leafy formations between the layers, and as a series of particles in size between 80 and 100 mesh; moreover, some of the sulphur is present as organic sulphur. It is impossible to get rid of this latter portion by any specific gravity method of separation, and it is called the fixed sulphur.

The following are the specific gravities of the coal constituents:

				1	Į.											12.12.2
Slate,											-					3.83
Coal								•								1.27
Splint or	bo	ne	. ,							0		,	,	ł		1.50
Pyrite													,			4,80

In order to determine the best possible separation that can be effected with the coal in question by means of a specific gravity method, the following experiment has been made: A calcium chloride solution of slightly higher specific gravity than that of coal, and less than that of the other constituents, was put into a glass jar of about ³-gallon capacity; to this solution was added a weighed quantity of coal of the same size as supplied to the jigs. The contents were stirred briskly and allowed to settle. The sample was now found to be divided into two portions. All particles of a specific gravity less than that of the solution had floated, while all the particles heavier than that had gone to the bottom. Between these two layers there remained suspended in solution a small proportion of the particles whose specific gravity was about that of the solution. The floating and sinking portions were separately removed, washed free from the solution, weighed, and analyzed. From the data thus obtained we calculate the purity and yield of the floating portion or the washed coal obtainable. This is the simplest and most effective coal washing operation that can be performed, and the results of this experiment determine absolutely for any coal the maximum purity of the washed coal obtainable from it by any washing process. The calcium chloride solution used was of 1.35 specific gravity, which was found best suited for this coal.

The results of a series of such experiments conducted at the same time as the analysis already given, are as follows:

Average composition of float on Ca Cl solution 1.35 sp. gr.:

Vol. and Com. Mat.	Fix. Carb.	Ash.	Sulphur.
36.67 .	59.92	3.41	1.21

From these figures we learn that the coal treated had a fixed

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