

KEEPING UP STEAM OVER NIGHT.

An engineer has been telling a contemporary how to keep up steam in a boiler over night without banking. First, the damper is closed tightly and ashes drawn to the ash-pit door, making it air tight. Then the smoke-box door is opened a trifle, the result being that the engineer had 15 to 25 pounds pressure in the morning. With a setting that is not full of leaks, it should be easy enough to keep up pressure over night without any fuss, and if not, there is some leak somewhere that should be attended to. The leak may be of steam, through faulty connections or in a cracked setting, letting the cold air come in contact with the boiler. Then some engineers have an idea that the top of the boiler should not be covered, and here is an avenue for the heat to escape. I have let the fire under a boiler go out early Saturday afternoon, and on Sunday afternoon have found 25 pounds pressure, and nothing was done but close the damper, furnace door and ash-pit door. The best practice is to bank the fire, but when this is done, there is more to fear of a pressure too high than otherwise. Any one who has a steam pressure recorder will note that the pressure runs very high during the night, and passing through any of the city streets late at night the hiss of steam escaping from safety valves is plainly heard, and leads to the suggestion that some may be in condition less responsive to the excess in the pressure allowed.—*American Engineer.*

THE CLASSIFICATION OF APPLICATIONS AND PATENTS IN THE UNITED STATES PATENT OFFICE.

Under the patent law of the United States, a thing to be entitled to protection by letters patent must be new and must possess invention.

Most things which are new are the result of the exercise of the inventive talents, and are therefore patentable.

To determine the novelty of a device for which a patent is solicited, and hence the patentability of the same, it is provided by statute that the Commissioner of Patents shall cause an examination to be made of all previous patents relating thereto, or, as it is commonly termed, of the "state of the art."

This examination, when completed, is supposed to remove all doubts as to the novelty of the thing in question and to determine its patentability.

This examination, to be thorough, depends upon two things—the skill and honesty of the members of the examining corps and a proper classification of inventions.

A proper classification should be of such a character that the officer whose duty it is to assign applications for examination may be able to determine by a careful inspection thereof, its proper place in the arts and to what class and division it should be assigned.

While the classification now in vogue is conceded by all to be the best which has yet been devised, to any one who has carefully considered the matter it must be apparent that it has many defects and is open to improvement in many particulars.

Under this classification, applications and inventions are assigned for examination with relation to

the particular specific art to which they are more closely allied.

Those inventions relating to the manipulation of metal are sent to the class of metal working; those relating to the mechanical treatment of paper to the class of paper manufactures; those relating to the treatment of leather to the class of leather working, and so on throughout the office.

An application for a patent for a machine for rolling sheet metal is assigned to the division of metal working; one for ironing cloth is sent to textiles, while one for ironing or rolling leather is sent to leather working, notwithstanding that in most cases these machines are analogous in construction and operation and can be interchangeably used.

As the courts have decided that an inventor is entitled to all the uses to which his invention can be put, a machine which has once been patented for one purpose cannot be again patented for another purpose. A machine for rolling metal or cloth can generally be used for rolling leather.

Under the present classification, these three classes of machines are in three different divisions of the office, so that to be certain that a machine of one of the classes is new, a search therefor must be carried on in each of the respective classes or divisions wherein the others are classified.

These classes are in different rooms in the Patent Office and are widely separated, on different sides and different floors of the building, so that an examiner who may be prosecuting a search for a machine of the kinds mentioned must tramp around the office from room to room and floor to floor of this great building in order to make a thorough search, consuming much valuable time in his pilgrimages, and, perhaps, being unfamiliar generally with classes other than his own, his search is rendered difficult and uncertain.

This classification undoubtedly lends an air of uncertainty to the search and to the novelty of many things, for if the examiner be a recent employe, and be therefore ignorant of the existence of analogous classes, or if he be careless, and thus through ignorance or carelessness fails to make an examination therein, duplicate patents are liable to be, and as a matter of fact are, granted.

Fortunately, the members of the examining corps are generally capable and painstaking men, who are alert and careful in the performance of their duties, protecting equally the interests of the inventor and the public, and to this fact is due the very few duplicate patents in the many thousands issued yearly.

Another defect in the present classification, and one which cannot be too strongly condemned, is the facility with which an applicant or his attorney can practically determine in what class his invention shall be examined and to locate the same therein.

The assignment of the application is, in most cases, determined by the title which is given the alleged invention or the statement of invention contained in the specification.

Let us assume, for an example, that a man has invented a machine for cutting fabric, either cloth, leather, or paper, and for some reason he desires this machine to be examined in the class of paper manufactures.

There are many reasons why he may desire this;