

average price paid for hogs was sufficient to afford a handsome profit to the farmer who managed the business well. High prices are bound to come again, sooner or later, and, judging from present conditions, they will not be long delayed; and, averaged up with those of the past fall and winter, will afford a margin on the right side of the ledger.

Judged from this standpoint, will it not pay farmers to produce hogs in sufficient numbers, at least, to consume the coarse grains grown on the farm? The trouble in the past has been that too many farmers have gone into hog-raising on too large a scale, and have sacrificed some other branch of farming in order to do so. When a slump in price has come, these have been hard hit. The farmer who has made most out of hogs, and who will continue to do so, is the one who has had to buy as little feed as possible for them. He is not hard hit when a slump in price comes, and makes a big profit when prices are high. If every farmer would do this, the supply could be kept up to a steady quantity year in and year out. The trade would be firmly established, and the market for Canadian bacon in Great Britain retained.

CHRONICLE.

### SOME SYSTEMS OF STABLE VENTILATION.

In my last article, issue March 5th, I made mention of a stable 30 x 36, that should accommodate 20 head of cattle. Taking this as the stable to be ventilated, any one of the systems described below might be installed. These systems have all been tried by the writer, and all found fairly satisfactory.

It will be remembered, however, by any who happened to read my previous remarks on this subject, that I expressed myself of the opinion that properly-built walls and ceiling are an absolute necessity where thorough ventilation and perfectly sanitary conditions are hoped for, whatever be the system decided upon. Constructions likely to prove fairly satisfactory are indicated in the wall structures illustrated in the diagrams showing the different ventilation systems.

#### SYSTEM OF VENTILATION "A"—PIERCED WALLS.

This system of ventilation is simple and cheap of installation. All that is required is the piercing of square or round holes on all sides exposed to air. These holes or openings in our standard stable (30 x 36) should be 4 inches in diameter, at 3-foot intervals, or 6 inches in diameter at 6-foot intervals, in at least three sides of the building. They had better be provided with some sort of door or key to control either incoming or outgoing currents of air. The fresh air will, if permitted, enter from the side against which the wind strikes. Hence, the openings serving as inlets one day, or at one moment, may be outlets the next moment or any other day, depending, of course, upon the direction of the wind. When calm prevails, internal influences will exert the controlling force as to which openings shall act as inlets, and which others as outlets.

The controlling and limiting of the rate of inflow of air is essential. The outflow will usually require that the controls or keys be fully open. The temptation to partially plug the holes with wisps of hay or straw must be guarded against.

#### SYSTEM OF VENTILATION "B"—VENTILATION BY CONVECTION.

In the system described below, the proper distribution of pure air throughout the stable depends for the most part upon convection or circulation of air in the lower half of the stable, due to the heat from the animals, causing displacement of the lower air, which, when warmed, will ascend and be displaced by cool, fresh air entering by "A" or "B," or by both, or numerous similar openings.

The impure air leaves the stable by outlet D. C C are windows hinged at the bottom, and held in position by small chains from A to B. The windows may be of any desired width or height. If very high, it is advisable to have the lower half stationary, and the upper hinged thereto, as in B.

The outlets D E F, for such a stable as mentioned, if single, should be about two feet square. If it is preferred to have two outlets, as is probably somewhat better, then each outlet should be 1½ feet square. This outlet pipe D E F may be in the center or to one side. So far as satisfactory working is concerned, I may say that I have had almost equally good results when the pipe took the courses D E F, D E E I, F I, or D I E I F I, provided always that the outlet F or F I was 2 or 3 feet higher than H, the apex of the roof. To prevent in some measure inflow of snow or rain, a cap, G, should be constructed over the outlet pipe. If conveniently situated, D might serve as an opening through which to drop bedding or feed.

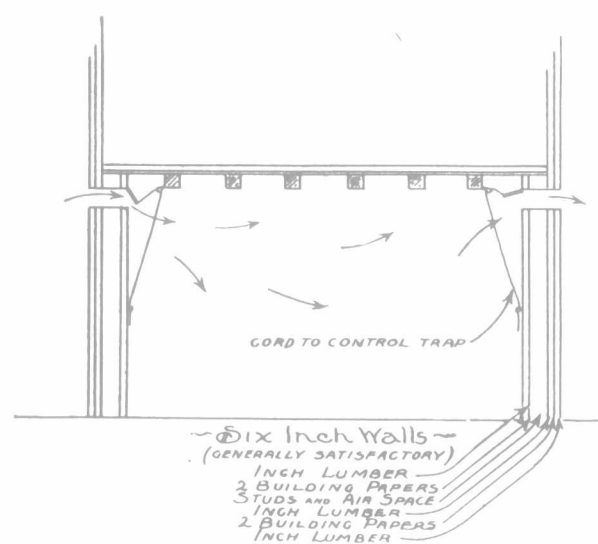
The amount of air to escape through the outlet is controlled by the trap, T, which may be regulated by cords descending into the stable.

#### SYSTEM OF VENTILATION "C"—THE RUTHERFORD SYSTEM.

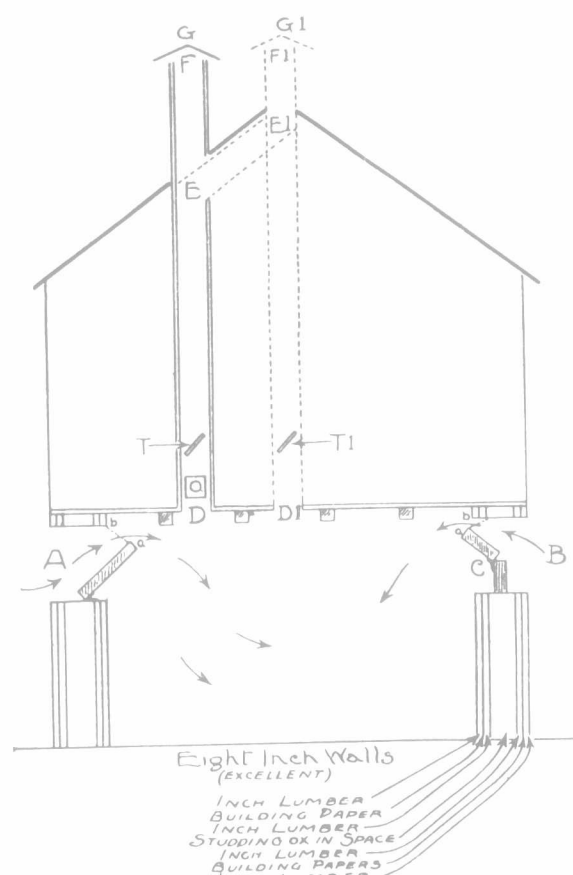
This system is no doubt pretty well known to most agricultural newspaper readers, but a few descriptive paragraphs will probably not be taken amiss. It is the system most commonly used here, for the reason that it has proven to be most simple of manipulation, and affords the least opportunity of being badly worked or blocked by cattlemen unwisely anxious as to the comfort of their charge.

This system requires that the air enter at or near the floor level. The best plan of bringing it in is probably as shown on the left-hand side in the diagram, where the arrows at A indicate the entrance of the air and its passage through A B C under the wall. When the air current enters the stable, it has an upward direction which it retains in some degree, but once free from the confining passage it diffuses and takes usually the course indicated by the arrows.

If for any reason it is not considered advisable to pass under the wall, then an opening



Plan A—Pierced Walls.



Plan B—Ventilation by Convection.

through the walls, at the level of the floor, will serve the purpose. In such case it will, however, be found necessary to so surround the opening into the stable as to give the entering air current an upward tendency. The air current would then follow the directions indicated by the arrows on the right side. As to the outlet, the same plan serves as was described in writing of Ventilation Plan "B."

#### SYSTEM OF VENTILATION "D"—THE KING SYSTEM.

Like the system just discussed, the King system is well-known to readers of "The Farmer's Advocate." It has many admirers, and many have succeeded with it. It is most remarkable in this, that the foul air is drawn from the floor, and the fresh air enters at the ceiling. In the previously-discussed system, as will be remembered, the foul air in every case was drawn from

the ceiling, while the fresh air came in at different points from the floor to the ceiling, according to the system being considered.

The advocates of the King system claim that, since carbonic-acid gas is the chief impurity in the stables, and since this gas is heavier than pure air, it is likely to be found in largest quantities near the floor, and, therefore, outlets for impure air should begin near the floor level.

In the cross-section diagram, the inlet is shown by arrows running from A to C. The outlet begins at B, and the foul air goes up the tube and out at E. Both inlets and outlets occur on each side, and should be at intervals of about 10 feet, say three of each on each side. Where this number are provided, then each inlet and each outlet should have a cross-sectional area of at least 60 square inches, say 4 x 15 in. Where it is intended to install this system, it should be provided for when building the walls. Spaces between the studs will serve for both inlets and outlets.

The outlets B L E might be modified to take the course B L M, in which case it would be necessary to extend M above the apex of the roof. At O, openings should be made into the outlets, so that the warm air at the ceiling may be allowed to escape when the average stable temperature rises too high.

The chief objection to this system is the large number of long pipes or boxes necessary to admit pure and discharge foul air, as the case may be.

This objection is particularly in evidence when it becomes necessary to install the system in an old building. A modification of the system, and one that is easy of introduction in an old or new wooden building, is given below.

#### SYSTEM OF VENTILATION "E."

This system, a modification of the King, admitting of cheap and easy installation in either new or old frame or log buildings, is one which the writer devised and put into operation some years ago in stables at the Experimental Farm and elsewhere. It has worked very satisfactorily where fairly tried. That it is cheap, as well as effective, is proven by the fact that, in a stable for 22 cattle, it cost \$12 for labor and material. The pipes in this system are entirely inside the stable. For 20 cattle, in the standard stable, they should be six in number, each about 12 in. by 6 in., or 12 in. by 7 in., in cross-section, three on each side (east and west sides, if possible).

Each ventilating pipe must have two openings to the outside air, one an inch or so below the ceiling level, as a and b, and the other 6 to 8 in. above the floor-level, as c and d. These openings should be of the same dimensions as the pipes. The air enters the building by passing into the right-hand pipe at D, up past E, and into the stable at F, at the ceiling. It circulates through the building, enters the outlet pipe at A, passes up through B, and out at C. If the wind were blowing from the left, however, it would enter at x, up through B, and out into the stable at y, finding its way out by entering the right-hand tube at d, passing up through E, and out at b.

H J L N represent barriers or trap-doors, hinged at G I K and M, respectively. As set in diagram, air enters by D E F, and discharges by A B C. If set as per dotted lines, then entry would be X B y, and discharge by D E b.

When properly attended to, this is an exceedingly satisfactory system, but when neglected, does not always work well. If desired, trap-doors H J L U may be arranged so as to permit of air entering directly—that is, by flowing through X A and D d—and leaving stable at ceiling—that is, b and Y C—which would be a modified Rutherford system. This latter modification works well in warm weather.

### THE CANADIAN STEER.

There is little chance that the embargo on Canadian cattle shipped to Great Britain will be removed, and the cattlemen of the Dominion—especially the Western exporters—had better make up their minds to try and send properly-fitted steers to the British market in future. A Canadian contemporary has been interviewing a number of gentlemen with large experience of the Anglo-Canadian cattle trade, and one and all are of opinion that it is worse than useless to ship poor stuff to the mother country. Year after year the bulk of cattle from the Canadian ranges arrives in an unfinished condition—probably 1907 was a record year for badness in this respect—and the result is that there is a prejudice in the minds of British buyers against the Canadian range steer, except, perhaps, in Scotland, where Baillie Watson, of Glasgow, spoke recently of "the thrifty Western steer," in words full of regretfulness. Good stuff fetches a good price in the British market, but the lower grade is barely on a par with the chilled beef of Argentina. Canadian cattlemen should remember that the capacious all-red route into John Bull's abysmal stomach is only open to the best that goes on four legs—[Canada (London, Eng.).]