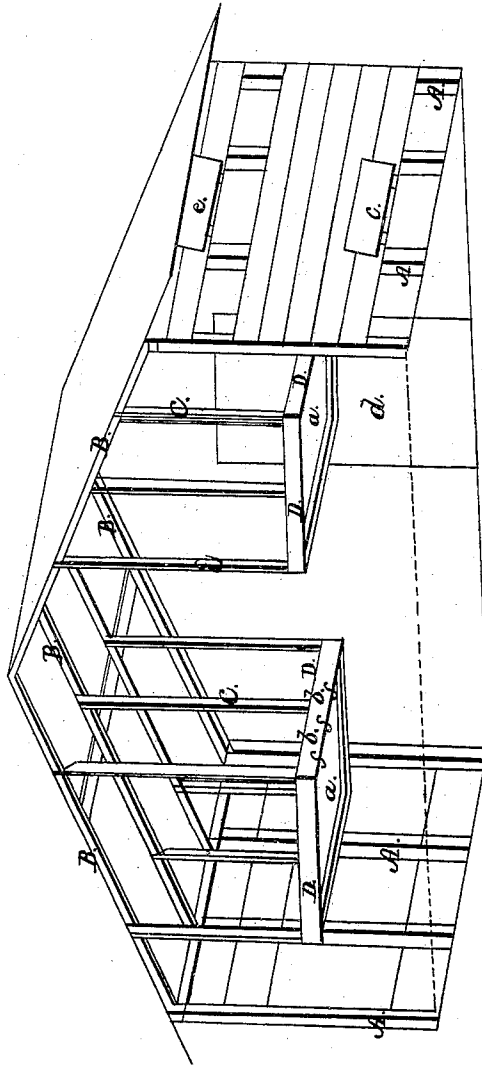


J. B. Tillinghast.
Man. of Silk.

N^o 2,331.

Patented Nov. 10, 1841.

Fig. 1.



UNITED STATES PATENT OFFICE.

J. B. TILLINGHAST, OF NORWALK, OHIO.

METHOD OF CONSTRUCTING AND ARRANGING COCOONERIES FOR SILK-WORMS.

Specification of Letters Patent No. 2,331, dated November 10, 1841.

To all whom it may concern:

Be it known that I, J. B. TILLINGHAST, of Norwalk, in the county of Huron and State of Ohio, have made a new and useful Improvement in the Manner of Constructing and Arranging Cocooneries for the Feeding of Silk-Worms, by which construction and arrangement the business of rearing the worms is greatly facilitated, and the cocoons are produced in a more perfect state than under any of the artificial arrangements now in use for that purpose; and I do hereby declare that the following is a full and exact description thereof.

In the feeding of silk-worms, the greatest difficulty and labor occur in the last stage of this operation; that is to say, after the fourth moulting; and it is to this stage of the business only that my improvement applies. In the old way of feeding the worms upon shelves, or hurdles, at a period when so much food is required by them as in this last stage, and when it is necessary to be especially careful to keep them well supplied with food, and perfectly clean, in order to insure their remaining in a healthy state, so many difficulties have been encountered, as to cause the abandonment of the business by numbers who had engaged in it, and to render it manifest that without some great improvement it could not be carried on in a country where hand labor is attended with the expense incident to our situation in the United States. It must be admitted, also, that the more nearly we can allow the worm to operate according to its natural instincts, the more likely we shall be to succeed in our efforts to derive profit from its products. Under the guidance of the experience and of the reasoning above noticed, I have so constructed a part of my cocoonery as to admit of the worms being fed upon whole trees, or upon the large branches of trees; and upon these also they are allowed to spin their cocoons.

I feed my worms, as formerly, upon shelves, until they revive from their fourth moulting, when I remove them to an apartment constructed for the special purpose above indicated. This apartment, which I denominate the cocoon room, may, of course, vary in its dimensions; the following is a description of that which I have erected, in which economy has been particularly consulted, and I do not intend by this description to limit myself to the respective dimen-

sions, or to the particular manner of forming the structure any further than it affects the manner of feeding the worms, and of providing for their spinning. The cocoon room which I have erected is a hundred and forty feet long, and eighteen feet wide; the studs of this building consist of hewn posts set firmly into the ground about six feet apart, the common earth constituting the floor of the apartment. Upon these studs, or posts, the rafters are placed which are to sustain the roof. Where one tier, only, of frames is used, which is the plan I have adopted, and deem the most convenient, the height of the studs, or posts, is about seven feet, but it would be possible to construct a double tier upon a similar principle; in which case a corresponding height must be given to the studs.

In the accompanying drawing, Figure 1, represents a section consisting of one end of my cocoon room.

A, A, is a part of the posts, or studs.

B, B, is a part of the rafters.

The feeding frames which are to support the worms upon shelves when first placed there, and which are to sustain the trees and branches after the shelves are removed, are suspended from the rafters, so as to stand about two feet and a half, or three feet, from the ground.

C, C, represent strips of wood nailed to the rafters at their upper ends, and to the side timbers D, D, of the feeding frames at their lower ends. These feeding frames I have made four feet wide, and eighteen or twenty feet, more or less, long; there being an alley, or spare way, between them and the sides of the building, of two feet six inches; and along the middle of the building an alley, or space, of about five feet, between the frames. At every eighteen or twenty feet, more or less, I leave a space of about five feet across the frames, to allow of passing from the middle to the side alleys, and of taking a hand cart, or other vehicle, from place to place. The frames D, D, are made open, consisting only of side and end pieces, as they are to receive the shelves and worms from the other apartments after the fourth molting. These shelves are to be attached to the under sides of the feeding frames by grooves, cleats, and bottoms, hooks, or other suitable means.

The shelves used in the feeding room, where the worms go through their first

stages, are made of thin boards, say half an inch thick, and are capable of being removed in sections, with the worms upon them; and they must be of such width as to adapt them to the frames in the cocoon room. A section of these shelves is shown at *a, a*, attached to the under sides of the frames *D, D*, by cleats, hooks, or other devices, as at *b, b*. When the worms have been so disposed of, I take strips of wood, say of an inch square, and four feet, or somewhat upward, in length, and place these across the frames *D, D*, resting upon their upper edges; these may stand a foot or two apart, according to circumstances. Upon these, I lay the trees and branches, covered with fresh foliage. The worms will soon leave the shelf and ascend upon the trees, and when they have done so the shelves are let down, by unhooking, or unbuttoning them, and are removed out of the way. The worms have then a perfectly free circulation of air, and the litter from them falls unobstructedly on to the ground, and may be swept out at any time. For the convenience of doing this, and for perfect ventilation, I let the lower board of the sides of my cocoon room constitute shutters, which are hung by hinges, or otherwise, to the boards above them, as at *c*. I make similar openings in my weather boarding, near to the eaves, and along the whole building, to which I adapt shutters as at *e*; *d*, represents an end door. The worms after feeding upon the leaves will spin their cocoons upon the twigs and branches of the trees, and that in the most perfect and beautiful manner; and, what is particularly remarkable, they will never when thus accommodated form double cocoons, which so often become sources of loss in the spinning upon the kinds of apparatus

heretofore employed for that purpose. The cocoons have much less floss upon them than is usual, and can be very readily gathered without injuring them, although they are so thickly deposited that I have gathered fifteen pounds and a half of good cocoons upon a space measuring four feet in width, and five and a half in length.

The approach of mice, so frequently destructive of the worms and the cocoons, is effectually guarded against by the suspending of the frames in the manner described, and by the addition of a shelf surrounding each of the suspending strips, toward their upper ends.

Having thus, fully described the nature of my improved structure for the feeding of silk-worms after their fourth moulting, and for furnishing a lodgment upon which they are to spin their cocoons, what I claim therein as new, and desire to secure by Letters Patent, is—

The manner of constructing my frames in the cocoon room by suspending them from the rafters, and so that the shelves from my feeding room can be readily attached to, and removed from, their under sides, and that the trees, or large branches, which are to supply the last portion of their food, and constitute a lodgment for the cocoons, may be sustained upon strips of wood, for the purpose, and in the manner, herein set forth; and I claim the so making and using of the said structure, or apparatus, for the purpose, and in the manner, aforesaid.

J. B. TILLINGHAST.

Witnesses:

THOS. P. JONES,
WASH. PEALE.