

CIRCULAR WOOL DRYING TOWERS.

Ray Wilson

The 1981 GSIA Journal contained a short article entitled "Wool drying stoves along the Painswick Stream" by Mrs colleen Haine (1). Documentary evidence shows that there were at least nine such structures in this small area alone. However, of these, the only substantially complete example is that at Kemp's Lane Painswick. There is a ruined example at Upper Baylis's Mill Painswick which stands about four foot high.both of these have the form of a round tower.(1)

A similar and particularly well-known example of a round tower associated with the woollen cloth industry is the Round House at Frogmarsh, Woodchester near Stroud. The building was extended and converted into a dwelling in 1982.(2,3)

The circular wool drying tower (or wool fire stove) and how it was used in the west of England was described in some detail by william Partridge writing in the United States in 1823.(4) His book entitled 'A Practical Treatise on Drying of woollen, cotton, and Skein' is reviewed elsewhere in this issue.

Although many people are aware of the existence of the drying stoves it is apparent that few are familiar with their internal arrangement. Therefore the artists impression shown here has been constructed and is based entirely on the following extract from Partridge (pp34-35).

"In England the wool fire stove is a circular building, either of brick, or stone, of about sixteen feet diameter in the clear, containing three floors, the height of each being eight feet. the two upper floors are laid with strips of well plained inch board, two inches on the face, and sufficient appertures are left between the strips, for the heat and steam to pass, yet close enough to prevent the wool from falling through. It is heated by a cast iron stove three feet high, in diameter two at the bottom, having a dome top and open at the lower end. In the centre of the top is a circular opening of eight or nine inches diameter, in which is inserted a cast iron pipe, that passes perpendicularly through the centre of the building, and terminates three or four feet above the roof: a sufficient space is left round the pipe where it passes through the floors and roof, as to prevent any damage from the fire; and at those places the pipe is steadied by iron rings around it, and arms branching from them which are fastened to the floors and roof. the iron rings are large enough to admit the pipe, and leave a space of one inch between the two, so as to admit of the pipe being taken out when by any circumstance it should be rendered necessary, as well as to cut off the communication between the two, in order to prevent the heat from being conducted along the arms, by which the safety of the building might be endangered. Three wedges with bent tops are dropt in between the pipe and each ring to keep the pipe

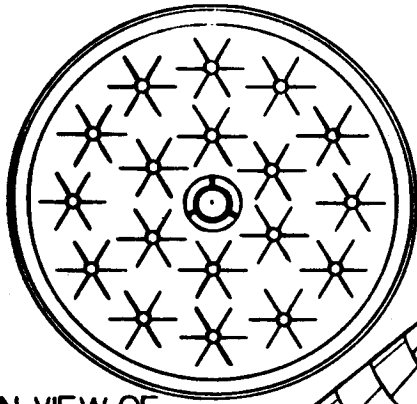
exactly in the centre. The lower floor is paved either with stone, brick, or cement; and the stove is placed exactly in the middle of the building, being raised a few inches on brick work, having a grate at the bottom to let the ashes through. the interior of the building is fitted up with convenient machines for drying wool. these are made with shafts three inches in diameter, cut in six sides, in each of which, inclined holes are made to put in arms that project about twenty inches from the shaft; these are round and smooth, being about one inch at the bottom, and tapering to the other end; they are made of any hard well seasoned wood, each one having an elevation from the shaft of about twenty degrees, and when the whole is in place, it has a spiral appearance. On these arms the wool is spread to dry. One circle of armed shafts is placed round the wall, and as near to it as they can be without coming in contact, and another circle between it and the stove, two circles on each floor, with room between the two for a man or boy to pass, for the purpose of putting on and changing the wool. the arms are not permanently fixed in the shafts; they go in loose, but so as not to fall out when the wool is put on, or handled for turning. the shafts are secured in the lower side of the upper floor by means of a round aperture that is rather larger than the end of the shaft, which is also made circular, and by a bolt at the lower end that enters a hole in its supporter; they are thus fixed in order that they may be moved round at the pleasure of the workman, to enable them to bring all parts within their reach when standing on either side. for drying, the arms must be first covered, and then the floor, beginning at the top of the stove and proceeding to the ground floor.

There must be an aperture in the roof, where the steam can pass off; and herein consists the advantage of a circular building; the roof being conical, and the stove pipe passing through its centre, round which an opening is left, the steam naturally rises to that part, and passes off through the said opening. the roof should be covered with slate or pan-tile to make the whole perfectly secure against fire. this stove, if properly attended, will dry two hundred and forty pounds of wool every twelve hours, with a moderate consumption of fuel."

Even with such a full account it is necessary to guess regarding certain features.

For example, there is no description of doors or windows or access to the upper floors. Nor is it clear whether the ground floor (with the stove) was equipped with drying machines. However on the basis of economics we have assumed that it was.

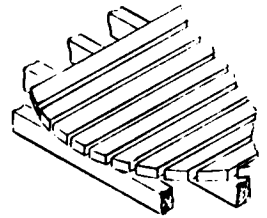
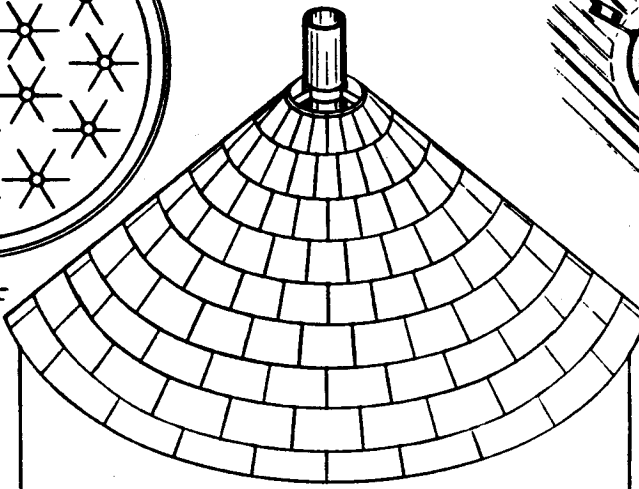
Whilst we cannot be sure that all fire stoves were circular or indeed used in just this fashion, Partridge remains the sole contemporary account of this process.



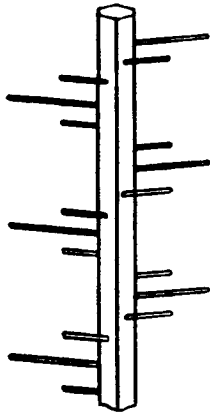
PLAN VIEW OF
POSSIBLE LAYOUT OF
'DRYING MACHINES'



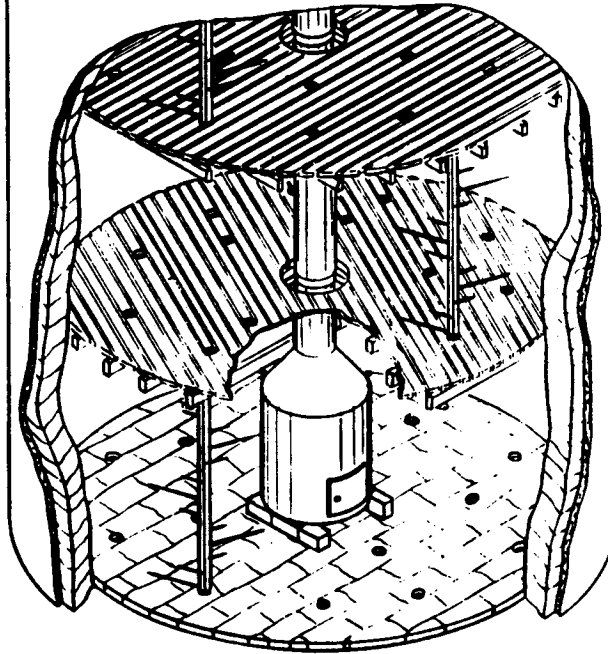
PIPE
STEADY



SLATTED
FLOOR



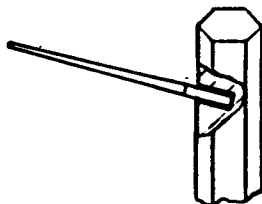
POSSIBLE
ARRANGEMENT OF
'A DRYING MACHINE'



NOTE
FOR CLARITY ONLY
THREE 'DRYING
MACHINES' HAVE
BEEN SHOWN

TWO ROWS WERE
FITTED AS
INDICATED BY ●

DETAIL OF FIXING
'A DRYING ARM'



A POSSIBLE INTERPRETATION
OF PARTRIDGES DESCRIPTION
OF A WOOL FIRE STOVE

We are indebted to the Pasold Research Fund for permission to publish the extract and to Mr John Sirett who drew the artists impression.

References:

- (1) Haine, C.E., GSIA Journal for 1981 pp30-31
- (2) Crawford, G.N., GSIA Journal for 1982 pp41-42.
- (3) Cox, C., GSIA Journal for 1983 p 63.
- (4) Partridge, W., 1823, A Practical Treatise on Drying of Woollen, Cotton and Skein Silk, reprinted 1973 by the Pasold Research Fund Ltd.