11. $(abc' + ab'c + a'b'c = 1) = (b = c')\ (c' < a)$;

12. $(abc' + ab'c + a'b'c' = 1) = (bc = 0)\ (a = b + c)$;

13. $(abc' + a'b'c + a'b'c' = 1) = (ac = 0)\ (a = b)$;

14. $(ab'c + a'b'c + a'b'c' = 1) = (b = 0)\ (a < c)$.

The last two causes, as we know, are the equality (1) itself and the absurdity $(1 = 0)$. It is evident that the cause independent of a is the 8th $(b = 0)\ (c = 1)$, and the cause independent of c is the 10th $(a = 0)\ (b = 0)$. There is no cause, properly speaking, independent of b. The most "natural" cause, the one which may be at once divined simply by the exercise of common sense, is the 12th:

$$(bc = 0)\ (a = b + c).$$

But other causes are just as possible; for instance the 9th $(b = 0)\ (a = c)$, the 7th $(c = 0)\ (a = b)$, or the 13th $(ac = 0)\ (a = b)$.

We see that this method furnishes the complete enumeration of all possible cases. In particular, it comprises, among the *forms* of an equality, the solutions deducible therefrom with respect to such and such an "unknown quantity", and, among the *consequences* of an equality, the resultants of the elimination of such and such a term.

48. The Geometrical Diagrams of Venn.—Poretsky's method may be looked upon as the perfection of the methods of Stanley Jevons and Venn.

Conversely, it finds in them a geometrical and mechanical illustration, for Venn's method is translated in geometrical diagrams which represent all the constituents, so that, in order to obtain the result, we need only strike out (by shading) those which are made to vanish by the data of the problem. For instance, the universe of three terms a, b, c, represented by the unbounded plane, is divided by three simple closed contours into eight regions which represent the eight constituents (Fig. 1).