

Communications.

Harness Made and Mended Without Sewing.

Eds. Carolina Farmer.—The necessity of saving time and expense in the management of our farms is too obvious to require remark. Our small farmers in the corn and wheat section of North Carolina, must make at less cost, or the lands must pass into other hands. To this end let every farmer have a workshop and a good set of carpenter's tools, and let him employ his rainy days in mending up his farming tools, harness, &c.; and for the harness work, the copper belt rivet solves the question completely. I make and mend all my farm gear with these copper rivets. The process is so simple, the time consumed so trifling, the cost so small and the work so secure that every farmer ought to get the necessary tools and never pay another dollar to a harness maker. To make harness in this way no special training is necessary, any body that can carry his hand to his mouth can make all his plow gear with rivets.

That the process may be understood by those who never saw a copper belt rivet, I will explain it in full, giving the tools necessary and the price and use of each.

The outfit is as follows, and except the rivets lasts always:

- 1. 5 boxes rivets @ 50 cts. \$3.00
- 2. 2 punches50
- 3. 1 set50
- 4. 1 harness knife75
- 5. 1 brad hammer50
- 6. 1 pair Tinner's nippers 1.00

\$6.25

1. The rivets should be $\frac{1}{2}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ of an inch, to suit various thicknesses of leather. The $\frac{1}{2}$ and $\frac{3}{8}$ boxes should be "bride rivets," No. 12, which count out 400 to 500 to the pound box. The other boxes should be Nos. 8 or 9, regular "belt rivets." A longer rivet than $\frac{1}{2}$ is sometimes needed, for mending an old buggy trace or an old pair of breeching for instance; but a wrought nail cut to the desired length, or a common cut nail burnt and cut to the right length will answer a good purpose for occasional use.

2. There must be two punches, one for the No. 12 and one for the No. 9 rivets.—Any ordinary blacksmith, can make them or they can be bought and retailed at 25 cts. each. It is very convenient to have a spring hand punch, with tubes of two sizes; but for wide work, as a backband, the straight hammer punch is necessary.

3. The set is the same instrument which tinner's use in riveting stove pipe. My blacksmith makes the two punches and the set for 50 cts, though I put them at \$1.00 in pricing the outfit.

4. A harness knife is indispensable. I used a straight edge awhile; but it is very troublesome. My harness knife is home-made. The handle is of hickory and is shaped like a pistol, across the "muzzle" end is a mortise for the graduated slide, this slide has the knife in one end and is fastened at any desired point by a little wedge. The knife must be very thin and of good steel, and it can be made very easily at the grind stone out of a piece of old scythe blade, which can be held with nippers or a hand-vice and ground to the proper shape in a few minutes. My knife cuts anything from a shoe-string to a 5 inch back-band and is home-made. A good article can be bought at 75 cents as indicated.

5. The brad hammer needs no description. It should be light, but heavy enough to do ordinary nail driving.

6. The tinner's nippers or wire cutters are very necessary. If a rivet is too short, no harm can be done; but if it is a little too long, and one cannot always tell what size to use, an inexperienced hand is apt to brad it down anyhow. The result is that the brad is bent, an ugly rough lump of a head is made, and generally the severe hammering forces the head end of the rivet through the leather on the under side and the joint is worthless. To avoid this, cut the rivets to the right length with the nippers before the hammer touches them. These same tinner's nippers are very useful on a farm, they will draw any kind of a nail, cut nails, cut and twist wire ties for fence posts, twist wire bands on a split plow handles, &c. Having described the tools, I will now

describe the process. Two rivets are enough for any joint in bridles, buggy harness, lines, &c. The leather is cut to the desired width with the guaged knife; the pieces to compose the joint are lapped about an inch; two holes are punched with hand or hammer punch as is most convenient; roots of the right length are put in from the under side with the head end always towards the horse, as the braded end might rub the skin off; a piece of solid iron is provided to brad on. I use six inches of an old railroad bar; the bars are now put on; the set is used to tighten the bars down and compact the leather, which a few light taps with the hammer on the set accomplishes; the rivets are cut to the right length, if too long, with the nippers; they are now braded down with a few light taps of the brad hammer and the new head is smoothed down with the driving end of the hammer, and the joint is complete, and this joint will never give way till the leather rots, it never rips, and this perfect joint is made before you could make a sewed end; it is made before you could make the holes with the awl, if the end was ready, and it is made not less than four times while you would be sewing it, after the end and the holes are ready, and it never rips, and the leather is not cut half in two by the awl, and it is made in any kind of weather; whereas sewing can only be done in a warm room.

One caution is necessary. A beginner is apt to brad too hard and to drive the set too hard, by which means the head end of the rivet is driven through the leather on the under side and the joint just unbuttons and is worthless. Of course copper belt rivets cannot make a good joint out of mean or flanky leather; but it will make a joint that is stronger than another part of the leather, which will never give way till the leather rots, and nothing can last longer than that. Now every farmer knows that a harness maker's knife eats up a side of leather too quick, and that his charges are very high, and his work often rips to pieces, all of which difficulties are obviated by the copper belt rivet, the use of which enables any farmer to make a most successful short cut in harness making and to dodge the harness maker entirely. Let any live man try it, and I will warrant that he will never be without rivets again. Ro. B. Mechanicsville, N. C.

Goats—Common and Angora.

The Mark Lane Express gives us this account of these valuable animals: In Spain there are some four and a half million head of goats kept. In Russia and Austria upwards of two millions each; in France one and a half million.—In the empire of Morocco there are said to be upwards of twelve millions of goats, their skins furnishing the celebrated Morocco leather, to the extent of two million skins annually. The direct imports into England of goat skins, dressed or undressed, exceeds a million a year, chiefly from India and Africa. In mountainous countries goats render considerable service to mankind, the flesh of the old ones being salted as winter provisions, and the milk being used in many places for the making of cheese. The flesh of the kid is highly palatable, being equal in flavor to the most delicate lamb, and its skin is useful for gloves. In Chili and Peru goats are fattened for their tallow, and their skins, besides their application to their purposes of holding wine, are tanned into the excellent Cordova leather, which is sold extensively throughout Peru, Guayaquil and Quito.

About twenty thousand male Angora goats have lately been imported by the breeders of the Cape of Good Hope. The demand for the hair is constantly increasing. From 1847 to 1852 English spinners could obtain but about 2,000 pounds per year; now they receive about 3,000,000 pounds and find it inadequate to their wants.

The exportation of this valuable and beautiful white silky wool, unless in the shape of yarn, was long prohibited; but by the process of interchange it is now shipped unspun. The production, preparation and sale of mohair long engrossed the principal attention of the inhabitants of Angora; and it used to form an important article of Venetian commerce, when formed into camlets and expensive stuffs. For a long period the wool has been sold by the Greek merchants without the buyer having the chance of seeing his purchase before hand, the buyer's only protection being the assurance of the seller that the wool shall be of good merchantable quality. This fact goes far to show how extremely desirable it is to increase the production, as it must undoubtedly be limited in its employment by the impossibility of obtaining a sufficient supply, no less than by the difficulties and impediments in the way of getting the present restricted one. The spinning of this article has now

become an extensive and steady trade. Twenty years ago it was found that the yarn spun by English machinery was very superior to Turkish hand spun yarn, so that about that period a great deal of the spinning in Turkey ceased. We now import the raw material—the wool—direct, and export it to the Continent in a partially manufactured state of yarn.

The sacks most commonly used about Adrianople in the transport of grain are made by the natives from goat's hair cloth; they can be had from 10d. to 1s. 3d. each, large enough to carry four bushels. Some Bulgarian villages—Otlonkoi in particular—are noted for the quantity and quality of the sacks they produce. The parishes about Monton, near Lyons, without pasture or meadows, support nearly 12,000 goats, kept in stables throughout the year, and yielding a produce of more than a million of francs. The Cashmere, Persian, Angora and Circassian goats are one and the same animal, changed in some respect by altitude, though but little by latitude. They abound in all that inaccessible territory, and are the eating, milking, cheese and butter making and wool furnishing animals of the whole country. They are finely developed for the table, much disposed to fatten, very white and beautiful, with long fine wool and curly hair, yielding about four to four and a half pounds to the fleece.

The Ocinde goat is a gigantic animal, with pendulant ears twenty-two inches long. It is, also, used for the table and dairy, and is very similar to the Syrian goat. The Maltese goat is only kept for the dairy, giving a gallon of milk a day. In all the malarious sections of Asia and the East they regard cow's milk as being an exciting cause of bilious fevers, as well as to liver complaints, and hence use only goat's milk.

The Small Farms of Belgium.

Accounts of agricultural operations as performed in foreign countries, aside from being highly interesting to the intelligent farmer, often contain important practical lessons, not altogether useless to the generality of farmers everywhere, and perhaps applicable in many instances to cases near at home. We were impressed with this while reading an account of the Agriculture of Belgium, in a late number of the Journal of the Royal Agricultural Society of England, and believing it to be of interest to our readers, present an abstract of the author's remarks on the sandy districts of Northern Belgium, and the management of the small farms located in that section of this country.

Nearly the whole of Northern Belgium has the appearance of being a dead flat, but at its extreme Eastern boundary it attains an elevation of 250 feet. The soil is "almost pure blowing sand." The mean summer temperature is about 63 deg. Fahr., and the winter temperature 37 deg. Fahr. It rains upon an average about 190 days in every year. This sandy soil consists of three strata or layers, the first being a nearly pure white sand from six to seven inches deep; the second a blackish sand seven to eight inches deep, and the third an ochreous sand, the thickness of which is unknown. According to Dr. Voelcker's analysis of this soil, or sand, the top layer contained, in round numbers nearly 98 per cent of pure white sand, or but little more than two parts in 100 of all other soil constituents. "Manure applied to it produces little effect; a fact which finds a ready explanation in the absence of any appreciable quantity of alumina, oxide of iron and other soil constituents possessing the power of absorbing and retaining the fertilizing substances contained in yard manure." The second layer has a dark brown color, due to organic substances of the nature of ulmic and humic acid, and is altogether better adapted to sustain vegetable life than the extremely sterile top soil. The third layer contrasts more favorably with the top soil, and is decidedly superior to the intermediate layer.

The autumn before the land is to be brought into cultivation, the beath is cut, and the land dug to the depth of about two feet, the top layer being completely buried, and fifteen inches of the two lower beds mixed and brought to the surface. The cost of this operation ranges from \$25 to \$30 per acre, up to a much larger amount, but it bears no proportion to the thereby increased value of the land; for the reentry immediately after reclamation may be placed at thirty shillings per acre, while the land was previously worthless for farming purposes. Throughout this district the farms are exceptionally small and yet it is a striking feature of the farming of Northern Belgium, that this once barren district produces the largest crops, and sustains in apparent comfort and independence the densest agricultural population in Europe. "Forty years ago the concurrent testimony of numerous writers pointed out the farming of Flanders as the most productive and most advanced in Europe; but while in the interval English agriculture has had made enormous strides, the farming of Flanders has remained stationary."

The size of the farms in this portion of Belgium varies somewhat; from twenty to twenty-five acres being the most usual size, where the farmer does not work except for himself. Some farms are worked entirely by cows, and on others a horse is kept—the most profitable size being considered that which will keep one horse constantly at work. As a general thing, however, no small farmer will keep a horse if he can possibly get on without, as he prefers keeping an ox, or using his cows. The horse, they say, only eats. He

cannot be sold as beef, and gives no milk. These are strong arguments why they are not generally kept. The fields on these farms are little narrow strips, their surface frequently trimmed to a low arch like the beds in a well kept flower garden. They are divided by deep ditches, on each side of which is planted a row of alders. Very often each field has a narrow strip of grass bordering the ditches, and these green lanes are frequently the only bits of pasture the small farmer possesses. The collection, preservation and application of farm-yard manure are all fruitful subjects of conversation and debate. Throughout the light land districts it is carefully stored under cover. The drainings from the manure house are carefully collected in tanks as well as all other descriptions of liquids of any manurial value whatever. A farmer is regarded as good or bad, precisely in proportion to the quantity of manure he can apply to his crops. Twenty tons per acre is habitually given for potatoes and often the quantity is increased to twenty-five tons. But the crop of wheat which succeeds the potatoes gets little or no manure. Both the rye and oats which follow the wheat in succession, get a half dressing (ten tons per acre), and the clover is well watered with liquid manure. The usual amount of stock kept on the ten acre farms is two cows, one heifer, and one yearling calf. No sheep are kept.—The cattle kept are usually pure Dutch, although a cross of the Durham is very much prized, especially by the milk farmers. In feeding the cows they are not allowed access to the vessel in which their meal has been given, after it has pertaken of. This ensures the regular feeding of the animals, from it the farmer can ascertain the state of the cow's health, and the tubs and feeding troughs are kept thoroughly clean. Pigs are kept by the small farmers to fatten for their own use, pork and bacon being their only meat.

To answer the question as to whether a farm of ten acres is sufficient to enable a man to keep his wife and family in comfort, and to occupy completely and profitably his own time, without having recourse to other means of earning money, the authors of the article (Prof. Voelcker and Mr. Jenkins, Secretary of the Royal Agricultural Society), give a very minute account of a ten acre farm which fully answers this question in the affirmative. As this statement occupies five or six pages, we can only glance at one or two interesting points. This ten acre farm is divided about as follows: grass land two acres, garden one acre, the remaining seven acres being farmed on a seven course system. The stock kept consists of three cows, and two pigs fattened for home use. The proportion here is one cow to three and one half acres, but no food for them or pigs is bought; they are fed entirely on the produce of the farm. In summer the cows are fed on clover and grass, mostly given cut in the stable; in addition they have a drink of nearly a quart of linseed, four or five pounds of rye-meal, and twenty quarts of water, boiled with a quantity of mangold-tops. This makes a drink of which each cow gets something less than a gallon three times a day. In winter they get a daily allowance each of four bushels of turnips and one pound of meal. The grass land is manured every March with either liquid manure or guano, it is mown in July, and the aftermath grazed or soiled. The land for the other crops is heavily manured. Nearly a ton and a half of guano is bought yearly for this little farm, aside from what manure is made upon it. In 1868, this farm produced 35 bushels of wheat per acre, 45 of rye, 1 ton of colza (rape), and eight tons of potatoes. The estimated receipts of the same year were about \$515; the expenditures \$160, leaving a gross profit of \$355. How many farms in our own country of even ten times greater size can show equal profit?

It seems to us that this account of the small farms of Belgium, where the land rent is very high, should teach farmers here two or three useful lessons. 1st. To make the most of the fertile soil which is their own and be thankful we have not a blowing sand bed from which to draw our sustenance. 2d. Farm yard manure is just what crops need, and with it in abundance, any soil possessing the power of absorbing and retaining its fertilizing substances, can be made to produce good crops. 3d. We should give more attention to saving—this is the word, for we waste and destroy more than we save—the manure of our farm stock, and the fertilizing matter about our buildings and dwellings. It produces food; and whatever yields the means of human subsistence it is criminal to destroy. 4th. In the matter of feeding stock—and that applies with special force to us just now—we often do not make a given amount of fodder go as far as it is capable of. Scrupulous economy needs to be practiced about this matter, especially during the coming season. Let not a straw be wasted. Give no more at a time than will be eaten up clean. Even the oats and refuse fodder might be made palatable and nutritious by steaming or cutting and mixing with meal, shorts, cut vegetables, &c. Let us think about these things, and, so far as we can, put them into practice.—Mathe Farmer

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