

FLAX, in botany. See LINUM.

The following particulars with regard to the manner of raising flax has been for some years past warmly commended by the Trustees for fisheries, manufactures, and improvements in Scotland.

Of the choice of the Soil, and Preparing the Ground for FLAX. A skilful flax-raiser always prefers a free open deep loam, and all grounds that produced the preceding year a good crop of turnip, cabbage, potatoes, barley, or broad clover; or has been formerly laid down rich, and kept for some years in pasture.

A clay soil, the second or third crop after being limed, will answer well for flax; provided, if the ground be still stiff, that it be brought to a proper mould, by tilling after harvest, to expose it to the winter frosts.

All new grounds produce a strong crop of flax, and pretty free of weeds. When a great many mole-heaps appear upon new ground, it answers the better for flax after one tilling.

Flax-seed ought never to be sown on grounds that are either too wet or dry; but on such as retain a natural moisture: and such grounds as are inclined to weeds ought to be avoided, unless prepared by a careful summer-fallow.

If the lintseed be sown early, and the flax not allowed to stand for seed, a crop of turnip may be got after the flax that very year; the second year a crop of bear or barley may be taken; and the third year, grass-seeds are sometimes sown along with the lintseed. This is the method mostly practised in and about the counties of Lincoln and Somerset, where great quantities of flax and hemp are every year raised, and where these crops have long been capital articles. There, old ploughed grounds are never sown with lintseed, unless the soil be very rich and clean. A certain worm, called in Scotland the Coup-worm, abounds in new broke up grounds, which greatly hurts every crop but flax. In small inclosures surrounded with trees or high hedges, the flax, for want of free air, is subject to fall before it be ripe, and the droppings of rain and

dew from the trees prevent the flax within the reach of the trees from growing to any perfection.

Of preceding crops, potatoes and hemp are the best preparation for flax. In the fens of Lincoln, upon proper ground of old tillage, they sow hemp, dunging well the first year; the second year hemp without dung; the third year flax without dung; and that same year a crop of turnip eat on the ground by sheep; the fourth year hemp with a large coat of dung, and so on for ever.

If the ground be free and open, it should be but once ploughed, and that as shallow as possible, not deeper than 2½ inches. It should be laid flat, reduced to a fine garden-mould by much harrowing, and all stones and sods should be carried off.

Except a little pigeon's dung for cold or sour ground, no other dung should be used preparatory for flax, because it produces too many weeds, and throws up the flax thin and poor upon the stalk.

Before sowing, the bulky clods should be broken, or carried off the ground; and stones, quickenings, and every other thing that may hinder the growth of the flax, should be removed.

Of the choice of Lintseed. The brighter in colour, and heavier the seed is, so much the better: that which when bruised appears of a light or yellowish green, and fresh in the heart, oily and not dry, and smells and tastes sweet, and not stinky, may be depended upon.

Dutch seed of the preceding year's growth, for the most part, answers best; but it seldom succeeds if kept another year. It ripens sooner than any other foreign seed. Philadelphia seed produces fine lint and few bolls, because sown thick, and answers best in wet cold soils. Riga seed produces coarser lint, and the greatest quantity of seed. Scots seed, when well winned and kept, and changed from one kind of soil to another, sometimes answers pretty well; but should be sown thick, as many of its grains are bad, and fail. It springs well, and its flax is sooner ripe than any other; but its produce afterwards is generally inferior to that from foreign seed.

A kind has been lately imported, called memmel-seed, which looks well, is short and plump, but seldom grows above eight inches, and on that account ought not to be sown.

Of Sowing Lintseed. The quantity of lintseed sown, should be proportioned to the condition of the soil; for if the ground be in good heart, and the seed sown thick, the crop will be in danger of falling before it is ready for pulling. From eleven to twelve pecks Linlithgow measure of Dutch or Riga seed, is generally sufficient for one Scots acre; and about ten pecks of Philadelphia seed, which being the smallest grained, goes farthest. Riga lintseed, and the next year's produce of it, is preferred in Lincolnshire.

The time for sowing lintseed is from the middle of March to the end of April, as the ground and season answers; but the earlier the seed is sown, the less the crop interferes with the corn-harvest.

Late sown lintseed may grow long, but the flax upon the stalk will be thin and poor.

After sowing, the ground ought to be harrowed till

the seed is well covered, and then (supposing the soil as before mentioned to be free and reduced to a fine mould) the ground ought to be rolled.

When a farmer sows a large quantity of lintseed, he may find it proper to sow a part earlier and part latter, that in the future operations of weeding, pulling, watering, and grassing, the work may be the easier and more conveniently gone about.

It ought always to be sown on a dry bed.

Of Weeding FLAX. It ought to be weeded when the crop is about four inches long. If longer deferred, the weeders will so much break and crook the stalks, that they will never perhaps recover their straightness again; and when the flax grows crooked, it is more liable to be hurt in the rippling and swingling.

Quickening-grass should not be taken up; for, being strongly rooted, the pulling of it always loosens a deal of the lint.

If there is an appearance of a settled drought, it is better to defer the weeding, than by that operation to expose the tender roots of the flax to the drought.

How soon the weeds are got out, they ought to be carried off the field, instead of being laid in the furrows, where they often take root again, and at any rate obstruct the growth of the flax in the furrows.

Of Pulling FLAX. When the crop grows so short and branchy, as to appear more valuable for seed than flax, it ought not to be pulled before it be thoroughly ripe; but if it grows long and not branchy, the seed should be disregarded, and all the attention given to the flax. In the last case it ought to be pulled after the bloom has fallen, when the stalk begins to turn yellow, and before the leaves fall, and the bolls turn hard and sharp-pointed.

When the stalk is small, and carries few bolls, the flax is fine; but the stalk of coarse flax is gross, rank, branchy, and carries many bolls.

When flax has fallen and lies, such as lies ought to be immediately pulled, whether it has grown enough or not, as otherwise it will rot altogether.

When parts of the same field grow unequally, so that some parts are ready for pulling before other parts; only what is ready should be pulled, and the rest should be suffered to stand till ready.

The flax-raiser ought to be at pains to pull, and keep by itself, each different kind of lint which he finds in his field; what is both long and fine, by itself; what is both long and coarse, by itself; what is both short and fine, by itself; what is both short and coarse, by itself; and in like manner every other kind by itself that is of the same size and quality. If the different kinds be not thus kept separate, the flax must be much damaged in the watering, and the other succeeding operations.

What is commonly called under growth, may be neglected as useless.

Few persons that have seen flax pulled, are ignorant of the method of laying it in handfuls across other: which gives the flax sufficient air, and keeps the handfuls separate and ready for the rippler.

Of Stacking up FLAX during the winter, and Winning the

the Seed. If the flax be more valuable than the seed, it ought by no means to be stacked up; for its own natural juice assists it greatly in the watering: where, as, if kept long unwatered, it loses that juice, and the harle adheres so much to the boon, that it requires longer time to water, and even the quality of the flax becomes thereby harsher and coarser. Besides, the flax stacked up over-year, is in great danger from vermin and other accidents; the water in spring is not so soft and warm as in harvest; and near a year is thereby lost of the use of the lint: but if the flax be so short and branchy as to appear most valuable for seed, it ought, after pulling, to be stoked and dried upon the field, as is done with corn, then stacked up for winter, rippled in spring, and after sheeling the seed should be well cleaned from bad seeds, &c.

Of Rippling FLAX. After pulling, if the flax is to be regarded more than the seed, it should be allowed to lie some hours upon the ground to dry a little, and so gain some firmness, to prevent the skin or harle, which is the flax, from rubbing off in the rippling; an operation which ought by no means to be neglected, as the bolls, if put into the water along with the flax, breed vermin there, and otherwise spoil the water. The bolls also prove very inconvenient in the grassing and breaking.

In Lincolnshire and Ireland, they think that rippling hurts the flax; and therefore, in place of rippling, they strike the bolls against a stone.

The handfuls for rippling should not be great, as that endangers the lint in the rippling comb.

After rippling, the flax-raiser will perceive, that he is able to assort each size and quality of the flax by itself more exactly than he could before.

Of Watering FLAX. A running stream wastes the lint, makes it white, and frequently carries it away. Lochs, by the great quantity and motion of the water, also waste and whiten the flax, though not so much as running streams. Both rivers and lochs water the flax quicker than canals.

But all flax ought to be watered in canals, which should be digged in clay ground if possible, as that soil retains the water best: but if a firm retentive soil cannot be got, the bottom or sides of the canal, or both the bottom and sides, may be lined with clay; or, instead of lining the sides with clay, which might fall down, a ditch may be dug without the canal, and filled with clay, which will prevent both extraneous water from entering, and the water within from running off.

A canal of forty feet long, six broad, and four deep, will generally water the growth of an acre of flax.

It ought to be filled with fresh soft water from a river or brook, if possible two or three weeks before the flax is put in, and exposed all that time to the heat of the sun. The greater way the river or brook has run, the softer, and therefore the better will the water be. Springs, or short runs from hills, are too cold, unless the water is allowed to stand long in the canal. Water from coal or iron, is very bad for flax. A little of the powder of galls thrown into a glass of water, will immediately discover if it comes from minerals of that kind, by turning it into a dark colour, more or less tinged in proportion to the quantity of vitriol it contains.

The canal ought not to be under any shade; which, besides keeping the sun from softening the water, might make part of the canal cooler than other parts, and so water the flax unequally.

The flax-raiser will observe, when the water is brought to a proper heat, that small plants will be rising quickly in it, numbers of small insects and reptiles will be generating there, and bubbles of air rising on the surface. If no such signs appear, the water must not be warm enough, or is otherwise unfit for flax.

Moss-holes, when neither too deep nor too shallow, frequently answer well for watering flax, when the water is proper, as before described.

The proper season for watering flax is, from the end of July to the end of August.

The advantage of watering flax as soon as possible, after pulling, has been already mentioned.

The flax being sorted after rippling, as before-mentioned, should next be put in beets, never larger than a man can grasp with both his hands, and tied very slack, with a band of a few stalks. Dried rushes answer exceedingly well for binding flax, as they do not rot in the water, and may be dried and kept for use again.

The beets should be put into the canals slope-ways, or half standing upon end, the root-end uppermost. Upon the crop-ends, when uppermost, there frequently breeds a deal of vermin, destructive of the flax, which is effectually prevented by putting the crop-end down-moist.

The whole flax in the canal ought to be carefully covered from the sun with divots; the grassy side of which should be next the flax, to keep it clean. If it is not thus covered, the sun will discolour the flax, though quite covered with water. If the divots are not weighty enough to keep the flax entirely under water, a few stones may be laid above them. But the flax should not be pressed to the bottom.

When the flax is sufficiently watered, it feels soft to the grip, and the *harle* parts easily with the *boon* or *shaw*, which last is then become brittle, and looks whitish. When these signs are found, the flax should be taken out of the water, beet after beet; each gently rinsed in the water, to cleanse it of the nastiness which has gathered about it in the canal; and as the lint is then very tender, and the beet slackly tied, it must be carefully and gently handled.

Great care ought to be taken that no part is overdone; and as the coarsest waters soonest, if different kinds be mixed together, a part will be rotted, when the rest is not sufficiently watered.

When lint taken out of the canal is not found sufficiently watered, it may be laid in a heap, for twelve, eighteen, or twenty-four hours, which will have an effect like more watering; but this operation is nice, and may prove dangerous in unskilful hands.

After the flax is taken out of the canal, fresh lint should not be put a second time into it, until the former water be run off, and the canal cleaned, and supplied with fresh water.

Of grassing FLAX. Short heath is the best field for grassing flax, as, when wet, it fastens to the heath, and is thereby prevented from being blown away by the wind. The heath also keeps it a little above the earth,

earth, and so exposes it the more equally to the weather. When such heath is not to be got, links, or clean old lea-ground is the next best. Long grafs-grounds should be avoided, as the grafs growing thro' the lint frequently spots, tenders, or rots it; and grounds exposed to violent winds should also be avoided.

The flax, when taken out of the water, must be spread very thin upon the ground; and being then very tender, it must be gently handled. The thinner it is spread the better, as it is then the more equally exposed to the weather. But it ought never to be spread during a heavy shower, as that would wash and waste the harle too much, which is then excessively tender, but soon after becomes firm enough to bear the rains, which, with the open air and sunshine, cleans, softens, and purifies the harle to the degree wanted, and makes it blister from the boon. In short, after the flax has got a little firmness by being a few hours spread in dry weather, the more rain and sunshine it gets the better.

If there be little danger of high winds carrying off the flax, it will be much the better of being turned about once a-week. If it is not to be turned, it ought to be very thin spread. The spreading of flax and hemp requires a deal of ground, and enriches it greatly.

The skilful flax-raiser spreads his first row of flax at the end of the field opposite to the point from whence the most violent wind commonly comes, placing the root-ends foremost; he makes the root-ends of every other row overlap the crop-ends of the former row three or four inches, and binds down the last row with a rope; by which means the wind does not

easily get below the lint to blow it away: and as the crop-ends are seldom so fully watered as the root-ends, the aforesaid overlapping has an effect like giving the crop-ends more watering. Experience only can fully teach a person the signs of flax being sufficiently grassed: then it is of a clearer colour than formerly; the harle is blistered up, and easily parts with the boon, which is then become very brittle. The whole should be sufficiently grassed before any of it is lifted; for if a part be lifted sooner than the rest, that which remains is in great danger from the winds.

A dry day ought to be taken for taking up the flax; and if there is no appearance of high wind, it should be loosed from the heath or grafs, and left loose for some hours, to make it thoroughly dry.

As a great quantity of flax can scarcely be all equally watered and grassed, and as the different qualities will best appear at lifting the flax off the grafs; therefore at that time each different kind should be gathered together, and kept by itself; that is, all of the same colour, length, and quality.

The smaller the beets lint is made up in, the better for drying, and the more convenient for slacking, housing, &c. and in making up these beets, as in every other operation upon flax, it is of great consequence that the lint be laid together as it grew, the root-ends together, and the crop-ends together.

Of keeping FLAX after it is grassed. Nothing needs be said here, but that if the flax is to be stacked, it should be set in an airy place, upon a dry foundation, such as pob-middings, or the like, and well covered from the weather; and if housed, the floor must be dry, and the house well aired, and water-tight.

Follows an Estimate of the Expence, Produce, and Profit of a Scots acre of FLAX,—supposing the season favourable, that no accidental losses happen, and that the farmer is neither unskilful nor negligent.

	<i>A medium crop.</i>	<i>A great crop.</i>	<i>An extraordinary crop.</i>
Ground-rent, labouring the ground, and leading the flax	L. 2 10 0	L. 3 10 0	L. 5 0 0
Lintfeed from L. 2 to L. 4 per hogthead, the medium			
3 s. 4 d. per peck.	1 16 8	1 10 0	1 6 8
	for 11 pecks.	for 9 pecks.	for 8 pecks.
Clodding and sowing	0 2 0	0 2 0	0 2 0
Weeding	0 12 0	0 8 0	nothing.
Pulling, rippling, putting in, and covering in the water	0 14 0	0 15 0	1 0 0
Taking out of the water, grassing, and stacking	0 8 0	0 12 0	0 18 0
Breaking, and scutching, at 2 s. per stone	3 0 0	4 0 0	6 0 0
	for 30 stones.	for 40 stones.	for 60 stones.
Total expence	L. 9 2 8	L. 10 17 0	L. 14 6 8
Produce at 10s. per stone	L. 15 0 0	L. 20 0 0	L. 30 0 0
	for 30 stones.	for 40 stones.	for 60 stones.
Lintfeed sold for oil at 1 s. per peck	0 16 0	0 18 0	1 0 0
The chaff of the bolls is well worth the expence of drying the feed; as it is good food, boiled and mixed with beer, for horses.			*
Total produce	L. 15 16 0	L. 20 18 0	L. 31 0 0
Balance for profit	L. 6 14 4	L. 10 1 0	L. 16 13 4

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There is nothing stated here as expence of the canal in which the flax is watered ; because that varies much according to the conveniencies people have for making it : and a canal once made requires for after-years only to be repaired and cleaned.

It is a certain fact, that the greater the crop is, the better is the quality of the same kind of flax.

The advantage of having both a crop of flax and a crop of turnip the same year—or of sowing grafs-seeds along with the lintseed—and of reducing the ground to a fine garden mould, free of weeds, ought to be attended to.

For Cambrick and fine Lawn. The ground must be a rich light soil, rather sandy, but cannot be too rich.

It ought to be ploughed in September, or the beginning of October, first putting a little hot rotten dung upon it.

Second ploughing in January after a hard frost ; and when you intend to sow it, plough it a third time, or rather hoe it, reducing the clods very fine ; but make no furrows : the land must be made level like a garden ; but never work the land when wet.

The seed should be sown the beginning of April, and about double the quantity that is generally sown by our farmers ; if the land be very rich, it will require rather more than double.

As soon as sown (if the weather be dry) it will be necessary to roll the ground.

The lint must be weeded very clean when about three inches high ; directly after which you must set forked sticks, of about one and half inch thick (which ought to be prepared before) every four or five feet, according to the length of the poles you are to lay upon them ; they should be well fixed in the ground, the forked part to receive the poles about six or seven inches above the lint ; each row of poles should be two, three, or four feet asunder, according to the length of the brushwood you are to lay upon them.

The poles ought to be from ten to fifteen feet long, and strong enough to support the brush across the poles ; take the longest brushwood you can get, the more branchy the better, very thick, filling up the vacancies with smaller brush, and any of the branches that rise higher than eighteen or twenty inches ought to be lopt off to make the brush lie as level as possible : any sort of brush will do except oak, as that tinges the lint.

Your lint must be pulled as soon as the seed is fully formed, which is a few days after it is out of the bloom before the lint turn yellow.

It must be pulled above the brushwood, and every handful laid upon it as soon as possible : if it is fine weather, leave it four or five hours in that manner ; then carry it to a screen near a barn, to put it under cover in case of rain ; there it must be spread four or five days, and always put in the barn at night, or when it appears to rain : the bundles must be opened in the barn, or made hollow, to prevent it from heating.

These operations must be performed until the lint is perfectly dry, and out of danger of heating ; taking care all the time to keep the roots as even as possible,

and if possible, keep it from rain or wet : if you cannot prevent it from being wet, it will be better to leave it on the grafs till dry ; because when once wet, the putting it under cover before dry will make it turn black ; a thing which must be prevented at all events.

If any of the lint upon the border, or through the piece of ground, be coarser than another, it must be separated from the rest.

The utmost care must be taken to preserve the lint entire, or unbroke ; for this reason they beat off the seed with a round melle or bittle.

The most proper ground is summer fallow, or after potatoes, or lea ; if possible near a wood, to prevent the expence of carrying brush.

As soon as the seed is off, if you intend to water it that season, it must be tied in bundles about as large as you can grasp with your two hands.

The water proper for it, is a very small rivulet or soft spring free of any metallic ore, and taking care that no flood or foul water enters your pit ; which must be at least five feet deep, about nine or ten broad at the top, and seven or eight at the bottom, the length will depend on the quantity of flax you have to water. A very small stripe of water, when clear, should always be running in and off from your pit when the lint is in it.

The pit ought to be made three or four months before it be used

You must drive poles about four inches thick, with a hook inclining downwards, in this form 7, all along the sides of the pit, about five feet asunder. The hooks must be level, or rather under the surface of the water. A long pole, the whole length of the pit, must be fixed into these hooks on each side ; and cross poles put under that, to keep the lint under water ; but, the cross poles are not used till the lint is put in. You must order it so, that all the lint should be three or four inches under water. You next bring your lint to the sides of the pit ; then put your sheaves head to head, causing each overlap the other about one third, and take as many of these as make a bundle of two or two and a-half feet broad, laying the one above the other, till it is about four or four and a-half feet high ; then you tie them together in the middle, and at each root-end : after this, you wrap your bundle in straw, and lay it in the water, putting the thin or broad side undermost, taking care that none of your lint touch the earth ; after it is fully pressed under water, put in your cross poles to keep it under. The bundles ought to lie in the pit a foot separate from each other. This renders it easy to take out ; for, if the bundles entangle, they will be too heavy to raise.

The time of watering depends so much upon the weather, and softness or hardness of the water, that it is impossible to fix any certain time. This must be left to the skill of the farmer. If the flax be intended for spinning yarn soft and fit for cambrick, it ought to be spread upon short grafs for four or five days before you put it into the water ; but if for lawns, lace, or thread, it is best to dry it outright. In either case, avoid as much as possible to let it get rain ; as much rain blanches and

walkes

washes out the oil, which is necessary to preserve the strength.

The great property of this flax is to be fine and long. Thick sowing raises all plants fine and slender, and when the ground is very rich, it forces them to a great length. Pulling green prevents that coarse hardness which flax has when let stand till it be full ripe, and gives it the fine silky property. The brushwood, when the flax springs up, catches it by the middle, prevents it from lying down and rotting; infallible consequences of sowing thick upon rich ground. It likewise keeps it straight, moist, and soft at the roots; and by keeping it warm, and shaded from the sun, greatly promotes its length. The keeping it from rain, heating, taking proper care of your water, preserves the colour, and prevents these bars in cloth so much complained off by bleachers.

FLAX-DRESSING. *The different methods of that operation.*

For many ages it was the practice to separate the boon or core from the flax, which is the bark of the plant, by the following simple *hand-methods*. First, for breaking the boon; the stalks in small parcels were beat with a mallet; or, more dexterously, the *break* (Plate LXXXII. fig. 1. and 2.) was used thus: The flax being held in the left-hand a-crofs the three *under-teeth* or *swords* of the break (A, fig. 1. and a, fig. 2.), the *upper-teeth* (B, fig. 1. and b, fig. 2.) were with the right-hand quickly and often forced down upon the flax, which was artfully shifted and turned with the left-hand. Next, for clearing the flax of the broken boon; the workman with his left-hand held the flax over the *stock* (fig. 3. and 4.) while with his right-hand he struck or threshed the flax with the *scutcher* (fig. 5.).

These methods of breaking and scutching the flax being slow and very laborious, a *water-mill* was invented in Scotland about forty years ago, which, with some late improvements, makes great dispatch, and in skilful and careful hands gives satisfaction. It has been generally constructed to break the boon by three dented rollers, placed one above the other. The middle one of which being forced quickly round takes the other two along with it, and one end of handfuls of the flax being by the workman directed in between the upper and middle rollers, the flax is immediately drawn in by the rollers; a curved board or plate of tin behind the rollers directs the flax to return again between the middle and undermost rollers;—and thus the operation is repeated until the boon be sufficiently broke. Great weights of timber or stone at the ends of levers, press the upper and under-rollers towards the middle one.

The scutching is next carried on by the mill in the following manner: Four arms, something like the hand-scutchers before described, project from a perpendicular axle; a box around the axle incloses these projecting scutchers; and this box is divided among the workmen, each having sufficient room to stand and handle his flax, which, through slits in the upper part and sides of the box, they hold in to the stroke of the

scutchers; which, moving round horizontally, strike the flax a-crofs or at right angles, and so thresh out or clear it of the boon.

The breaking of the flax by *rollers* is scarcely subject to any objection, but that it is dangerous to workmen not sufficiently on their guard, who sometimes allow the rollers to take hold of their fingers, and thereby their whole arm is instantly drawn in: thus many have lost their arms. To avoid this danger, a break upon the general principles of the hand-break before described, has been lately adapted to water machinery, and used in place of rollers. The horizontal stroke of the scutchers was long thought too severe, and wasteful of the flax; but very careful experiments have discovered that the waste complained of must be charged to the unskilfulness or negligence of the workmen, as in good hands the mill carries away nothing but what, if not so scutched off, must be taken off in the heckling with more loss both of time and flax. But to obviate this objection of the violence of the *horizontal scutchers*, an imitation of hand scutching has lately been applied to water. The scutchers then project from an horizontal axle, and move like the arms of a check-reel, striking the flax neither across nor perpendicularly down, but sloping in upon the parcel exactly as the flax is struck by the hand-scutcher. This sloping stroke is got by raising the scutching-stock some inches higher than the centre of the axle; and by raising or lowering the stock, over which the flax is held, or screwing it nearer to or farther from the scutchers, the workman can temper or humour the stroke almost as he pleases.

A lint-mill with horizontal scutchers upon a perpendicular axle, requires a house of two stories, the rollers or break being placed in the ground story, and the scutchers in the loft above; but a mill with vertical scutchers on an horizontal axle, requires but one ground story for all the machinery.

Another method of breaking and scutching flax, more expeditious than the old hand-methods, and more gentle than water-mills, has also been lately invented in Scotland. It is much like the break and scutcher giving the sloping stroke last described, moved by the foot. The treddle is remarkably long, and the scutchers are fixed upon the rim of a fly-wheel. The foot-break is also assisted in its motion by a fly. These foot machines are very useful where there are no water-mills, but they are far inferior to the mills in point of expedition.—[See plans of the water-mills, and foot-machine, on the unnumbered plates betwixt the LXXXII. and LXXXIII.]

The next operation that flax undergoes after scutching, is heckling. The *heckle* (fig. 6. Plate LXXXII.) is firmly fixed to a bench before the workman, who strikes the flax upon the teeth of the heckle, and draws it thro' the teeth. To persons unacquainted with that kind of work this may seem a very simple operation; but, in fact, it requires as much practice to acquire the slight of heckling well, and without wasting the flax, as any other operation in the whole manufacture of linen. They use coarser and wider teetthed heckles, or finer, accord-

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Fig. 1. Flax hand break

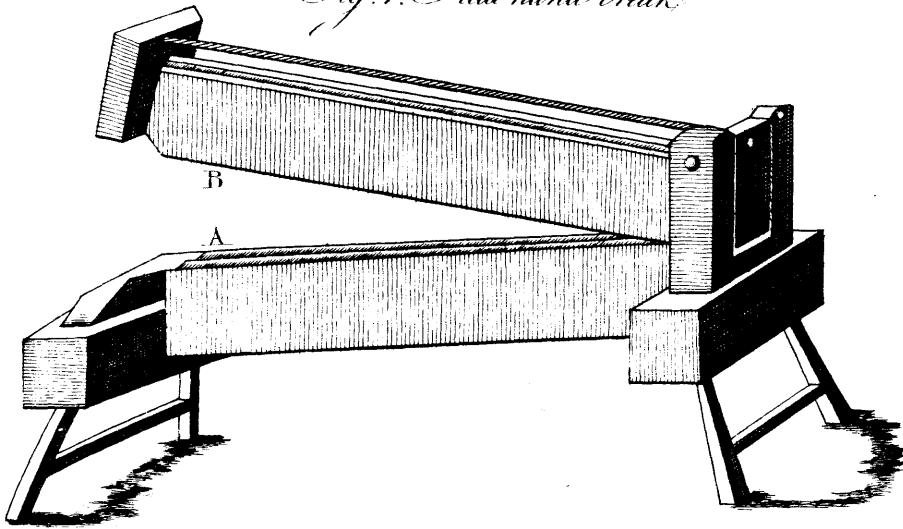


Fig. 2. Section of the Break

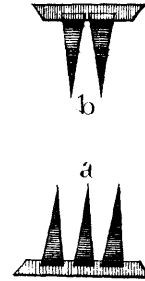


Fig. 5. Hand Skutcher



Skutching Stock

Fig. 3. Side view

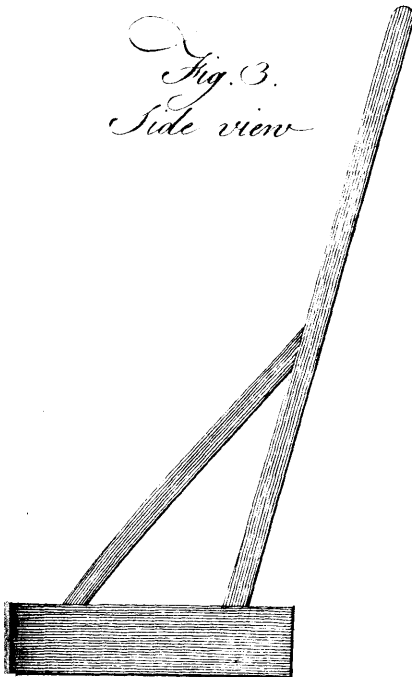


Fig. 4. Front view

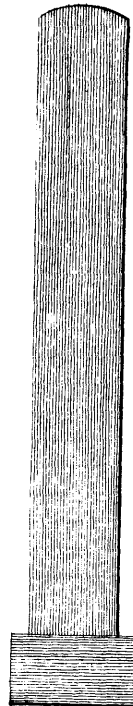


Fig. 6. Fleckle

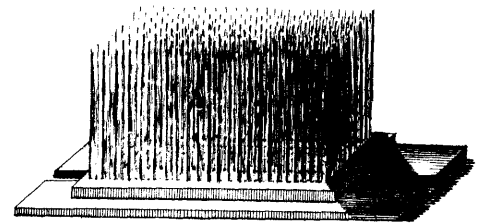
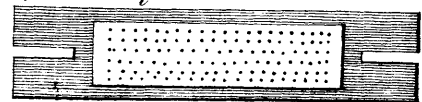


Fig. 7. plan of the Fleckle



A. Bell Sc.

ing to the quality of the flax; generally putting the flax thro' two heckles, a coarser one first, and next thro' a fine heckle.

Flax for cambrick and fine lawn, thread and lace, is dressed in a manner somewhat different. It is not skutch'd so thoroughly as common flax; which from the skutch proceeds to the heckle, and from that to the spinner: whereas this fine flax, after a rough skutching, is scraped and cleansed with a blunt knife upon the workman's-knee covered with his leather apron; from the knife it proceeds to the spinner, who, with a brush made for the purpose, straightens and dresses each parcel just before she begins to spin it.