some of them draw one might imagine that they were almost an object of worship; at least they are more highly reverenced than mules and dogs, which look far more poorly nourished and often more heavily loaded according to their size.

Land rents for around \$15.00 per acre. There is little grazed land. Intensive methods are practiced.

Belgium Leads in Oats and Barley.

Belgian farmers reckon on a return of \$100.00 per acre from their arable land. Considerable rye is grown in Belgium, which seems rather strange on such fertile soil. Belgium leads in production per acre of barley and oats, and is a close second to Denmark, which leads in the production per acre of wheat. Its community gardens are noted. In Antwerp many of the dock laborers have gardens to employ their slack time, from which they are summoned to resume their ordinary occupations. Some years ago it occurred to me that if occupations. Some years ago it occurred to me that if our city people could arrange to release their labor in harvest time for a short period it might tend to shorten the line for free meals in the winter. The idea received the ridicule that a good proposition generally does. Now we are achieving similar results by allow-ing soldiers leave of absence for the harvest.

In Europe generally there is a remarkable develop-ment of gardening in small allotments near the cities. This is something that we might take up in this country. There will likely be quite an inviting field of endeavor along this line in the future, specially when munitions workers cease to draw their 50 or 75 cents per hour.

Agriculture in Germany.

Germany is a great rye growing country. Much of their land is light and sandy, and rye is a much more important crop with them than wheat. Potatoes and

sugar beetsare largely grown. Rye bread and potatoes figure very largely in the German diet in times of peace. At present deficiencies in supplies of these are made up by various substitutes not nearly so palatable.

Germany, on somewhat barren soil, has by scientific methods, extensive use of artificial fertilizers and full use of man and woman power on the land, produced remarkable results. To-day they are handicapped in Their supply many ways. Their supply of artificial fertilizer is insufficient to maintain the fertility of the soil. Their labor is scarce, even when considering the number of their prisoners of war. Their chief handicap is their lack of horse-power on the land and the absence of modern machinery. Some tractors and steam plows are in use.

The steam plows are the style that have been used for sometime in the country with a steam engine on each side of the field and a cable drawing the plow. They are not economical of man power. The most of the farm work is not done by this method. Probably in the next field to where a steam plow is working you will see a team of cows or a cow and horse hitched together.

Their machinery for planting and harvesting potatoes modern. Yet in the smaller farms much of their hay is mown with a scythe, and considerable of their harvest ing done by hand. Little land is wasted, few fences interfere with cultivation, as cattle have a herdsman and even geese have an attendant to drive them to pasture. The railroads are not fenced and cultivation comes very close to the roadbed. In some districts fruit trees line either side of the

THE

FARMER'S ADVOCATE

unfenced roads. Unfortunately I never happened along when those trees were laden with fruit.

It is something of a dairy country, and in the northern part good specimens of the Holstein-Friesian breed are common. In the Province of Hanover good dairy cows are numerous. If they had such a thing as a good beef beast it got away before I reached the country, and I was unable to get any trace of it alive or dead. Many hogs are kept; they even locate sometimes near the heart of cities. Generally, however, city people only keep chickens and rabbits. This gives their food control organization extra labor. Special arrangements have to be made for city people who keep a few hens. Even the farmers' hens are counted by inspectors, but we have it on good authority that occasionally one is reported dead. It is not all smooth sailing for the food controller there. In Stuttgart in 1916 the milk supply was running short. Some writer in response, no doubt, to a brain wave pointed out that the price of milk was fixed at a few phennigs per litre below that prevailing in Denmark, which is something of a dairy country; yet some consumers were surprised that the supply was falling off. Frantic efforts have been made through the press to restrict the farmers' rations, but a few writers maintain the fruitlessness of such endeavor.

An outstanding feature of rural Germany is the extent and development of its forests. Much land is, no doubt, more suitable for forestry than other purposes. Still there seems to be some land in forest plantation that one would imagine would be more valuable as arable land. In the Kingdom of Saxony, which is agriculturally a good part of the empire, 25 per cent. of the land is under forest. Extensive plantations in every stage of development reveal the existence of a



How Crops are Stacked and Protected on an English Farm

systematic policy of forestry, and the appearance of their matured forests speaks volumes for that policy.

Deductions Drawn From Observations

To-day in the business of food production we have here many advantages over the Germans. We have more land which allows more extensive methods and a far greater production per man. We have a richer soil not dependant on artificial fertilizers. We have modern machinery and horse-power in abundance, while the enemy work oxen and their triple purpose cows cows are developed to milk, produce beef and do the work of an ox, and certainly do not look as though they would excel in achieving any of these aims.

In some places laborers, now receiving higher wages than In some places laborers, now receiving higher wages than usual, require a half holiday to spend their money. There is no half day off per week for the soldier, nor any Sunday observed in the trenches. When I was farming some years ago I was accused by some of my neighbors of doing two men's work. It is much more necessary to carry on in that way now and far more profitable; and with modern machinery and ample horse-power it is possible for us to produce individually not twice as much but several times as much as the enemy who are important. but several times as much as the enemy who are ignorant

FOUNDED 1866

Renovating the Old Mower. EDITOR "THE FARMER'S ADVOCATE":

of modern agriculture and labor-saving machinery,

Everywhere farmers are trying to make the old mower last a while longer. It is up to us to make an effort along this line, both from the patriotic as well as financial standpoint. If we can make any machine do fairly good work this season we should go ahead and do so rather than burden manufacturers who should perhaps be making goods for more urgent needs of our country.

As the cutterbar of the mowing machine is the most important, the first thing to do is to line it up. Natural wear and tear has a tendency to pull the bar back further wear and tear has a tendency to pull the bar back further than it should be and when you have run into a few stumps or stones going at full speed, it is further dis-arranged and usually far out of alignment. On most machines provisions are made for lining up the bar and bringing it into proper position, without much difficulty, although on some of the older types this is not consilier done. No matter how bothersome this is he is its easily done. No matter how bothersome this job is, it should be attended to if the machine is expected to cut as it should. The outer point of the cutterbar should travel a little in advance of the inner point when actually at work which means that it should set further ahead than might seem necessary with the machine standing idle. There is wear in the joints that will allow the bar to set back further than you may think possible when at work in a heavy swath.

After lining up the bar the next thing to look after is the guards and the plates that are in them. In nine cases out of ten, unless new guard plates have been recently put in, they will need to be renewed. This can only be done by taking the guards from the bar and doing the work at the anvil. After bolting the guards back securely be sure and line them up for you will probably notice by looking along the line that the points of some set at one angle and some at another. Guards will usually stand a reasonable amount of cold hammering, so you can line them up with a heavy hammer in connection with something that answers the purpose of a hand anvil. See that they are in line along the guard plates as well as the guard point, as any machine cannot cut well with one guard plate low and another high. Of course everyone recognizes the fact that a sharp sickle is necessary, but many seem to forget that sharp guard plates, securely rivetted in lined-up guards, firmly bolted to a lined-up bar are an equally important half of the cutting system.

All work so far mentioned has been done on the cutterbar but here is found 90 per cent. of the reason for poor cutting. Possibly the gears need some looking after, a boxing or two may need renewing, particularly on the pitman wrist pin, for a loose boxing on the pitman means a jerk at every stroke which is hard on both pitman and sickle as well as giving lost motion resulting in poor cutting.

A little coal oil used on all the oiling parts to clean out hardened grease will be found very helpful and when machine oil is added the bearings will run smooth and easy, thus lightening up the draft of the mower. A mower will last twice as long and will be twice as will last easy on the horses and give far better results in cutting if just a little "rainy day" time is taken to go over it thoroughly and see that it is in the best possible con-dition for cutting. The old machine is worth the extra attention this year especially. W. M. CHISHOLM.

JUNE 20

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Our chief difficulty is lack of labor. Even considering this we have many advantages over the enemy. There is a tendency in some quarters to take life easier

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Automobiles, Farm Machinery and Farm Motors.

Tires.

If any of our readers ever get an opportunity to inspect the process by which manufacturers make tires, spect the process by which manufacturers make tires, we would strongly suggest that they take the utmost advantage of it. The lessons to be learned are many and of great value. You will realize, of course, that with the pneumatic tire, we have the longest step that was ever taken toward making the motor car a practical proposition. The air of the pneumatic tire takes up all those road shocks, which would otherwise be conveyed very harshly to the mecanism of the auto-mobile, and to the passengers therein. The pneumatic effect also kills vibration, which is very injurious to a power plant. It is interesting to note that air is a great absorbent of shocks, more so than springs or solid rubber, or any other medium that has ever been devised.

Tires are made on moulds of different sizes. Generally speaking, two circular wire cables are first attached ally speaking, two circular wire cables are inst attached to a layer of heavy cotton canvas, filled, stuffed or im-pregnated with rubber gum. This constitutes what is known as the carcass of the tire. The cushion is then applied, which is nothing more or less than a layer of compounded rubber. It is held in place by a length of canvas known as the breaker-strip. The last section

is termed the tread. This is the part that comes in contact with the road, and is compelled to stand most of the wear. When the whole structure is vulcanized together a substantial wear resisting casing has been Inside the casing a tube with a check produced. valve is fitted, and on the introduction of air to the tube the beads grip the rim and hold it firmly in place.

There are two things which you should always bear in mind if you wish economical tire maintenance. Never use a tire that is under inflated, or you will find that the walls, which are naturally the finest part, will soon become broken. When the air in your tire is allowed to go down, the carcass naturally comes in contact with more obstructions, and it is not long until the sides are so worn that a blow-out occurs. You cannot tell the pressure of air in a tire through any system than that of using a gauge. Kicking a tire, pounding it with the hand, or striking it with a stick, are not satisfactory. Use a gauge and make sure that you have almost twenty pounds of pressure per inch of tire

The second important thing to remember is that the shifting of the position of the tires on the wheels will increase mileage. Front tires wear longer than rears, and those on the left side usually give less trouble than the ones on the right. Changing the tires is, therefore, a good plan. If you wish to preserve a uniformity of wear, do not forget that heat, light and oil have injurious effects upon rubber. If you carry a spare tire see to it that there is a cover for it. Do not allow your tubes to be exposed. See that they have some kind of a box or bag to themselves, and it is always well to have the valve stems covered up in order that they may not damage the rubber. Never allow grease to accumulate on your tires, as it takes the resistance out of the rubber. Perhaps we should not say anything about speed, because most motorists know that if you travel at a terrific rate it almost eats up tires. Slow, comfortable speed reduces wear and tear to a minimum.

It is not an uncommon sight to see a car running along with a flat tire. This is certainly bad policy. If the air has left the tube, the rim grinds both it and the casing. To travel any distance with a flat tire is sure ruination for both the tube and its cover. Immediately upon discovering a puncture, pull you car up quickly, and jack up the affected wheel with the least possible delay. If you see two front tires on a car that have worn down to the fabric, you can rest assured that they have either gone a tremendous distance, or been out of alignment. Misalignment soon eats up a pair of This is quite common where front wheels are tires. concerned. It causes the wheels to run out of line.