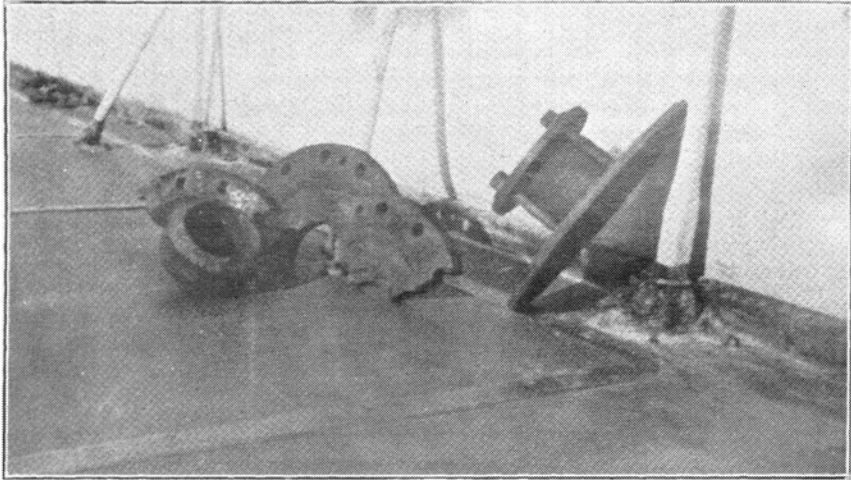
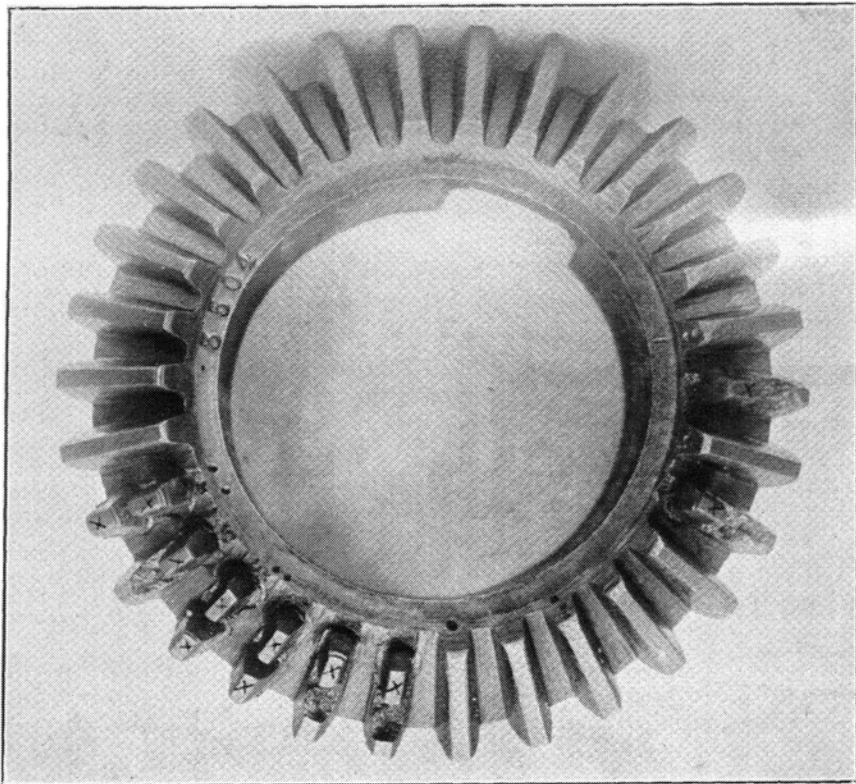


To face page 117.]



(d)



(f)

11.

REPAIRS.

(i) REPAIR TO FIRE AND BILGE PUMP CYLINDER COVER.

The following interesting case of a repair to the cylinder cover of a fire and bilge pump has recently come to hand. The repair was effected by the ship's staff of a sloop, which at that time was cruising some 1,200 miles from the nearest foundry.

The breakdown was due to the excessive wear between the valve steam cap and the end of the main shuttle valve. This caused the main shuttle valve to stick in its steam cap, thus allowing the piston to travel beyond its normal stroke and come in contact with the cover, the result being that the cover was badly smashed into four pieces.

The repair was effected by improvising a new cover composed of a piece of steel plate for the flange and an old Weir's Pump Shuttle Valve Cap, with the slot cut off, as the dome—this method being adopted to overcome the difficulty of having a casting made.

The flange was 15 inches diameter and $\frac{3}{16}$ inch thick and had a $4\frac{3}{8}$ inch diameter hole cut in the centre. The dome of the Weir's Shuttle Valve Cap was fitted on to the flange with a serrated joint of permanite and was held in place by four $\frac{7}{8}$ inch steel studs which passed through a circular plate of $\frac{1}{2}$ inch steel, placed on top of the valve cap to form a strongback; the studs screwed into the flange of the cover, and the nuts when tightened up on the strong back, clamped the valve cap securely on to the flange.

The repair was satisfactory in every respect and was used for several months afterwards.

The time taken to carry out the work was ten hours.

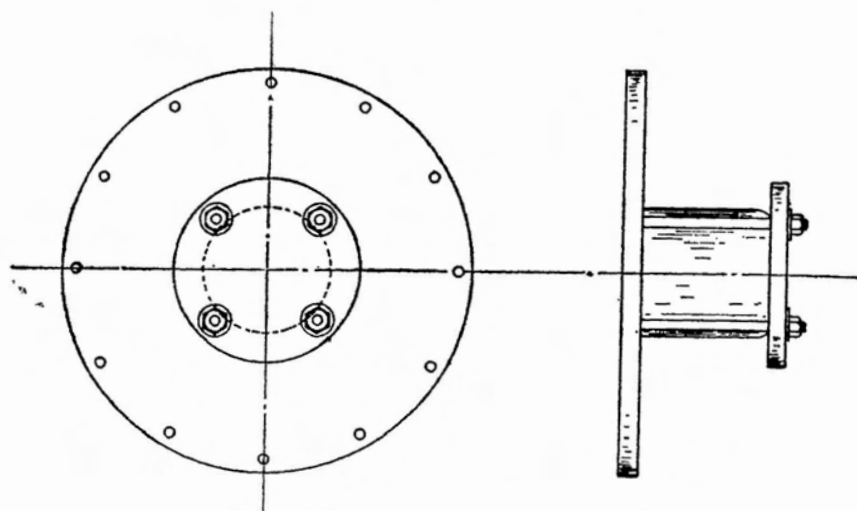
(ii) TEMPORARY REPAIR TO A DEFECTIVE MITRE WHEEL.

Whilst entering harbour in a destroyer it was observed that two teeth were missing from the mitre wheel, secured to the main steering shaft, for operating the hunting gear of the steering engine.

The engine continued to function normally until ship was berthed. On subsequent examination it was found that six other teeth were cracked.

Cracked and broken portions of teeth were removed and a temporary repair effected by drilling and tapping the wheel and fitting $\frac{3}{8}$ inch steel studs in place of the missing teeth. The studs were subsequently shaped by filing to gauges made from undamaged teeth.

The method of repair is clearly indicated in the accompanying photograph, in which the steel studs are marked with a cross.



(e) View of cylinder cover as repaired.