

can feel that he is creating wealth where there was none before. Every bushel of grain he grows, every animal he rears, every product he produces is that much increase added to the nation's resources. The city clerk who exchanges so many hours a day for a stated salary or wage, or the business man who buys the product of another's ingenuity and industry, selling at a substantial increase, cannot realize the satisfaction of the farmer who, in partnership with Nature, is creating wealth from the raw material.

Again, farming is a challenge to our individuality. The farmer is, in a way, master of his destiny, as far as his own farm is concerned. Of course, every one is dependent on his fellowmen to some extent, but a farmer may keep what kind of stock he wishes, grow particular crops, and is not bound by hours or rules in the manner and time of doing his work. This gives him a sense of independence, and he is thus able to do what he himself wishes, when he likes, and does not have to answer to any superior for it. This independence is not an unmixed blessing perhaps as farmers have not co-operated in their own interest as they should, but that is another subject. This individuality should be manifest in the appearance of our farms. We should have some outstanding characteristic to distinguish our farm from our neighbors. For instance, an appropriate name, the

breeding of a particular kind of horses, cattle, or poultry, buildings painted in some color scheme, at least something different from the common run.

Another advantage is a variety of work. Many of our jobs would be very monotonous as a yearly proposition, but very rarely does any particular operation last more than a few days. If some of them did last into the weeks, I fear we would be heartily tired of them and long for a change. What variety of work we have in the year's operations! The factory hand or tradesman who daily goes over the same routine, does not have the satisfaction of finishing up an operation for the year, and commencing something entirely new. It certainly adds zest to our daily labor.

Again, every year gives the farmer a greater chance. While it is necessary to plan for several years ahead, and our stock and crops are dependent on work done in the previous years, yet every spring brings renewed hope of better success. One season may be too wet, another too dry, yet here in Ontario we can always depend on some crop, and the mistakes of one year need not be repeated the next. Besides there is the interest of experimenting, and the keen farmer will not be content to drift along in an old rut, but will be ever branching out and trying new methods.

Nor must we forget the beauties of Nature that the

poets rave about. The sunrise and sunset, the rolling fields of grain, the flowers and birds, are all seen and appreciated by the farmer, but you may be sure he says little about them. He is too much afraid of being thought sentimental, but were he shut up in a factory or office he would certainly miss them greatly. Nature is a great study, the growing grain, the trees, even the weeds that cause so much trouble, all have their vital interest. The oriole that sings to us at breakfast and the bob'o'link, as we plow, are old friends that we miss when they migrate. Most farmers are fond of their animals which are so dependent on them for food, and do their part to earn it. They too are interesting, especially when young and when they are ready to be sold, though sometimes it is very hard to part with old faithfuls.

Lastly, we have the fact that in farming, as perhaps in no other vocation, the home and business are closely knit together. The home is not merely a place to eat and sleep, it is a vital part in the concern. Every member of the home should have a share in the enterprise and its success. Herein lies the greatness of agriculture that home is the centre of its operation, and this is the greatest reason why I like my part of Canada.

Huron Co., Ont.

M. J. SLEMMON.

Automobiles, Farm Machinery and Farm Motors.

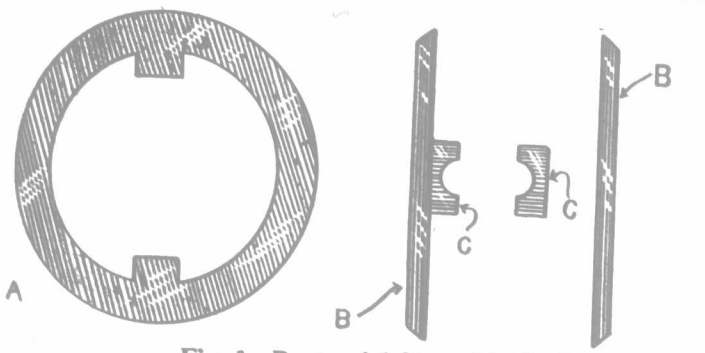


Fig. 1—Parts of Adjustable Bushing Pulley.

Homemade Pulleys.

EDITOR "THE FARMER'S ADVOCATE":

Most farm equipment includes that useful piece of machinery, the gas engine. It can be put to many uses. However, on most farms it is put to few uses in comparison to its possibilities. Often by using a little labor, pulleys, belting, etc., the small engine used exclusively for pumping water can be made to run the grindstone, separator, pulper, and so on. This convenience is lost if the engine is not attached to the machines it has power to operate.

To set up a homemade shaft outfit calls for little spare time and less actual cash. It is practically as good as the brand-new, expensive article for light jobs; therefore it is desirable.

Below several styles of home-made pulleys are described. They are thoroughly practical, as the writer has proved to his own satisfaction. There are many more designs, but the following will supply you with ideas.

A shows how to cut rim for pulley with adjustable shaft bushings.

Board should be as wide as pulley diameter.

1. With compass draw a circle as large as pulley desired.
2. Saw out with compass saw.
3. Inside describe another smaller circle, leaving a good space from outside circumference for thickness of rim.

4. Mark out two lugs directly opposite each other, as shown in Fig. A.

5. Cut out inside portion.

Cut out as above until a sufficient number have been made to give pulley proper width of face. Cut lugs so that when pulley is assembled the grain will cross; that is, cut lugs with grain one time and across the next. This gives extra strength.

B shows arms for same. Select a board a little narrower than width of pulley face and of suitable thickness.

1. Cut long enough to catch on lugs, but loose enough to move in and out freely.
2. Bore a hole in each end, nearer the ends than the centre. Two arms are required.

C shows bushing for same.

1. Put arms in pulley, one on each side of lugs.

2. Measure exact distance between when on each side of lugs.

3. Make a block as long as width of arms, wide as distance between arms, and of suitable thickness as shown.

4. Bore a hole lengthwise through block, one-eighth of an inch smaller than shaft diameter.

5. Saw in half, leaving one half of hole in each part, as shown.

To Assemble Pulley.

1. Nail parts of rim, previously sawn out, together, putting lugs in the same straight line with each other.

2. Slip rim over shaft.

3. Nail one-half of bushing on each arm equidistant from the ends, being sure to put these on squarely.

4. Put arms in pulley.

5. Put a bolt of proper size through holes in each end of arms, and tighten enough to be solid.

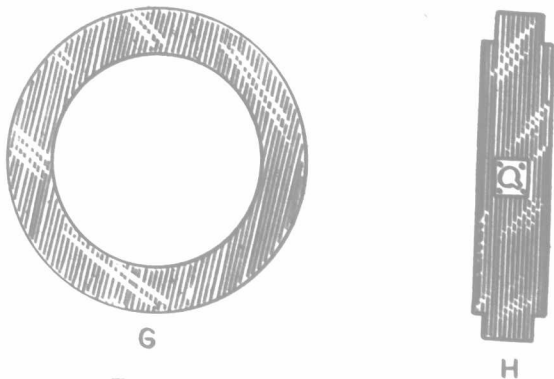


Fig. 3—Parts of Arm Pulley.

6. With a circular plane or key-hole saw put a crown on pulley.

If pulley has been carefully made it will be strong, solid and have a firm grip on shaft.

If pulley grips lugs, but not shaft

1. Reduce width of lugs slightly.

2. Or, plane a little off inside faces of shaft bushing. Perhaps they meet without gripping shaft.

If pulley grips shaft, but not lugs, reduce thickness of bushing.

Solid Pulley.

D

D shows how to cut rim for solid pulley.

Refer to section A, parts 1 and 2.

E shows square bushing for same.

Shaft should be square for this bushing.

1. Make square hole in sections of rim a little larger than shaft, taking care to have holes exactly in centre of rim section.

F shows key-way bushing for same.

Shaft should have key-way for this bushing.

1. Get a flat piece of iron, or steel, and drill hole in it a little larger than shaft. Steel plate should be one-half an inch thick and of proper size, as shown.

2. Make key-way in plate to correspond with the one on shaft.

To Assemble Pulley With Square Bushing.

1. Nail sections of rim together.

2. Slip pulley on shaft.

3. Secure with small steel wedges driven between pulley and shaft.

With Key-way Bushing.

1. Nail sections of rim together.

2. Bore hole through pulley, in the centre, a little larger than shaft.

3. Fit steel plate to pulley, securing it with screws or small bolts.

4. Slip pulley on shaft.

5. Drive key home.

Finish by crowning pulley in both cases.

Arm Pulley.

G shows how to cut rim of arm pulley.

Refer to section A, parts 1, 2, 3, and 5.

H shows arm and bushing of arm pulley.

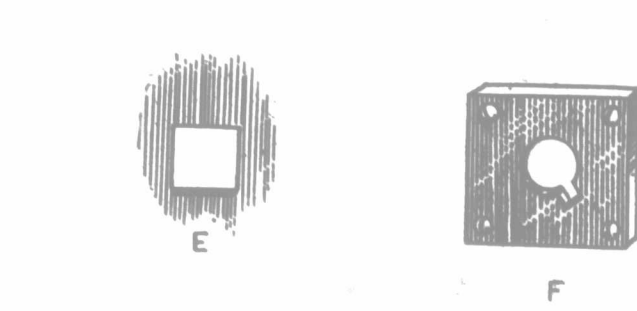


Fig. 2—Parts of Solid Pulley.

1. Select a piece of strong wood of a length as great as pulley diameter, and of suitable width and thickness.

2. Cut tenons of about one-half inch shoulder on arm, as far down as width between outer and inner rim of pulley.

Bushing for same.

Refer to sections E and F.

To Assemble Pulley.

1. Lay arm on rim with tenons in proper position for actual use.

2. Cut a piece out of rim to let tenons fit into the space tightly.

3. Reduce thickness of tenon to same as that of rim.

4. Build up by laying the rest of sections one on each side and nailing solidly. Repeat until completed.

5. Put crown on pulley.

6. Attach to shaft same as solid pulley.

Larger Pulleys.

Slight changes are necessary for larger pulleys.

1. It may be impossible to get boards wide enough for one-piece rims in pulleys of large diameter. If so, lay two boards side by side and fasten so by means of cleats. Saw out same as for one board. Be careful in building up rim to put pieces in their respective places.

2. Large pulleys (those having adjustable bushings) require more bolts in arms. Place two bolts near bushing and one near lugs on each side of shaft.

3. Large pulleys (those having adjustable bushings) require the bushings to be made slightly different, as follows: Bushing must be an inch longer than width of arms, also an inch thicker than is necessary. Lay arm on bushing in same position as it will assume in actual use, leaving one-half inch of bushing on each side of arm. Using this as a guide, cut a groove wide as arm and half an inch deep in bushing. Repeat on the other half of bushing. This prevents side motion of bushing, and is much stronger all through.

4. It is seen that larger pulleys must be stronger throughout than small ones; thicker rims, heavier arms and larger bushings. However, the maker can easily regulate all this.

Perth Co., Ont.

CLARENCE BINGHAM.

Battery Queries.

I have received some good information regarding the management of cars or autos. There is a large battery in hind seat of my car, I don't know what kind of battery it is. I read on one side of it: "everready multiple battery—best for ignition, superior to storage batteries, recommended for automobiles, motor boats and air ships, non-evaporating and water proof". I would like to know if this is a wet battery or if it is likely to need charging this spring.

R. T.

Ans.—Your battery is not of the wet type. It is of the style that operates continuously until worn out.

AUTO.