

The *third* test was $1\frac{1}{2}$ volumes of air, 1 volume of gas and the same quantity of water. Time 22.08 minutes; gas consumed 3.46 feet, or $22\frac{1}{2}$ per cent. less time, and 22 per cent. less gas than in the first test.

The *fourth* test was two volumes of air and one of gas; time 21.3 minutes, gas consumed $3\frac{3}{10}$ feet, or 25 per cent. less time, and $25\frac{1}{2}$ per cent. less gas required than in test No. 1.

The *fifth* test was $2\frac{1}{4}$ volumes of air and 1 of gas. I will state that I found the best results were obtained with this mixture. It has been found, in Europe, that $2\frac{1}{4}$ volumes produce the most favorable results; the candle power of the gas has something to do with it, I presume. This is certainly a very close comparison. In this test, the quantity of gas consumed was 3.3 ft., the time occupied was 21.4 minutes, or 26 per cent. less time, and 26.1 per cent. less gas required than test No. 1.

In the *sixth* test, the gas was *heated*, and the time went up to 27 minutes; gas consumed, 3.92 feet, reducing the time to $5\frac{2}{10}$ and the gas to 11 per cent.

The *seventh* test was *heated* gas and *heated* air; the time required was $26\frac{3}{4}$ minutes; quantity of gas consumed, 3.93 feet, or 6 per cent. less time and 11 per cent. less gas.

The *eighth* test was *heated* air and cold gas; time $26\frac{1}{4}$ minutes; consumption of gas, 3.83 ft., or 7.08 per cent. less time, and 12 per cent. less gas.

In tests Nos. 6, 7, and 8, the air and gas were heated separately in coils of copper pipe over separate flames, arranged so that the air or the gas could pass through the coils or not, as was desired. Each of these coils had a heating surface of 472 square inches, and in the tests the tubes were heated to redness. The conclusion is that the best condition for burning gas, according to these tests—is $2\frac{1}{4}$ volumes of air and 1 volume of gas, and both of them in their normal condition or cold.

COOKING TEST

MADE BETWEEN A NO. 8 PEERLESS RANGE AND A NO. 7 SUN DIAL GAS STOVE.

I have also copies of tests that were very carefully made a few days ago—made as carefully as I knew how to make them, of the difference in cooking between a regular range and a No. 7 gas stove. The articles cooked were twelve in number, and were cooked so that they were all ready to place upon the table at once. The range used was a No. 8 Peerless Range." The articles were weighed before cooking, and also after cooking, and the percentage of loss in weight, and the time re-

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