

# GROUP VII.

## THEORY OF THE STEAM ENGINE AND THE STEAM BOILER.

The steam engine is a machine which converts the heat energy of steam into mechanical work. It consists of a cylinder in which steam expands and pushes a piston, which is connected to a crankshaft. The crankshaft is connected to a flywheel, which stores energy and allows the engine to run smoothly. The steam is produced in a boiler, which is a large vessel in which water is heated and turned into steam. The boiler is connected to the engine by a pipe, and the steam is allowed to expand in the cylinder. The exhaust steam is then condensed in a condenser, which is a large vessel in which the steam is cooled and turned back into water. The water is then pumped back to the boiler, and the cycle is repeated.

The steam boiler is a vessel in which water is heated and turned into steam. It consists of a large cylindrical vessel, which is divided into two parts. The upper part is the steam space, and the lower part is the water space. The water is heated in the water space, and the steam rises into the steam space. The steam is then used to drive the engine. The boiler is connected to the engine by a pipe, and the steam is allowed to expand in the cylinder. The exhaust steam is then condensed in a condenser, which is a large vessel in which the steam is cooled and turned back into water. The water is then pumped back to the boiler, and the cycle is repeated.

The condenser is a vessel in which the exhaust steam from the engine is cooled and turned back into water. It consists of a large cylindrical vessel, which is divided into two parts. The upper part is the steam space, and the lower part is the water space. The steam is cooled in the steam space, and the water is pumped into the water space. The water is then pumped back to the boiler, and the cycle is repeated.

The flywheel is a large wheel, which is connected to the crankshaft of the engine. It stores energy and allows the engine to run smoothly. The flywheel is made of a heavy material, such as cast iron, and is mounted on a central shaft. The flywheel is connected to the crankshaft by a crank pin, and the crankshaft is connected to the piston of the engine. The flywheel is used to store energy during the expansion stroke of the engine, and to release energy during the compression stroke. This allows the engine to run smoothly, even when the piston is not exerting force on the crankshaft.

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