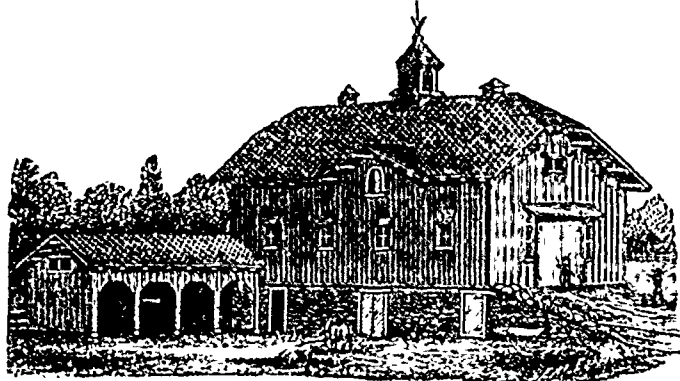


## Rural Architecture.

### Designs for Barns.

In examining the accompanying design—intended to accommodate about twenty head of cattle with



Design 1—Barn for Cattle.

all the conveniences suitable for a first-class barn—it must be borne in mind that there will always be considerable variations, according to local circumstances, the surface of the ground, and the wants of the owner. We could give half a dozen plans, all quite different from each other, and each adapted to some peculiarities of position; but the one now described is one of the most convenient, when the ground, is in proper shape for it. It is supposed to be placed between two slight knolls or elevations, or to extend across a small depression in the surface of the ground, so as to be easily entered at each end, and admit the free passage of waggons in at one door and out at the other, without the trouble of backing out, as in most barns. Or it may be built on nearly level ground, ploughing, scraping and lowering the place for the basement only a few inches, or not over a foot, and placing the earth thus excavated at each end for the entrance roadway to the floor.

Every barn should have a basement, not only for the cheapness of the space thus obtained, but for the security and preservation of the timbers, and we shall take it for granted that every good plan makes provision for such a basement. We begin therefore at the bottom. The barn is supposed to be 48 feet wide and 72 feet long, and will be spacious enough for a good hundred-acre farm, under fair cultivation. The size may be varied, and the plan is of such a character that any desired length may be given to it. The plan of the basement (fig 1) nearly explains

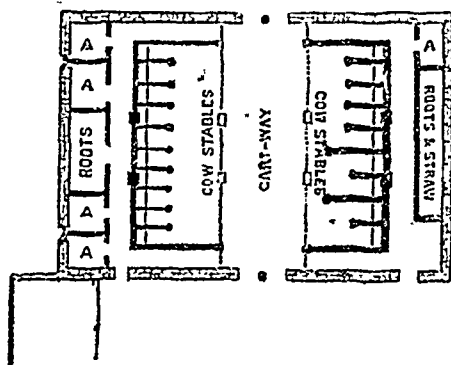


Fig. 1.—Plan of Basement.

itself. A cart-way a little lower than the stalls, and 12 feet wide, runs across through the centre, chiefly for the purpose of carrying off the manure as fast as it accumulates. There will be no difficulty in making this through passage, provided the ground is nearly equally level on both sides of the building. But it will not be practicable if it stands on a slope or hillside, in which case the cart must be backed in through the double door for drawing out the fresh droppings or manure.

More space is given to the cattle-stalls than is usual, both for the health and cleanliness of the animals, and for the convenience of the attendant. By taking off a space or passage-way next the wall three feet wide, 40 feet will remain for the stalls, allowing each one to be four feet wide, except that on the right side, there are four stalls that are each five feet wide, to admit larger or fattening animals, or to be used as horse-stalls occasionally, if circumstances should require. The free passage which extends all around both lines of stalls contributes greatly to the health of the cattle, by allowing a freer circulation of air, and preventing contact with the damp walls of stone. The small apartments, A A A A, which may be 8 by 10 feet, are intended as calf-pens, or for cows expected to have calves. The root bins at each end are protected from freezing in winter by two or three feet of loose straw thrown down upon them from above.

The fodder for the cattle is passed down from the bay through the ventilators or shoots, VV, fig. 2, into the passage in front of the mangers, and the

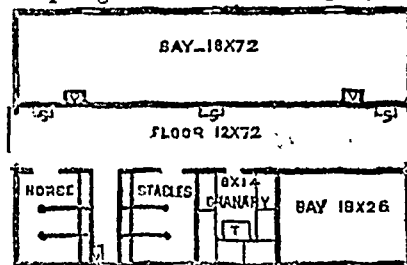


Fig. 2.—Plan of Main Floor.

straw for covering the roots, and littering the stalls is thrown down through the side trap-doors, SSS, from the threshing floor.

The horse stalls are placed above, as being drier and more healthy—although by the usual close and compact way of constructing cattle stalls, enough room would probably be left for both below; but we prefer more space and better health. The stalls for the horses on the upper floor may be 5 or 5½ feet wide, leaving one in each apartment next the doors 7 or 8 feet wide, so that a pair of horses in harness may be driven in and fed side by side, in the middle of the day, or at any hurrying time, without stopping to unharness or separate them. The dotted lines in the passage between the horse-stables show the place of the ventilator overhead. The hay may be thrown from above through this ventilator, or it may be fed to them from the barn floor.

The granary will hold several hundred bushels of grain and meal. A waggon may be readily loaded from this granary by passing the filled bags down through the trap-door T, to the waggon below in the passage already described; and a tube and slide may enable the attendant to draw oats or meal for the animals below.

If desired, the space of the smaller bay, at the right of the granary, may be occupied as a tool-room, workshop, &c.

The perspective view of the barn (at the head of this article) is intended to represent a handsome exterior, suitable for a farmer who has some regard to the ornamental appearance of his estate—the additional cost being more than compensated for, by the protection afforded from the weather by the broad projecting eaves, and by the thorough oiling and painting of the outside. The posts should be not less than 20 feet, as horse-forks will throw up the hay, &c., with ease to the top of the bays. The space contained in the large bay will be over 30,000 cubic feet; in the bay opposite, and over the nine

feet space of stables, will be over 20,000; while space equal to 6,000 may be occupied on platforms over the floor. In all, 56,000 cubic feet, or enough to stow away about 100 tons of hay, or 50 tons of hay and an equal amount of unthreshed grain.

#### Some of the Details.

There are several details connected with the construction of this barn that should not be overlooked.

Slate for the roof is the best and cheapest material that can be used on a barn, when its durability is taken into account; and the rainwater will be cleaner and purer than from any wood roof. But if shingles are used, the whole should be well coated with crude petroleum. Two barrels of petroleum, costing about twenty-five dollars, would cover the whole roof of this barn, and a man with a whitewash brush would apply it in three days, making the whole cost only thirty dollars, and it would be worth at least three hundred dollars.

The whole surface of the roof, including the eave projections, would be over 4,000 square feet, and more than 2,500 barrels of water would fall annually upon it, affording seven or eight barrels daily for watering cattle, if supplied from this source all the year round. If, therefore, there is no water from springs or wells, the cisterns should hold 700 or 800 barrels, so as to afford a supply for three or four months of dry weather, should it occur. If there are other sources of water supply, this size would not be necessary.

The shoots or ventilators used for throwing down hay from above, should be planed smooth inside, and be slightly larger below, so that the hay will have a free passage down, and not lodge in them. The position of the ventilators not being exactly under the peak of the roof, and the one from the horse stables being quite at one side of the barn, they are carried up to the top of the roof, close under it, in the direction of the rafters, as shown in fig. 3.

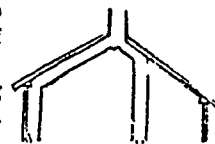
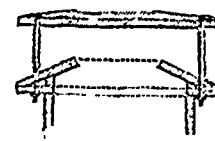
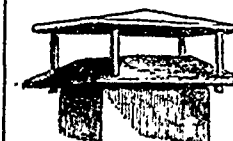


Fig. 3.

The trap-doors for throwing down straw from the barn floor, are not flat on the floor, but open through the board siding which surrounds the floor, the doors dropping flat when opened, and being buttoned up again when not in use.

The ventilators at the top of the roof, near each end of the building, are shown by figs. 4 and 5—the first being a perspective view, and the second a



Figs. 4 and 5.

section. They are made of two-inch plank, the top being held to its place by iron rods firmly screwed on. These ventilator tops cost but a few dollars each, and if made in the form represented, will always cause an upward current through the tubes when there is any wind or breeze.

A tube or discharger may pass from the granary to the stables below, for the conveyance of oats or feed, and always furnish a ready supply, if made in the form shown in fig. 6. The grain may be scooped up with a dipper from the horizontal open box, which may commonly be covered with a lid at the dotted line, and locked, if desired, when not in use.



Fig. 6.

All the bins in the granary should be graduated up the inside, so as to show by figures how many bushels they contain at any height. This can be done by measuring the size and calculating the contents, allowing 2,150 cubic inches to an even bushel. The cost of this barn will vary greatly in different localities, with cost of materials and perfection of finish.—*Illus. Annual Register of Rural Affairs.*