

gearing is accessibly located for removal or repairing. The producer shell is of steel plate and is secured to a cast iron base ring, to which is bolted a cast iron water seal, forming an ash receptacle. The base rests upon a cast iron revolving turntable, which, as it turns, rotates with it the body of the producer and the ash pan.

The bottom of the turntable is fitted with a steel tread resting on conical rollers. As the producer shell revolves, the ashes work down and are deposited in the rotating water sealed ash pan, from which they may be shoveled directly to a car by a man standing at one side of the producer, no special machinery being required. The producer is arranged for the usual fire brick lining. The producer top is a steel casting flanged and ribbed to provide for water cooling, a water seal being formed by a top flange at the outer circumference of the producer cover. The use of a steel casting for this part adds materially to its durability, as experience has demonstrated that steel castings withstand exposure to heat much better than cast iron, and decrease the expense for repairs.

The producer top is equipped with two feed hoppers fitted with counterbalanced bells and water-tight swing covers. These hoppers are located at different distances from the centre of producer top, and deposit the coal in concentric rings as the producer top revolves, thus facilitating the

proper distribution of the material. To the top of the producer is attached the gas outlet, provided with cleaning door, peek holes, etc., and having a short flanged neck, to which a connection from the gas outlet to the gas flue may be made. The base of the producer has a gas inlet pipe, with a cast iron deflecting plate covering the air opening, as shown, and a suitable blower is furnished.

The quality of the gas produced by the mechanically poked producer, using bituminous coal, has been found, from repeated tests, to be very uniform, many of these tests showing between 3 and 4 per cent of CO₂, and from 26 to 28 per cent. of CO. It is claimed that an average uniform quality of gas can be maintained of the following composition by volume:

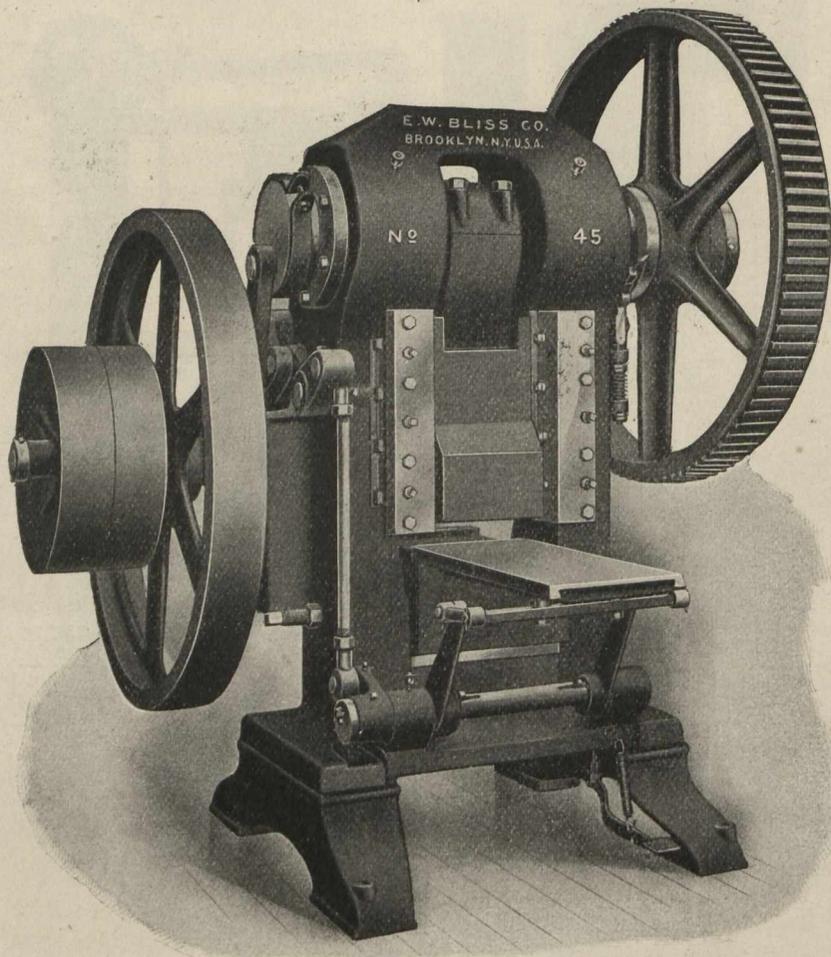
CO ₂	CO	Hydro-Carbons	H	N
4%	25%	3 to 4%	13%	53%

These producers are usually driven by alternating or direct current electric motors, 3 HP. being sufficient to operate a single mechanically poked producer. The labor required depends somewhat upon the arrangement of the plant and the facilities for coal and ash handling. In plants where the coal is delivered overhead into bins and fed to the producer through a chute or by other mechanical device, six men can ordinarily operate eight producers.

HEAVY EMBOSsing PRESS

The press illustrated has been built for very heavy embossing work, including the embossing of paper labels. It has a very massive steel frame, the section of the uprights

the slide recedes and takes the position as shown in the illustration. By detaching the automatic device and operating the die slide by hand, work as large as 18" front and back by 13" right and left can be accommodated. The adjustment is effected by means of a wedge in the bed. This



Bliss Embossing Press.

being 12" front and back by 8" right and left. The design results in a very compact machine. The shaft is of hammered steel, of the eccentric type and has a 2" stroke. The distance between the uprights is 20½" and the face of the slide is 13½" x 19¼".

An important feature of the press is the automatic die slide on which the work is placed. This slide will accommodate a single die 12" front and back by 13" right and left, or several dies of smaller dimensions. After the treadle has been depressed, the slide automatically carries the work under the plunger. With the upward stroke of the plunger

wedge is adjusted and held in place by means of a large screw shown in the lower part of the press frame.

The fly wheel of the press weighs about 2,000 pounds. The large gear is shrouded and has a ratio of 7½ to 1. The floor space occupied by the machine is 84" front and back by 86" right and left. The total weight is about 19,000 pounds. The press, which has been designed and built by the E. W. Bliss Co., Brooklyn, N. Y., may also be used for forming and embossing operations in all kinds of sheet metal, and for this kind of work the automatic die slide is usually omitted.