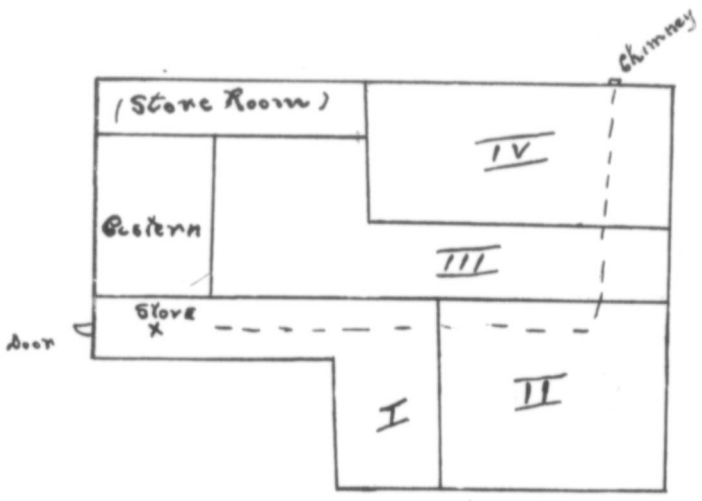
by means of which we can secure a steady ventilation or, in other words, draw or push atmosphere. For some years my thought ran in the direction of electricity; and, although it is not yet within the range of the practical, I believe that the time is not far distant when by a system of storage batteries we can, at a nominal outlay by wind mills, produce electricity which can be used as required for power, heat, and light; and by means of electric carrents, ventilators will open and shut, and heat be applied or cut off automatically as the temperature rises and falls in the cellar. For the present we have the power to force currents in whatever direction we may desire by means of artificial heat. The same heat also serves to regulate the temperature; and here we have a theory that is practical.

The first test was conducted under the following conditions: A large stone cellar was divided into five parts, four of which were used for the bees, and these repositories communicated with one another by means of doors, and also by means of openings fourteen inches square near the top of the room; and through these openings a pipe ran. The size of the pipe was six inches. The remainder of the openings, of course, allowed a circulation of air from one room to another. (See plan below.)



A "Tribune" stove was placed near the cellar door, which communicated with the outside; and through this door the fresh air from the outside had access The air in its natural course, by means of the openings around the stovepipe, passed from room to room; and finally in the fourth room passed out by means of a similar opening in the chimney,—the same chimney into which the regular pipe entered. This chimney has, in addition, a pipe entering it from the stove used in the living room above.

The fuel used at first was wood; but the pipe was too hot and irregular, and gave out more or less odor, particularly the last portion which became cool before entering the flue. Stove coal was subsequently used for 3½ months—2,550 pounds having been consumed.

There were 70 colonies in number one, 75 in number two, 80 in number three, and 75 in number four. The bees were put in number one on October 26th, in number two on November 20th, in number three on November 21st, and in number four on November 22nd.

In the records (with one exception) the variations in temperature were very slight. The night of February 14th the fire went out, and the next morning the cellars registered as follows: number one, 38 degrees; number two and three, 40 degrees; and number