Engineering Review

New Acetylene Generator

The Linde Air Products Company has just recently announced a new Oxford generator. It is intended for portable service only. Having a carbide capacity of 150 lbs., it will be of gerat service wherever large scale welding operations must be carried out in the field.

The capacity of this new generator is 150 lbs. of ¼ x 1/12 in. carbide. It is rated to produce 300 cu. ft. of acetylene per hour. It weighs 750 lbs. empty, is 87 in. overall in height, and 42 3/4 in. in diameter. Fully charged the generator weighs 2,250 lbs.

The feed is of the gravity type. The feed control unit is self-contained and is bolted to the inside of the carbide hopper. The feed valve unit is actuated by a diaphragm. The spring is encased in a small housing and set at the factory to deliver about 13 lbs. per sq. in. pressure. This can be changed within a range of about 2 lb. per sq. in. by an external adjustment.

At all rates of generation, the pressure variation within the generator is not more than 3/4 lb. per sq. in. This slight variation is removed by means of a new type of regulator designed for this particular job.

Instead of the conventional cylindrical section with exterior mechanisms and controls, this new generator has a hopper having a recessed or cut-out segment on the front side. Within this area are housed practically all of the needed external appliances of the generator. This space is enclosed by hinged doors which when closed, give the upper part of the generator a cylindrical shape. With the doors locked, the generator cannot be started; nor can gas be blown off through the relief valves. In other words, the generator is of tamper-proof construction.

The two customary relief valves are used. A simple and highly dependable interference mechanism connects the relief valves to the other vital parts. The only other interference used on the generator is that between the water-filling opening and the overflow opening.

In the design of this generator, every possible contingency has been anticipated to assist the operator and to insure freedom from trouble through shut-downs under the most trying conditions.

On one side of the generator, an operating platform has been provided. The emptying and recharging operation has been reduced to the simplest possible procedure. The carbide feed valve has been particularly placed and designed to be accessible, easily cleaned and free running. For inspection of the carbide valve, a large hand-hole on the side of the generator is provided.

For inspection and maintenance, it is necessary only to remove the hopper flange bolts, after which the whole top or hopper section of the generator is raised back on a hinged joint to rest on the charging platform.

A simple and fool-proof filter unit is built into the rear of the regulator.

In other words, here is an acetylene generator with the largest rated gas capacity ever approved, the smallest dead weight per unit of producing capacity, simpler and faster means for emptying and recharging and many other features to benefit the man who is to use it.

Light and War

If airplane bombardments on cities can be prevented and troops can be hindered from reaching their destination, will war end? This question is being discussed in France today because of the invention of Edmond de Christmas.

M. de Christmas has invented a lamp capable of producing light of great intensity. It is similar to the light produced by the ignition or flashlight powder but it is more powerful, of longer duration, and is smokeless. A flash lasting twelve seconds of 3,000,000 candlepower has been developed. The lamp is light in weight and can be easily moved, although the metal reflectors are 150 feet in diameter. The metal used for flashing is not found in France or Europe but is imported from the United States.

Suppose an airplane attack on a city is planned. Lights could be flashed in different locations around the city. This would be done on different nights to confuse the enemy while they are attempting to locate the city. If the city were located, all that would be necessary for defense would be to flash this powerful light. The pilots of the planes would be blinded, thus losing their equilibrium and control of the planes. This would result in disaster for both the planes and pilots.

The eye can become accustomed to this light if it is not too bright. After blinking several times, one can see again. If the light is too bright, the retina of the eye will be permanently injured.

Suppose that troops were attacking or marching toward a city. Since these lights can be carried on airplanes, it would be possible to paralyze the entire army.

Experiments have shown that this light can do all that has been claimed for it. —*New York Times.*

Colorado Comes Closer to the Coast

By a 38 mile railroad cut-off, "The Dotsero Cutoff," completed in June of this year in western Colorado, the length of time en route from Chicago to the Pacific coast via Colorado is reduced by eighteen hours. The new route utilizes part of the old Moffat road. It includes the six-mile Moffat tunnel and connects with the Denver and Rio Grande railroad.