

## Wool combs

Unlike the sword beater and the pin beater, the other tools to be discussed here are not used in conjunction with weaving and with the loom. There is no need to dwell on the spindle and distaff, as they can provide no information of interest to the present discussion. Apart from these, the preparatory implements include the wool combs, the reel for making skeins, and the swift for unwinding skeins.<sup>22</sup>

Wool combs were used to comb the fibres, so that they lay even and parallel and could be spun into smooth yarn. The combs are well known from the crafts of the Middle Ages, as well as from the eighteenth century; during this latter period, they were used exclusively for long-stapled wool. There appears to have been little change through the ages. They always occur in pairs, and each consists of one or two rows of iron teeth fixed in to a narrow wooden base. The teeth are about 10 to 12 cm long; in combs with two rows of teeth, the length of the two rows can vary. The handle is fixed at the centre of the row of teeth, and lies at right angles to them. The wool is placed on one of the pair, and combed with the other.

This is the most ancient tool for preparing wool for spinning that is known in the North, and mentions of it occur in literary sources. Among these are references in *Grettis Saga* of the beginning of the fourteenth century, *Heilagra manna sögur* of the end of the same century, and *Flateyrbók* of the thirteenth century.<sup>23</sup> In the first two of these sources, the wool comb is not

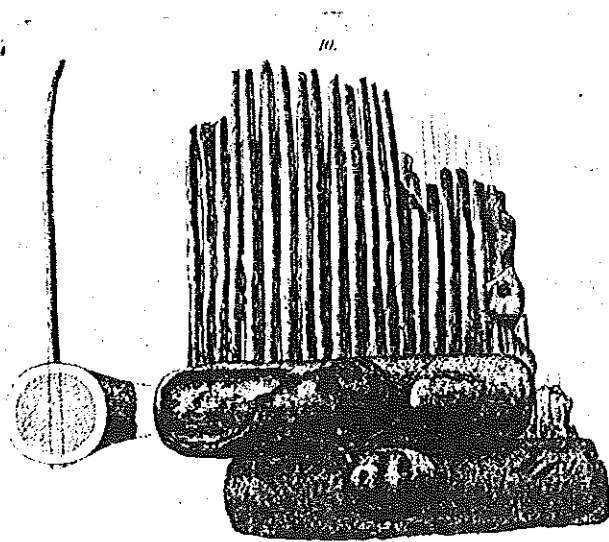


Fig. 117. Wool combs from Hyrt, Hord. HM, Bergen. After FF.

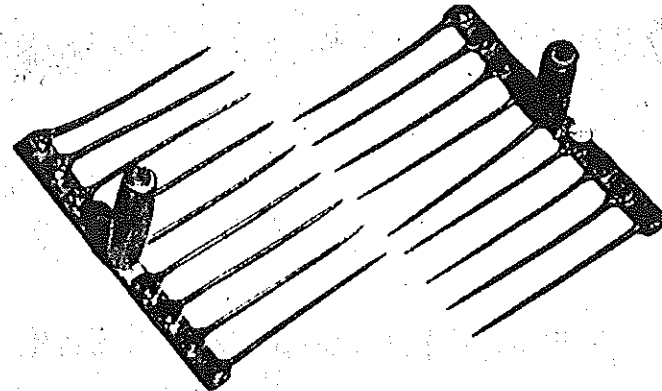


Fig. 118. Wool combs. NMI, Reykjavik.

described as being used for its normal purpose; it is used as a means of punishment or instrument of torture, to tear a man's skin and flesh.<sup>24</sup>

In Scandinavian archaeological publications, we find no mention of wool combs by this name, but if we look at the tools called flax hackles or flax combs, it is discovered that these are quite likely to be wool combs.<sup>25</sup> In burials, the combs are most often found as a number of loose teeth, pointed at one end and slightly bent at the other, by which they had been attached to the base. There is one example of a thin iron base with two rows of teeth preserved intact;<sup>26</sup> this does resemble a flax hackle, and it is probably one of the reasons why the other finds have been considered as such. It is altogether different from the main body of material found.

In several of the finds, it is quite clear that two identical tools lay on top of or beside one another, each of them with a single row of teeth. In the cases where the handles are preserved, the base is distinctly T-shaped, the row of teeth being fastened to the upper arm of the T. A typical, and well preserved, specimen was found at Hyrt, Vossestrand, Hordaland (Fig 117), but there are also others dating from the Viking Age and from Merovingian times.<sup>27</sup>

Apart from the fact that these tools are unlike any that are used in flax preparation, their geographical distribution does not correspond to the evidence recorded on the flax cultivation in Norway.<sup>28</sup> In my opinion, there can be no doubt about these so-called 'flax combs' being wool combs. Their shape, the fact that they occur in pairs, the geographical distribution of the finds — everything points in the same direction.

Unlike Norway, it is not common in Sweden and Denmark to find tools for everyday work in prehistoric burials. For this reason, one cannot expect archaeological finds of wool combs in these countries, except as

occasional chance deposits. I know of no ancient wool combs having been found in Sweden. In Denmark, in Fyrkat, the Viking Age camp, near Hobro in Jutland, an object has been found which in all probability is the handle of a wool comb.<sup>29</sup>

In Iceland and the Færoes, wool combs were still in use until the nineteenth century, when they were superseded by the card, at least in Iceland (Figs. 118, 119). Here the word for wool comb was transferred to the cards.<sup>30</sup> On the Færoes, there are different terms for the comb and for cards, presumably because both were in use simultaneously for a considerable time.<sup>31</sup>

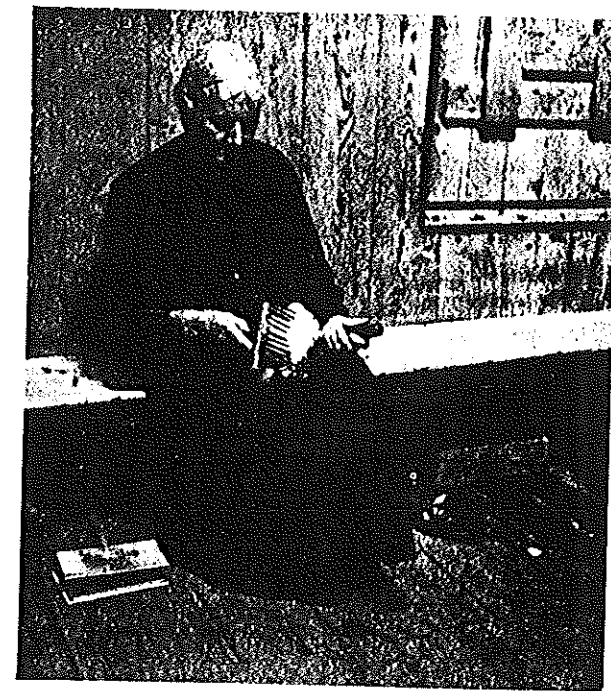
In other Northern countries, it seems that wool combs were in use during two different periods. After they had been superseded in domestic weaving by cards, perhaps at some time during the sixteenth or seventeenth centuries, they were reintroduced as a specialized tool by the professional craftsmen in the manufactories. A few sixteenth-century inventories from Swedish and Danish castles include wool combs; it is possible that this means that wool was prepared in a more professional and specialized way in these higher levels of society at the time. There are no traces of wool combs having been used in domestic work among the common people either then or later.<sup>32</sup>

From archaeological finds, the wool comb can be traced back to the Dark Ages in the North; when it can be traced no farther, this must be due to the lack of sources. It is in the graves of this period that such a wealth of iron tools begins to turn up. There can be no doubt of the wool comb forming part of an ancient complex of common cultural goods connected with the preparation of wool. The Greeks and the Romans used it. Blümner<sup>33</sup> calls it 'a comblike tool of iron'. (A. tr.). This must mean that the teeth, at least, were of iron. As far as Classical Antiquity is concerned, it is a tool that seems to be known only from literary sources.

In the Carolingian capitularies, there is mention of *pectinos laninas*; these must be wool combs, and such tools are shown in medieval illuminations. The earliest representation seems to be from the end of the eleventh century, on the Abdinghofer altar in the Franciscan Abbey in Paderborn, Germany. Here wool combs are shown with a single row of fairly long teeth. They are not being used for their normal purpose, but as an instrument of torture. The subject is the martyrdom of St. Blasius.<sup>34</sup>

A little earlier in the same century, *wulcamb* is mentioned in *Gerefa*.<sup>35</sup> An English MS of the fourteenth century contains an illustration showing a woman using wool combs; one of these is fastened to a post, a practice that was also common in the professional milieu of the eighteenth century. By her side stands a bowl, probably a 'comb pot', in which the combs were warmed.<sup>36</sup>

Fig. 119. Wool-combing in the Færoes. 1947. Phot. Holger Rasmussen.



In ancient Europe, the wool comb must have been the common tool for combing out wool, but as early as during the Middle Ages, it must have become a specialized tool for the preparation of long-stapled wool. It was used for this same purpose by the professional craftsmen of the eighteenth century.<sup>37</sup> For short-stapled fibres, the craftsmen of medieval Europe used two new specialized tools, the bow and the wool cards.<sup>38</sup> The cards, like the combs, were used in pairs, and were made with a wood back, to which was fastened a piece of leather covered with fine wire hooks. A wooden handle was attached to the back. At their first appearance, the cards were met with opposition and suspicion from the guilds. They are unlikely to be much older than the first known prohibitions against them; these date back to the fourteenth century.<sup>39</sup> Originally, cards may not have been used for treating wool. The name is striking; it is the same as that of another tool, the card set with teasles.<sup>40</sup> This was already used by the shearmen of Classical Antiquity for raising the nap on fulled cloth. Teasles were in great demand during the Middle Ages, and it was difficult to procure them in sufficient number. From time to time attempts have been made to find substitutes, and from fourteenth-century England, there is an ordinance forbidding the use of 'iron instruments', cards with iron teeth, instead of proper teasles.<sup>41</sup> These

cards with iron teeth, never really accepted as tools for raising the nap before shearing, may have been transferred to the use for which we know them: that of carding wool. There was a great deal of experimentation with tools and raw materials at this time. Cotton was treated like wool, and wool like cotton. In the fifteenth century, cotton fabrics were fullled as though they were wool materials. *Fustian*, originally in Europe a cloth with a linen warp and cotton weft, was finished by the shearmen.<sup>42</sup>

When the cards with iron teeth were first used in preparing wool, the practice was prohibited, but gradually, it came to be accepted by the trade for working short-stapled wool.<sup>43</sup> Although there is much confusion about this in modern literature, cards with teasles cannot possibly have been used for carding wool. It seems as though the wool cards were invented in Western Europe. They reached Eastern Europe at a late date from the West, and are not known in the East.<sup>44</sup>

The bow, in the form in which it was used by professional craftsmen during the Middle Ages, was undoubtedly introduced from the East. There are very many sources, both of early and more recent date, concerned with its use in various areas, and scholars are generally agreed that it was originally a tool for the preparation of cotton rather than wool.<sup>45</sup> It is quite likely that the Arabs brought the bow to Spain, together with cotton and with the weaving of *fustian*. This probably happened during the twelfth century, or perhaps earlier. From Spain, cotton and *fustian* weaving reached Italy and other parts of Europe.<sup>45</sup>

Walter Endrei points out that the spinning wheel, another appliance originally used for cotton, probably reached Europe in the same way, and it would seem likely that the spinning wheel and the bow arrived together. Endrei emphasizes, and quite rightly, that tools have a tendency to follow the raw materials and the processes of work connected with them. A cultural loan generally comprises the whole complex.<sup>47</sup>

These appliances, originally used for the preparation of cotton, were gradually accepted and taken into use by the wool trade, side by side with the older wool combs and the spindle. Both of the new tools were assigned to the treatment of short-stapled wool, which resembles cotton.

### *The reel and the swift*

The history of the old Western European tool next to be considered is more difficult to trace. The reel for winding skeins is made entirely of wood, and archaeological finds are rare; it is only under exceptional conditions that it is preserved.

When the thread has been spun and the spindle is full, the yarn must be removed so that the spindle can be filled again. The yarn taken off must be wound into units that are easy to handle, and that may be stored for future use. A very old and simple method of fulfilling this need is to wind the yarn into balls. This can be done without tools. The balls may be kept in large baskets, as depicted on the Greek vase-paintings, and they may be used directly in this form for warping. Bobbins of weft may be wound from the ball as and when required. In fact, balls of yarn are as old as the earliest European textile finds.<sup>48</sup>

There is another method of winding and storing yarn, that of making it into skeins. The yarn is wound around two fixed points to form the skein and, when it has been wound around a certain number of times, it is tied off. Sometimes, smaller units within the skein are also tied off. When the yarn is to be used, it must be rewound into balls or on bobbins or spools. As the use of skeins actually means that an extra operation is introduced, this method must have an advantage over that of using balls: a skein can be washed and dyed and, the circumference being a constant, the length of the thread and the degree of fineness can be calculated by weighing the skein and counting the number of rounds. This also gives a control over the fabric to be woven, and makes possible the production of materials of an even standard.

It is not known for certain when it became common in Europe to wind yarn into skeins. None have been found in the Swiss lake-dwellings, but this may be due purely to chance. H. J. Forbes<sup>49</sup> asserts that the so-called stick reels were found there; these consisted of a stick with a small twig projecting from each end. The yarn was wound over these, parallel to the stick.

Two main types of tools for winding skeins are known. One consists of the stick reel and of a short reel with fixed cross-bars over which the thread was wound; both these were held in the hand. The other type, known from medieval illustrations, is the rotary reel. This consists of an upright post mounted on a base; at the top, wooden cross-arms are fixed to a side of the post vertically so that they may be rotated. Small cross-pieces are placed at the ends of the arms, and the yarn rests on these as it is wound. This latter type will not be discussed here; it is certainly less ancient than those that are held in the hand, and there is no reason to believe that it was ever used in connection with the warp-weighted loom except in areas of cultural survival during modern times.

Charles Livingston,<sup>50</sup> whose book *Skein-winding Reels* deals with various types of this tool, their names and the etymology of these, finds that the basic meaning of the names of reels in a number of languages is stick,

e.g., English reel, German *Haspe*, Portuguese *sarilho*, French *traail*, etc.; in other words, the stick reel should be the oldest form which lent its name to the more recent types.

Nowadays, another tool is often confused with the rotary reel: this is the swift for winding skeins into balls, and we shall return to it later. Hugo Schuchardt was much concerned by this confusion, which is common in dictionaries and elsewhere. In popular Norwegian tradition, these two tools still retain their different functions and name today.

No reels for winding skeins seem to be known from ancient Greece or Rome, either in literature or from painting or the plastic arts, but A. Schwarz asserts, and Professor Forbes agrees, that an object found at Troy is a stick reel complete with carbonized yarn. Schwarz and Forbes also interpret the well-known incised drawing on the Ödenburg urn, usually taken to be a lyre, as a reel. But the sketch can be interpreted in various ways, and none of them can be accepted without reservations.<sup>51</sup>

The fact that the reel is nowhere mentioned in Classical literature may be purely accidental.<sup>52</sup> Medieval Latin has general words for such tools: *trahale*, *girgillum*, *mataxa*. These are quoted by the English lexicographer, Jean de Garlande, in a dictionary he wrote while *docteur régent de grammaire* at the University of Toulouse (1218-1246). De Poerck, quoting the section on spinning and skein-winding, translates *trahale* as 'reel' and *girgillum* as 'swift'.<sup>53</sup> According to Georges's Latin dictionary, and Blümner's survey of textile appliances, these words do not occur in Classical Latin, but they are listed in du Cange's dictionary of Medieval Latin with the meanings given above.<sup>54</sup> The terms are derived from Classical Latin words, and they may have been used in Classical Antiquity in these meanings without this usage having come down to us.<sup>55</sup>

As for the North, we can regard the skeins in the Tegle Find as definite evidence of the fact that yarn was wound into skeins in this part of the world during the third to fourth centuries A. D. One of the large rings of yarn found there is still tied around with one or more threads, just like modern skeins<sup>56</sup> (Fig. 120).

The word *hespa* occurs in Old Norse literature, and also in many of the other old Germanic languages.<sup>57</sup> Its fundamental meaning is a tool on which to make skeins, and this is also its meaning in most Germanic languages.<sup>58</sup> In Old Norse and Icelandic, however, *hespa* means the wound yarn, the skein. Other such semantic changes whereby the word is transferred from the tool to the product are well known.<sup>59</sup>

Falk equates the meaning of *riða* with that of *hespa*. The Gulating Law sets a definite price of one *eyre* for each *þráðariða*, which means that the *þráðariða*

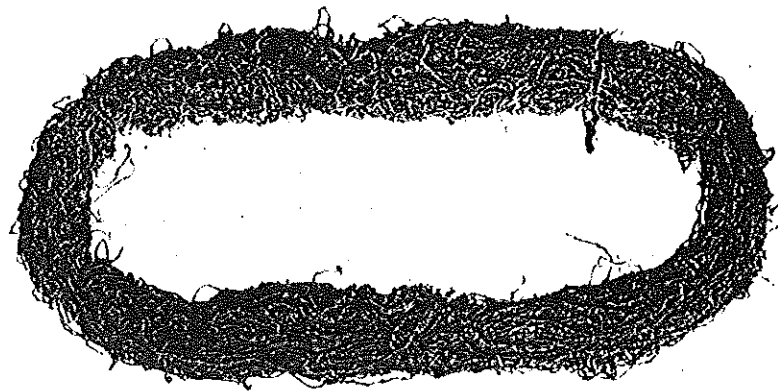


Fig. 120. Skein from the Tegle Find (third — fifth century A.D.).  
Stavanger Museum, Stavanger.

must have been a standard quantity. But for all that, it may not be certain that skein-winding reels were used in Norway during the Roman Period and during the age of the great migrations. Skeins may be wound without the use of any mechanical appliances; the Skolts wind them on the forearm between the hand and the elbow to this day (see p. 82), and the same method is also known from Switzerland and from Latvia in recent times.<sup>60</sup> Such a method of winding skeins corresponds to the way in which wool is wound from skeins into balls in homes up to the present day, by having someone hold the skein on both hands. But such a method, using human limbs instead of reels and swifts, could not be very satisfactory for a weaver dealing with large quantities of yarn, and weaving different types of cloth. It is out of the question when exact amounts of yarn at a fixed price are to be wound into each skein. It could only be practised by women who did not do much weaving, and they would have learned skein-winding from others who used a reel.

The earliest, safely dated reels of which I am aware are of much later date than the Tegle Find; they are from the Oseberg ship which dates from the middle of the ninth century. Two reels were found here (Fig. 122); both of them have a central bar carved to fit the hand, and a curved cross-piece at

each end. They are made of several pieces joined together, and they represent a high degree of craftsmanship in comparison with the natural reels used in domestic weaving in various parts of the world. In modern times, this type of reel held in the hands has practically disappeared from Norway. The only people who still use it in this country are the Lapps (Fig. 121), although in a slightly different form.<sup>61</sup>

This type of reel, sometimes called 'niddy-noddy' in English, was used in modern times in the more remote parts of Western Europe, as well as in the entire Mediterranean area.<sup>62</sup> It is also shown in illustrations from the seventeenth century on, but these seem to be a later variety of the one found at Oseberg. A number of medieval illustrations show reels of the Oseberg type<sup>63</sup> (Fig. 123).

But from an important part of the North, we have no proof that reels of the Oseberg type were used, namely, Iceland and the Færoes. This cannot mean that the type was unknown there in the past. When the manufactory at Reykjavík was established at the end of the eighteenth century, all the appliances were imported from Denmark, including several types of reel, swifts, spool-racks, and so on. All these were new to Iceland. It is most likely that the old hand tool for skein-winding was superseded by the rotary reel, as was also the case in Norway.<sup>64</sup> The Icelandic weaving could not have been carried on without a skein-winding device of some kind. The fact that it has not been possible to trace any reels from the Færoes may also be due

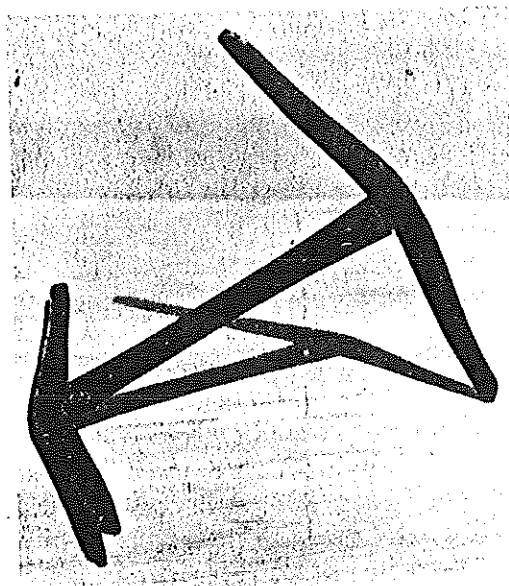


Fig. 121. Lappish skein-winding reel. NF, Oslo.

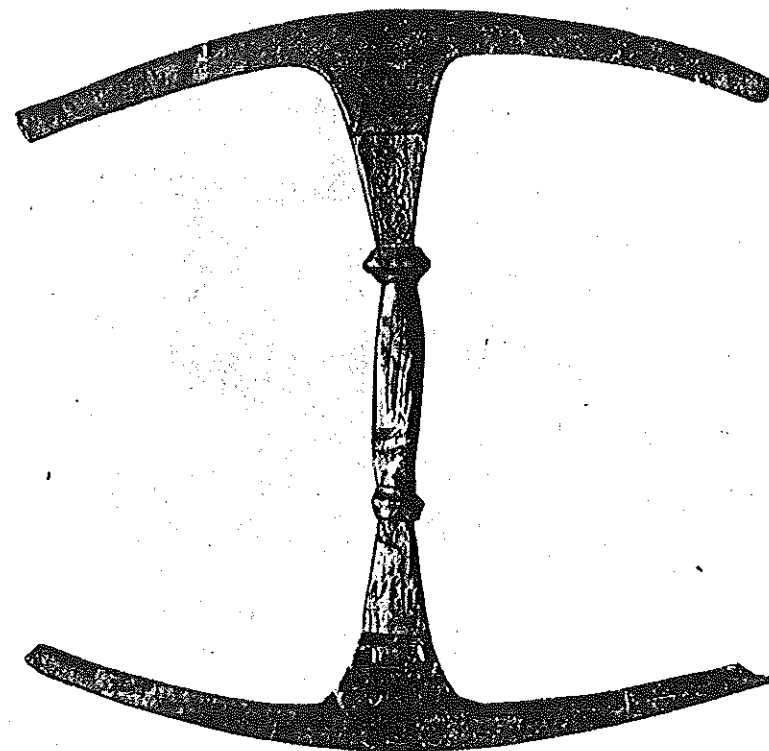


Fig. 122. Skein-winding reel from the Oseberg Find (ninth century A.D.). UO, Oslo.

entirely to chance. The word *hespa* is found in Færoese, and most probably once meant a reel of the Oseberg type.<sup>65</sup>

The Oseberg Find includes another tool which was used in conjunction with the reel. This is a swift; it stands on a foot with cross-bars that form arms placed on top of a post (Fig. 124). These rotate horizontally. Each of the four arms has several holes for pegs, so that skeins of varying sizes could be placed on it for winding into balls. It is a type of swift that is found in many parts of Europe: in more or less primitive form, for instance, in all the Slavic countries.<sup>66</sup>

As was the case with the reel, we know of no Old Norse term for the swift. The actual tool has been known in Iceland and the Færoes in more

recent times, and here, as in all the other Northern countries, it is called *garnvinda*, which may be an old term. The word *gearnwindan* occurs in *Gerefa* (ca. 1000 A.D.).<sup>67</sup>

From this, it will be seen that two tools with different functions were used in Norway in connection with the winding of yarn as early as during the ninth century: the reel, for making skeins, and the swift, for unwinding the skeins into balls.<sup>68</sup> One cannot take it for granted that tools found in the Oseberg mound were in general use. An exclusive milieu such as this might include many items which were not of native manufacture. But the fact that skeins were found at Teglø must mean that yarn was wound into skeins long before the time of the Oseberg Queen; this would make it likely that, in the main, these tools from the Oseberg Find are representative of contemporary domestic textile work in Norway. There should be no reason to doubt that the use of the reel has its background in a practice of counting and calculating threads and weight. The finds of yarn and fabrics of the Roman Period and later show clearly that weaving was not then in its first primitive stages. The even quality is ample evidence of painstaking preparatory work.

Even though, as we know from later periods, the practice of warping with balls of yarn was common, the yarn must first have been wound into skeins, if one was to keep track of the amount required and used. The method of warping with balls of yarn continued in use beside that of warping from cage-spools and spool-racks right up to our own time. The yarn was always wound into skeins first.<sup>69</sup>

There is no reason for connecting the counting of threads and the weighing of yarn with the rotary reel.<sup>70</sup> If this were a prerequisite, the amount of yarn

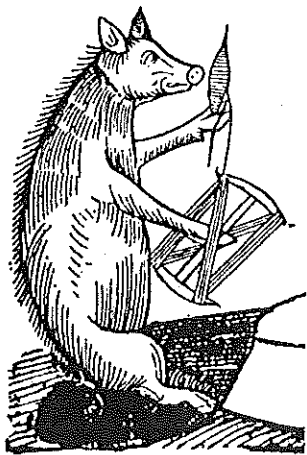


Fig. 123. Skein-winding reel. German wood-cut, about 1490. After Paul Brandt.

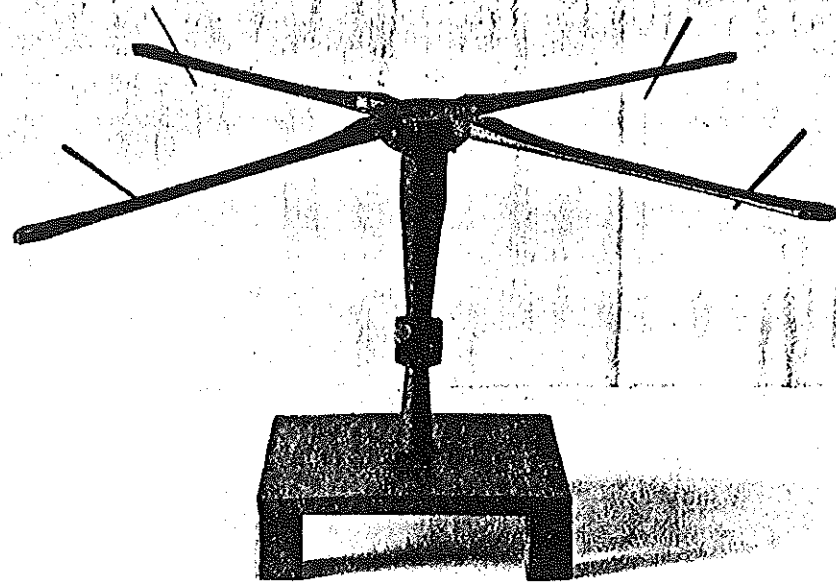


Fig. 124. Reconstruction of swift from the Oseberg Find (ninth century A.D.). UO. Oslo.

and the weight of a fabric could not have been calculated on the Continent before the Middle Ages, and much later still in the North. It is, of course, quite another matter that the different reels were not of standard dimension; skeins must have varied in size from place to place. Standardization of the reel, and thus of the skein, probably did not come before the days of professional weaving.

In summing up, one may say that finds of small tools, as well as of fabrics, from prehistoric times show that the weavers had a large repertoire of tried and tested methods of work and the tools necessary to carry out these processes. Small wooden tools, which are preserved only under exceptional circumstances, cannot be traced very far back with any certainty, but the earliest ones known show such a degree of craftsmanship in execution and design that they must be the result of an ancient tradition.

We are dealing with long periods of time, and without doubt the development in the field of textiles must have been gradual. The loom was only one link in the chain, the most important, but not the final one. The processes that may collectively be called finishing, sometimes including dyeing, were