As soon as the slack is wound up, the chain commences to move the gate, opening it until it leaves the passage free for the entrance of the barge into the lock. As soon as the boat is moved into position and made fast, the gate is closed by throwing in the opposite clutch which operates the winch at the opposite end of the shaft and closes the gate—the clutch on the first winch being released, of course, allows the chain to pay out as quickly as required to permit the gate to close.

As soon as the gates are closed, the clutch operating the shaft which drives the valve mechanism has moved into engagement and starts the valve driving mechanism, the lockmen throw the lever starting the two valves in each of the lock gates to close and immediately walk over to the other end of the lock; before they reach it, however, these valves have closed and the tripping mechanism has thrown the clutch out of gear. The valves in the gates in the upper end of the lock are then opened in a manner similar to that described in connection with the opening of the lower gates, allowing the barge to proceed on its journey.

WEIRS.

To keep the various levels of the canal normal, on account of excessive flow of water from above or any heavy draught of power used on a level or by lockages, the flow of water has to be compensated for by adjusting the weir gates.

These gates are operated by worm and segment, or, in some cases, by raising or lowering the valves in a manner similar to that on the lock gates, the operating of which is carried out in much the same way as described in connection with the gates.

As there are a number of weir gates or valves which must be capable of independent operation, provision is made by means of a double jaw clutch engaging with either one or the other of two bevelled gears on a horizontal shaft which meshes into a third bevelled gear on a shaft of the worm for operating the segment which drives the valve stems.

The operator only has to throw the clutch into engagement so as to move the valve in the desired direction and as soon as the gate has opened or closed sufficiently for the purpose of regulation, the lever is thrown out of engagement with the gear. A friction clutch is placed between the shaft of the worm wheel driven by the motor so that in case of accident resulting in jamming any of the parts, the friction clutch will slip before any serious breakage occurs.