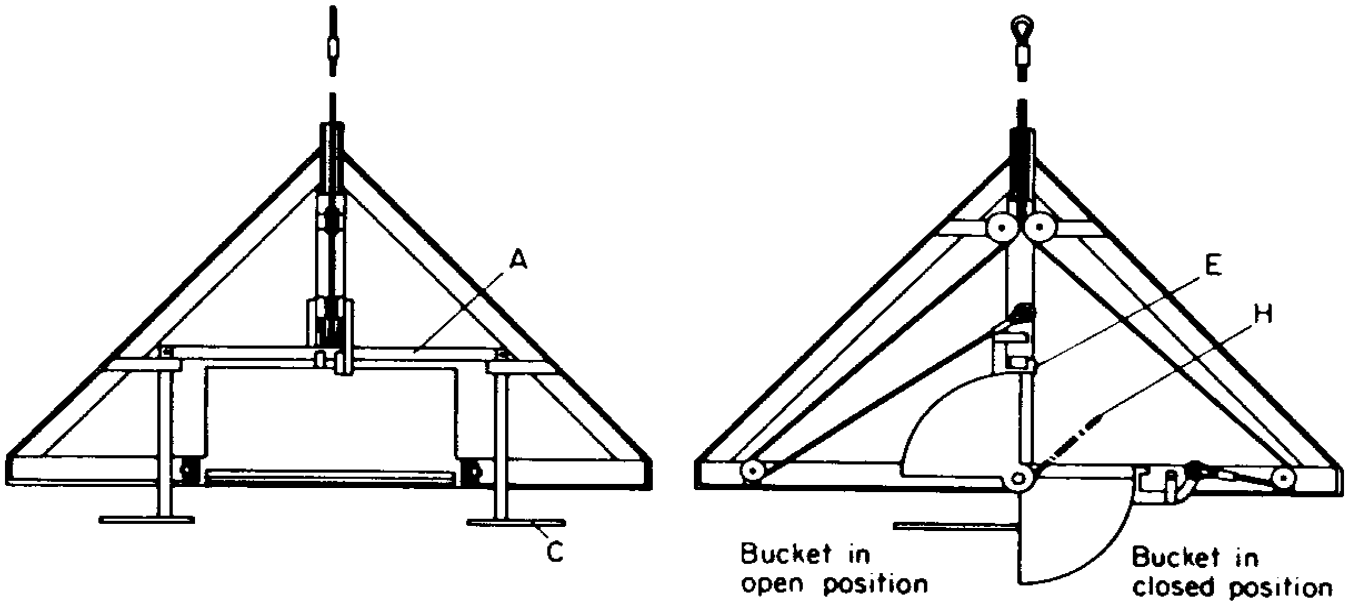


Fig. 6.16. Day grab. Left, end view, open for lowering; right, side view, one bucket open, the other closed. On reaching the sea bed the two pressure plates (C) are pushed upward, releasing the transverse beam (A) so that the hooks (E) holding the buckets open are released. The buckets are closed by tension on the two cables, the hinged flap (H) allowing water to escape during the descent but acting as a cover during hauling. (From Day, in preparation)

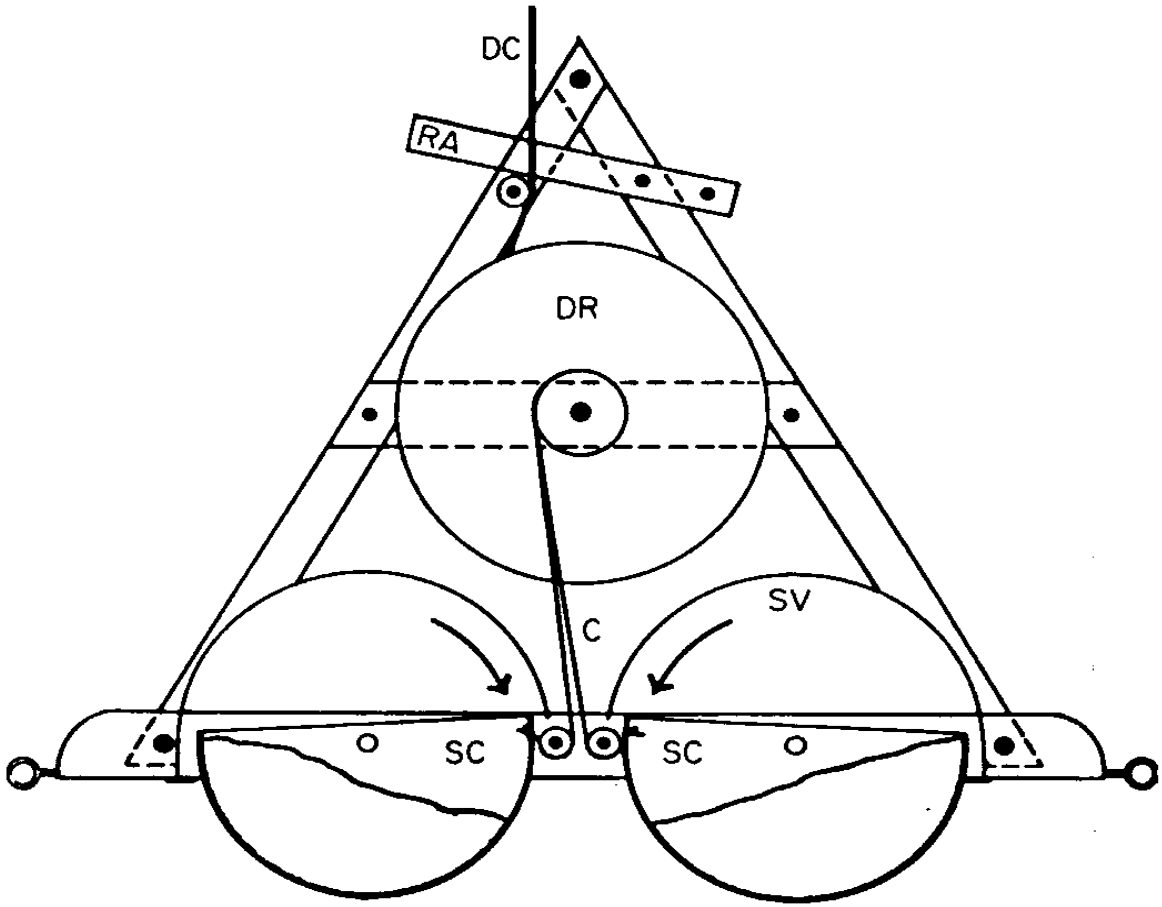


Fig. 6.18. Holme's double-scoop sampler (Holme, 1953), with scoops closed. This model takes two samples, each of 0·05 m^2, but a later model, with scoops twice the width, appears similar in section. DC, cable from ship; DR, cable drum; C, cables actuating scoops; RA, release arm; SC, scoop; SV, scoop-cover.

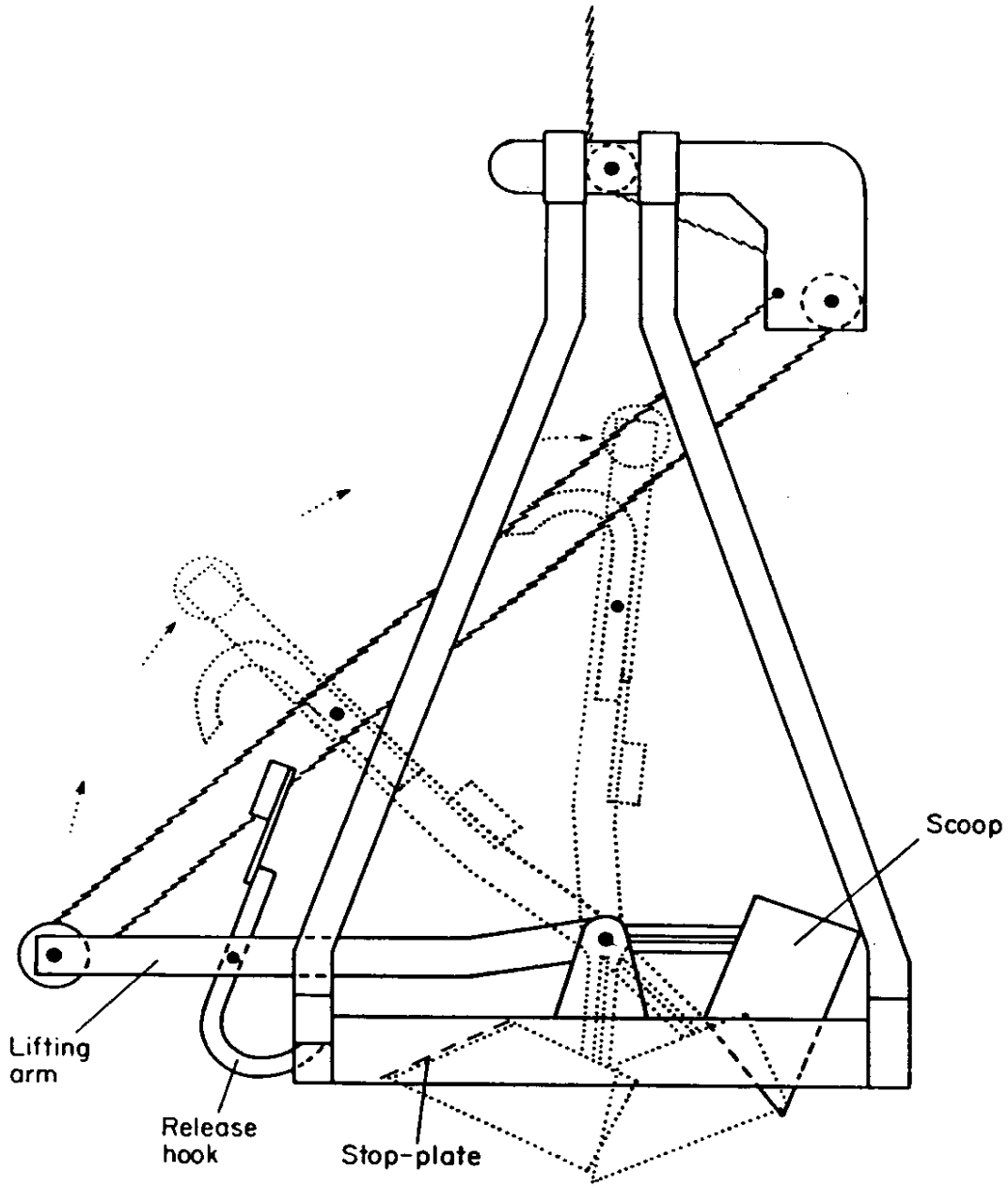


Fig. 6.17. Hamon grab, showing mode of action. The lifting arm rotates through 90° to drive the scoop through the sediment, closing against the stop-plate. (After Dauvin, 1979.)

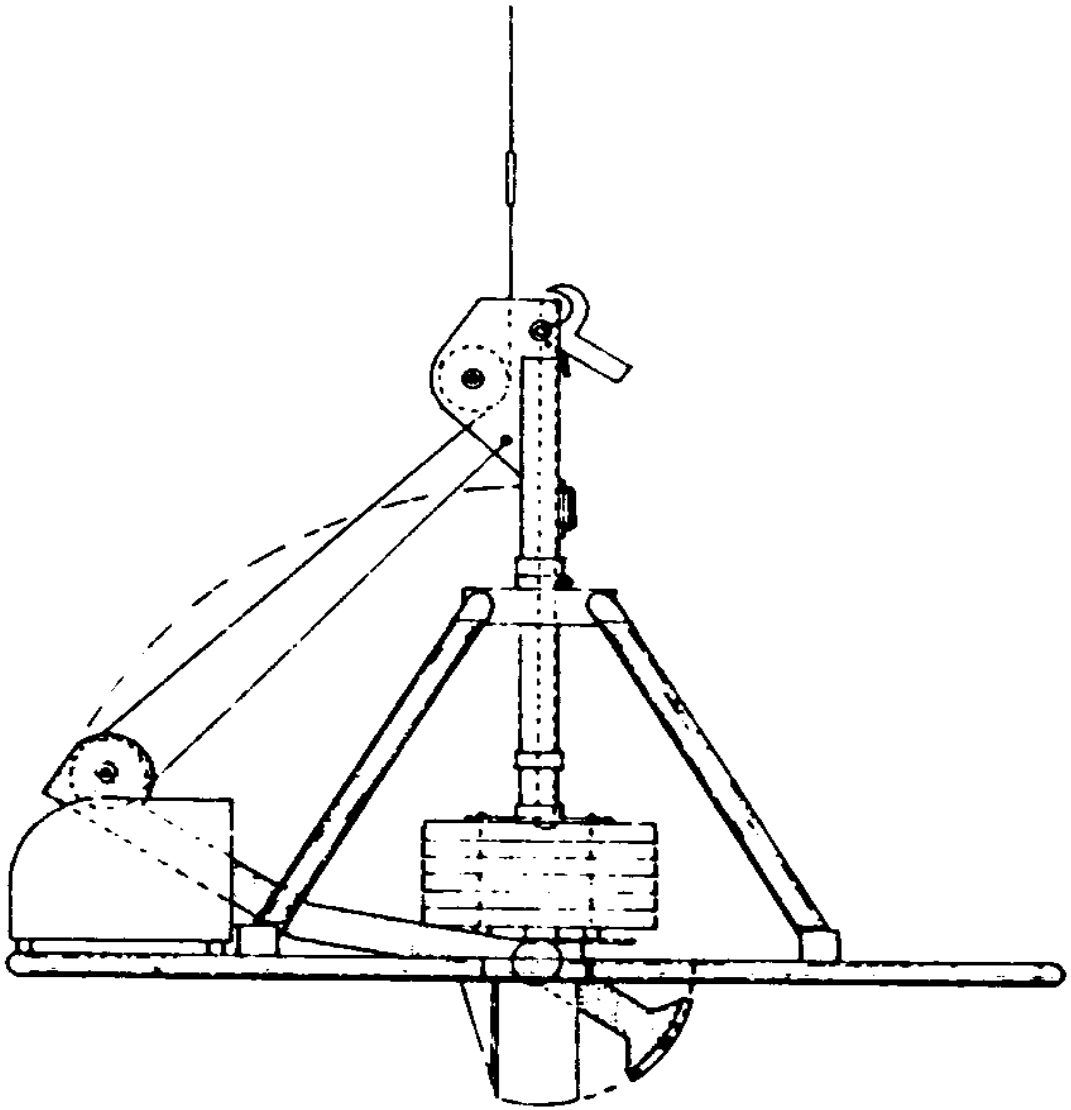


Fig. 6.19. Reineck box sampler. The rectangular coring tube is closed by a knife edge actuated by pulling up on the lever on the left. An attachment can be fitted to show the inclination and compass orientation of the core. (Redrawn from Reineck, 1963.)

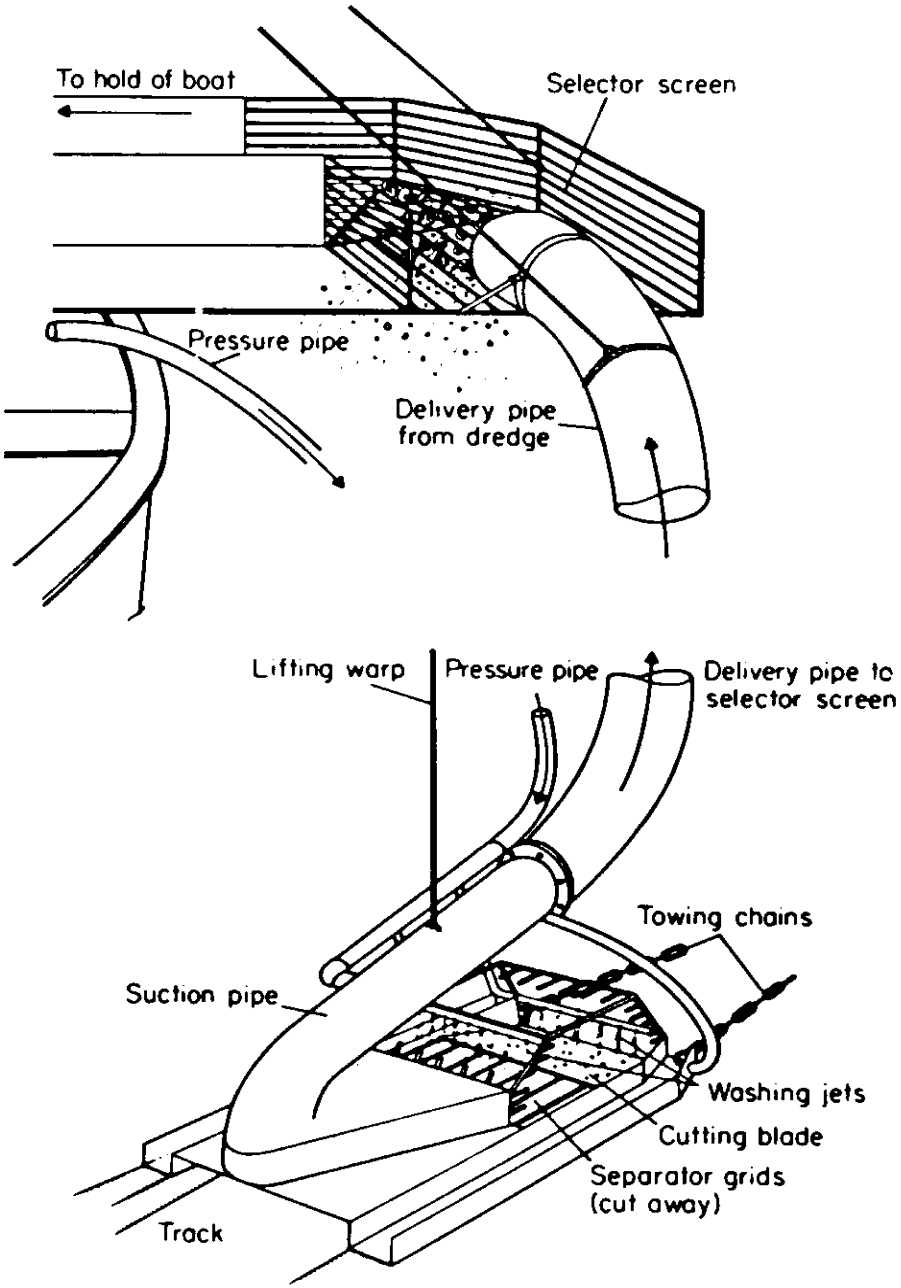


Fig. 6.23. Hydraulic dredge used for harvesting cockles in the Thames Estuary. The lower part is on the sea bed, the upper part on the boat. (From Pickett, 1973.)

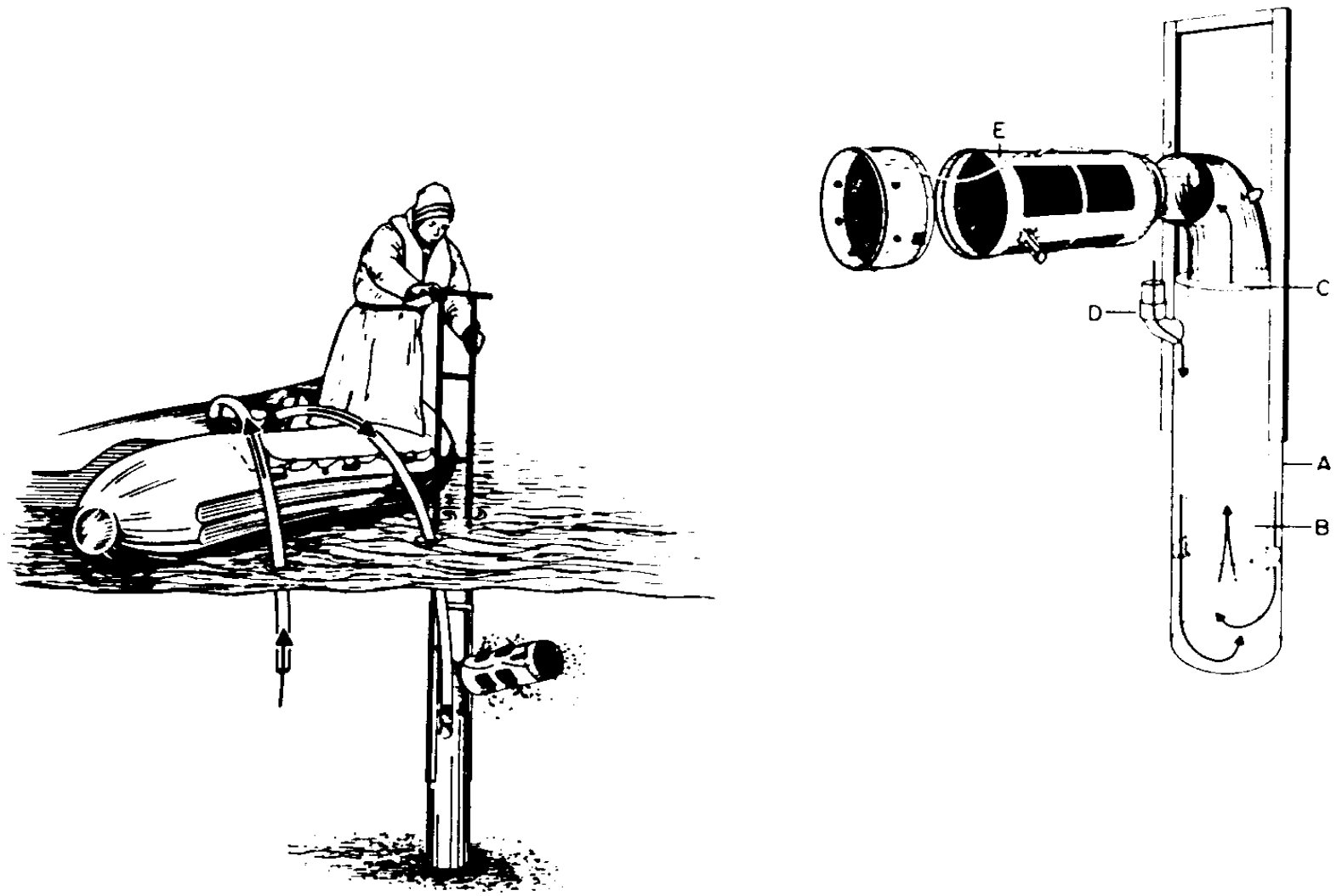


Fig. 6.22. Suction sampler of van Arkel & Mulder (1975), which employs the 'counterflush coring' method. The sampler consists of two concentric pipes (A and B), united at the top (C). Water is injected through D. In use the device is pushed steadily into the sediment, a mixture of water, sediment and organisms passing up pipe B to the cylindrical sieve (E).

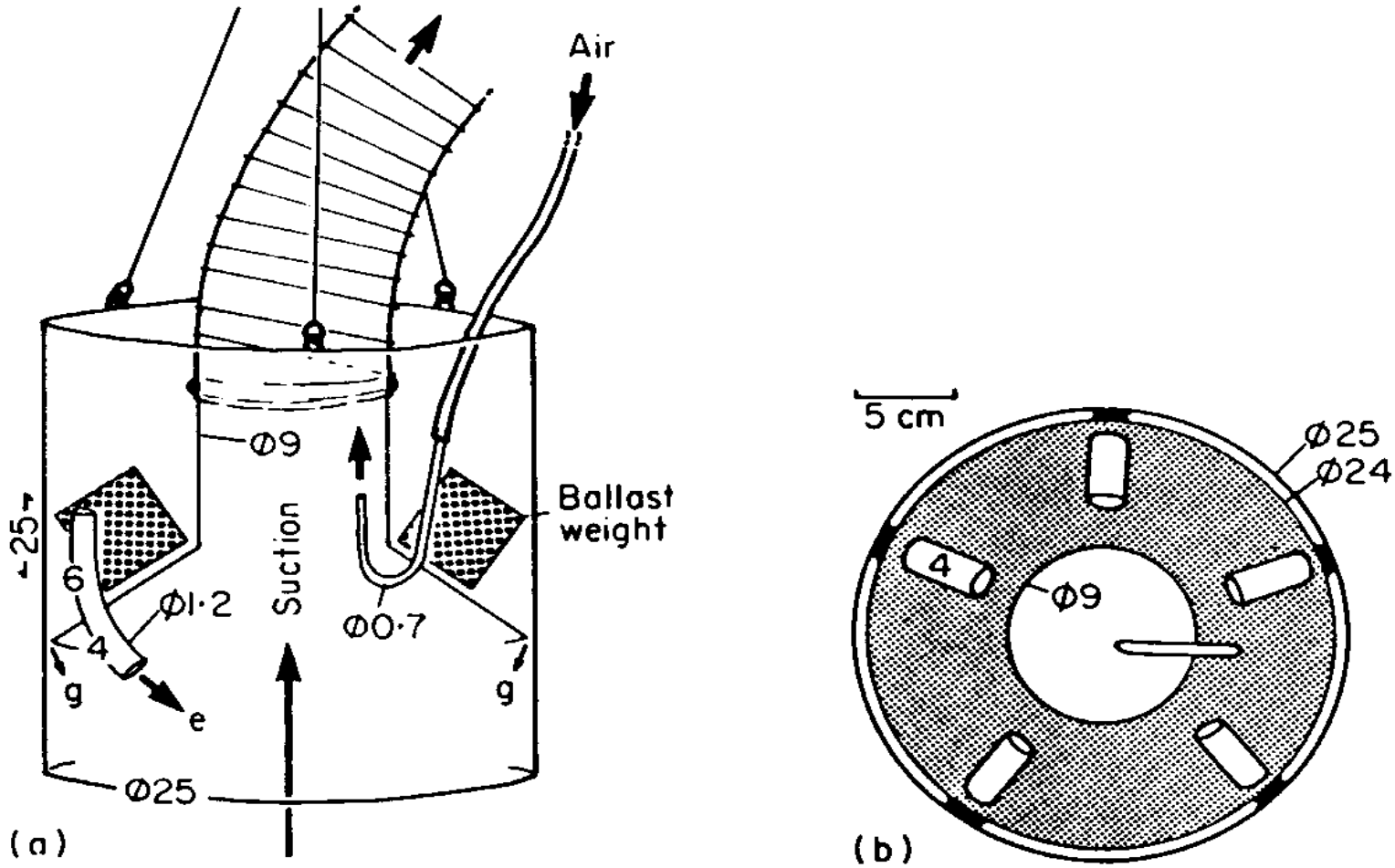


Fig. 6.21. Suction sampler of Emig (1977). (a) In profile; (b) from below. Air introduced through the small tube produces suction in the central tube, through which sediment and fauna is drawn up. The five compensating tubes (e) and the gap between cylinder and cone (g) are provided not only to enable the tube to dig into the substratum but also to help bring the sediment into suspension so that it is more easily collected. Diameters of the various tubes, in centimetres, are shown.