

**BELL SYSTEM PRACTICES**  
**Outside Plant Construction**  
**and Maintenance**

**SECTION G96.550.1**  
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**AT&T Co Standard**

## **RECIPROCATING POWER SAW**

### **AT-C169X**

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#### **1. GENERAL**

1.01 This section describes the AT-C169X Reciprocating Saw and Storage Case and provides information about the operation, maintenance and precautions essential to the safe use of the saw. The maintenance operations covered herein are those that can be handled in the field. If other repairs are necessary, the saw should be returned in accordance with local instructions.

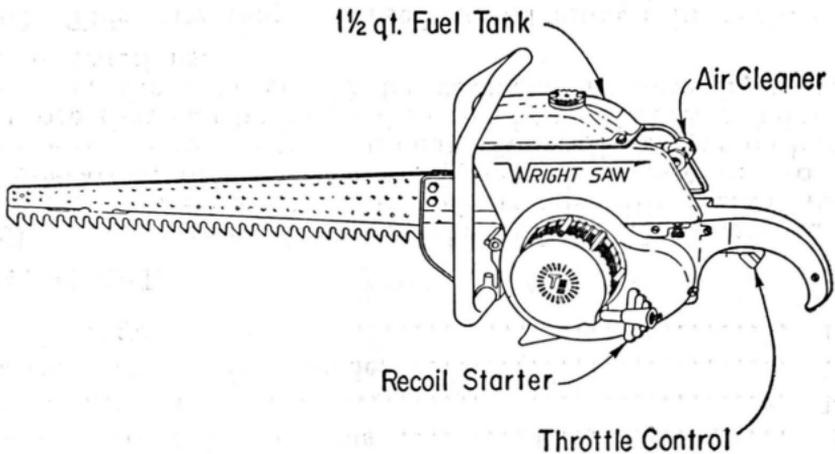
1.02 This saw may be used to advantage in performing many of the work operations usually done with either an axe or a hand saw.

#### **2. DESCRIPTION**

2.01 The Reciprocating Saw has an over-all length of 40 inches and a weight of about 25 pounds with blade and guide attached. It is powered by a two-cycle, single cylinder, 4-1/2 horsepower gasoline engine equipped with a recoil starter. A special carburetor is supplied that permits operation of the saw in all positions.

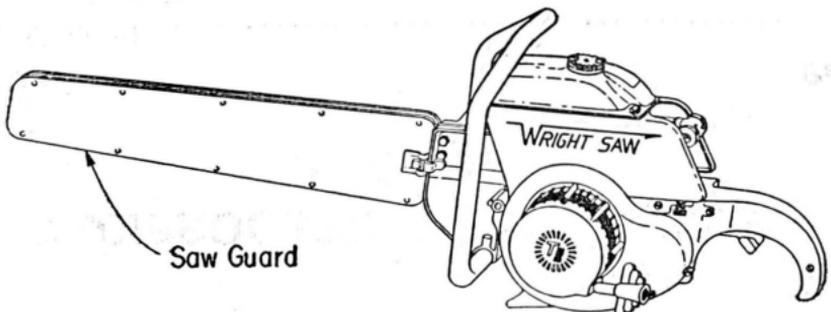
2.02 The 20-inch cutting blade is driven directly by the piston and requires no adjustment or lubrication. The width of cut is  $\frac{3}{16}$  inch and the blade moves  $1\frac{7}{16}$  inches.

2.03 Fig. 1 shows the general appearance of the AT-C169X Reciprocating Saw and indicates the parts referred to in this practice. The saw illustrated in Fig. 1 weighs 25 pounds. Detailed parts information may be obtained from the manufacturer's catalog supplied with the unit.



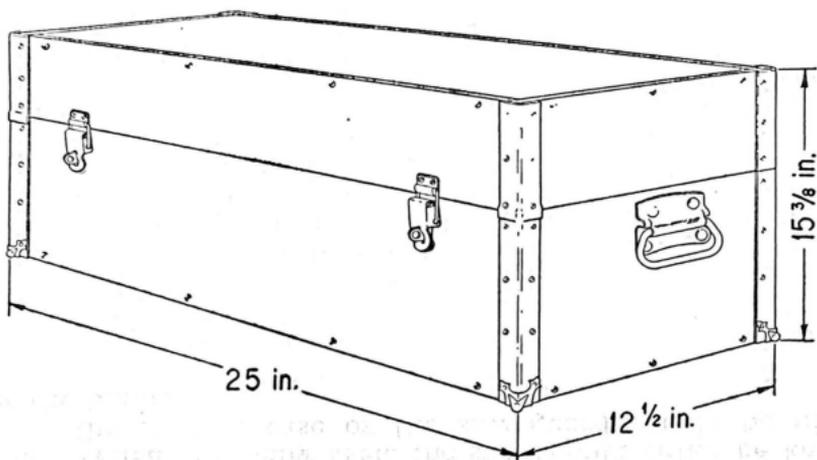
**Fig. 1**

Fig. 2 shows the saw equipped with a saw blade guard.



**Fig. 2**

2.04 The following illustration shows the reinforced plywood case which may be obtained to protect the saw during storage.



**Storage Case  
AT-C169X**

**Fig. 3**

2.05 The dimensions of the storage case are the minimum possible to permit storage of the saw and other essential parts. It is necessary to disassemble the blade and guide for storage in this box.

2.06 The AT-C169X Tool Kit contains two saw blades, one screwdriver, saw blade file and carrying case.

### **3. SAFETY PRECAUTIONS**

3.01 Do not operate this unit in an enclosure unless there is adequate ventilation.

3.02 Before using the saw, be certain that adjacent areas are cleared of foreign objects which might hinder the operator or interfere with the operation of the tool.

3.03 Examine the material to be cut and remove any metallic object that may interfere with the proper operation of the saw.

3.04 Safety glasses or goggles shall be worn at all times when using the saw.

3.05 Before starting the engine, make certain that the blade is properly installed and the blade screw tightened securely. Never run the engine unless the blade is attached to the saw.

3.06 Always disconnect the spark-plug wire when the saw is not in use.

3.07 **The saw should never be used from a ladder.**

3.08 **The saw should never be used where balance and footing is not secure.**

3.09 Keep workmen and other persons away from the operator and the saw while the work operation is in progress.

3.10 Do not fill the gasoline tank while the engine is running. Avoid spilling fuel on a hot engine because an explosion or fire may result. **Before starting the engine** wipe away all gasoline and oil that collects on the unit during servicing.

3.11 Care should be exercised to avoid burns from contact with heated parts, particularly the exhaust muffler, saw blade and guide after a cut has been made.

3.12 Stop engine as soon as cutting is finished. **Never set the saw down with the engine running. Never carry the saw from one work area to another with the engine running.**

3.13 When not being used, the saw should either be kept in the storage case or the saw guard should be placed over the blade.

#### 4. ASSEMBLING GUIDE AND BLADE

4.01 Refer to Fig. 4. Insert blade guide (F) in the housing (A) so that the three holes in the blade guide are in alignment with the three holes in the housing. Assemble as shown in Fig. 5.

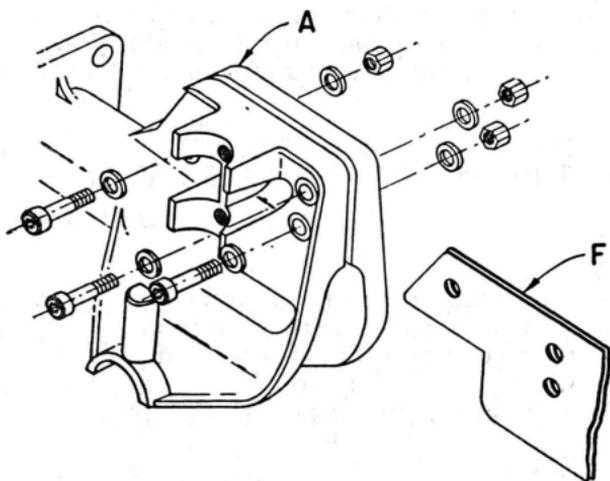
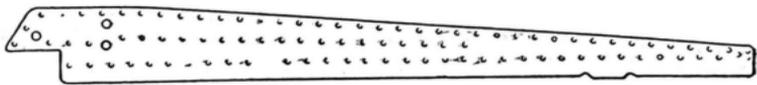
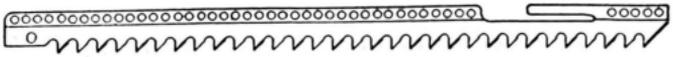


Fig. 4

4.02 Refer to Fig. 5. Insert the tongue at the top edge of the blade (K) in channel along the bottom edge of the guide (F). Move the blade rearward in the guide channel until the notch for the tang (M) is under the guide key (H). Move the blade upward in the guide so that the entire tongue of the blade is in the channel of the guide. **TIGHTEN BLADE SCREW SECURELY.**



Guide



Blade

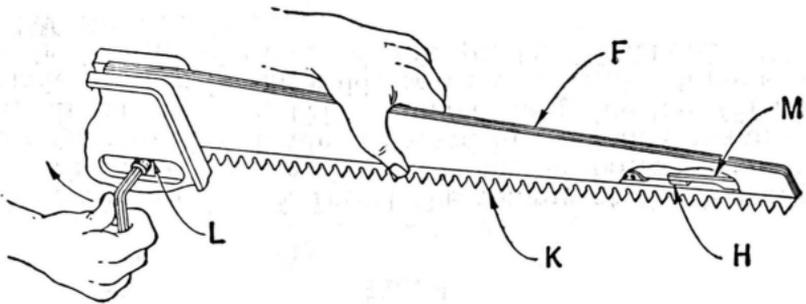


Fig. 5

4.03 Slide the blade to the rear until the blade tang (M) is supported by the guide key (H). Continue to move the blade to the rear until the driving hole in the blade is in line with the hole in the coupling piston. Insert the driving screw (L) and tighten **securely** while holding the blade upward against the guide.

## 5. FUEL AND LUBRICATION

5.01 Fuel for the AT-C169X Saw consists of a mixture of regular grade gasoline (preferably nonleaded) and motor oil.

5.02 Oil is necessary for lubricating purposes and it should always be present in the fuel in the correct amounts. Use outboard motor oil, two-cycle engine oil, or nondetergent motor oil—SAE No. 10 in the winter and SAE No. 30 in summer.

5.03 The fuel mixture consists of 1/2 pint of oil per gallon of gasoline. (During the first five hours of engine operation use 3/4 pint of oil per gallon of gasoline.)

5.04 Mix the oil and gas in a clean metal container, and stir or shake thoroughly. **Do not add oil or gasoline** separately to the fuel tank of the saw.

5.05 The oil in the gasoline lubricates all of the moving parts of the engine.

5.06 The saw blade does not require lubrication. However, when cutting certain types of wood which leave gummy deposits on guide and blade, these parts may be cleaned by soaking in kerosene or petroleum spirits.

## 6. THROTTLE CONTROL

6.01 The Throttle Trigger, located in the rear handle, has three definite operating positions in addition to the speed control range between position one and two. See Fig. 6.

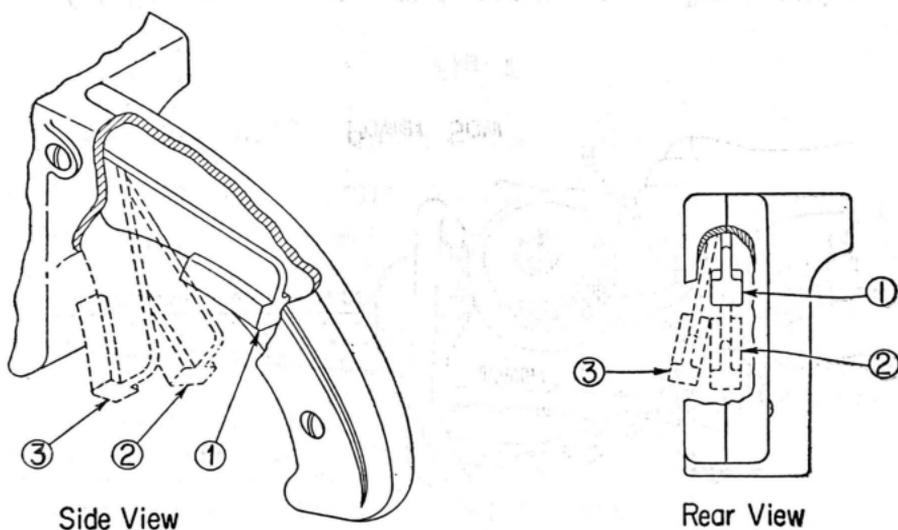


Fig. 6

6.02 **Starting Position**—The trigger should be pulled back to its extreme position as shown by **Position 1** when starting the saw.

6.03 **Stopping Position**—The trigger will automatically come to **Position 2** when released from the starting position or operating range. In this position, the trigger contacts a terminal which shorts out the magneto. **In addition to acting as a switch, this is also a safety feature which shuts off the engine in the event that the saw is dropped or if the operator's hand slips from the throttle control.**

6.04 **Idling Position**—The engine will idle when the trigger is moved forward and to the left as shown in Position 3.

6.05 Engine speed is controlled by the trigger position in the operating range between Positions 1 and 2. Open throttle, Position 1 is required when cutting. The engine should never be raced when not cutting.

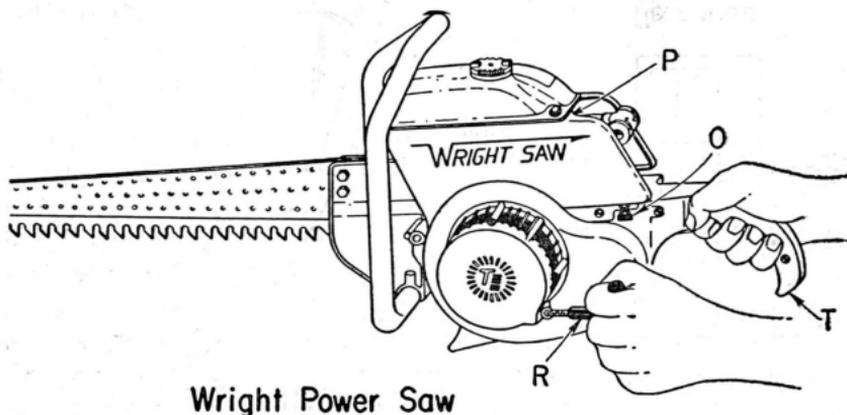
## 7. OPERATING THE ENGINE

7.01 **Starting the Engine**—Refer to Fig. 7.

(a) Check to insure that the blade is properly installed and that all the nuts and bolts are tight. Attach spark-plug wire.

(b) Open fuel shut-off valve (O) and move choke lever (P) to rear if engine is cold. Do not choke if engine is warm.

**Note:** Choking a warm engine, or overchoking when attempting to start a cold engine may result in flooding.



Wright Power Saw

Fig. 7

(c) Be certain the saw is resting on a level surface and the saw blade is clear of obstructions before starting engine.

(d) Grasp rear handle (T) firmly with right hand and pull trigger rearward to starting position.

(e) Grasp the starter handle (R) with the left hand and pull back slowly until starter engages engine. Brace right wrist and pull starter cord straight back. Do not pull cord back to its extreme position, or allow cord to snap back, because damage to the return spring may result.

(f) As soon as engine is operating, move trigger to operating range or idle position and guide starter cord back to normal position. Do not race the engine.

(g) Move the choke (P) forward to open position as the engine warms up.

**7.02 Stopping the Engine**—Engine will automatically shut off when the throttle trigger is released. Close fuel shut-off valve at the end of the day's operation. Remove the spark-plug wire from the plug when the saw is not in use.

**7.03 Racing the Engine**—The engine is equipped with a governor which is set at the factory to operate the engine between 4800 and 5200 rpm. To insure long life, it is important that the engine be run at idling speed when the saw is not cutting. Racing the engine unnecessarily will abuse it. It should never be operated faster than the cutting load requires.

**7.04** Never operate the engine without a blade. The moving parts of the engine are carefully balanced to minimize vibration and to operate at high speed. The blade is connected directly to the engine, and is therefore an integral part of the balanced system. Operating without the blade could result in excessive vibration and damage to the engine.

## **8. OPERATING INSTRUCTIONS**

**8.01** This saw is a reciprocating saw with a guided saw blade. The blade does not have to be forced into the wood. It is not a chain saw and should not be operated as such.

**8.02** Do not use this saw like a hand saw, let the engine do the work for you. This saw functions best when the cut is started at the far side of the log away from the operator and the saw is then rotated slowly toward the operator. Most of the cutting should be done during the rearward arc of the rocking motion. This allows the saw to feed easily and clears the chips at the bottom of the cut.

### **8.03 Notching**

(a) Carefully examine the area around the tree you are about to fell to determine the direction it should fall. Note especially the direction of the wind and the direction the tree is leaning.

(b) Make the notching cuts on the side of the tree toward which you want the tree to fall.

(c) Refer to Fig. 8. It is usually easier to make the angle cut first and the horizontal cut second. The depth of the notch need not be more than one-third (1/3) the diameter of the tree or pole.



Angle Notching

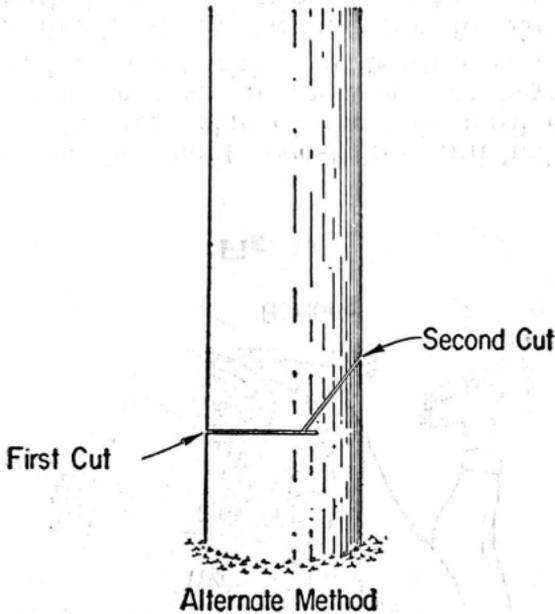


Horizontal Notching

Fig. 8

8.04 **Felling**—The felling cut should be horizontal at least one inch above the bottom of the notch. Always start the felling cut at the far side of the notch opposite the operator and rotate the saw slowly toward the operator around the tree (pole) with an easy rocking motion. Do not start the felling cut at the near side of the notch. Do not rotate the saw away from the operator.

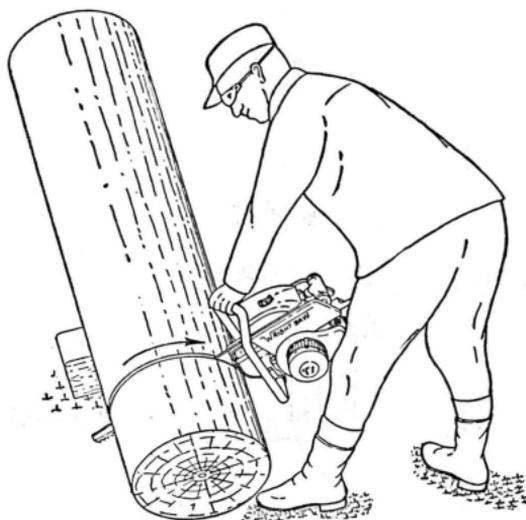
8.05 Fig. 9 shows an alternate method of removing a pole.



**Fig. 9**

### 8.06 Bucking

(a) Refer to Fig. 10. Start bucking cut at **far side** of pole (away from the operator) and rotate saw slowly towards the near side and downward with an easy rocking motion. **Do not start the cut at the side of the pole nearest the operator.**



Bucking

Fig. 10

(b) When cut is about two-thirds finished, draw saw towards the near side of the pole until end of blade projects not more than an inch or two beyond opposite side of pole. Finish cut with front teeth of saw blade.

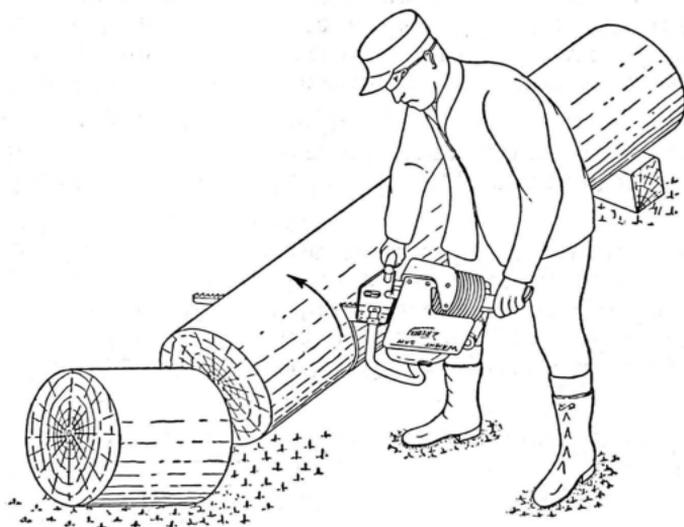
(c) Do not finish cut by rotating saw forward and downward with blade projecting more than an inch or two beyond the opposite side of the pole. Extending the blade too far on the opposite side could result in damage to the saw blade by hitting dirt or rocks beneath the pole.

(d) Frequently the cut will close over the top of the saw blade when the cut is about two-thirds finished, and for logs of less than about 12 inches in diameter, this action will cause "pinching" on the saw blade guide. To finish a "pinch" cut rotate the rear handle of the saw upward and forward and the front part of the blade downward, so that the front portion of the blade cuts through the

bottom of the log. Do not apply heavy pressure while finishing a cut in this manner or the saw will stall. To re-start the saw in the cut, pull the starter rope briskly while holding the throttle trigger fully open in the starting position.

### 8.07 Under-Bucking

- (a) Refer to Fig. 11. To operate saw in the inverted position **change hand position by grasping the front handle with the right hand and the rear handle with the left hand.** Hold throttle trigger in wide open position, and invert saw by rotating to right and sliding right hand around front handle, until right hand grasps the front handle at a position next to the bottom of the front of the housing.
- (b) Start under-bucking cut at opposite, bottom side of log and rotate saw slowly towards the near side and upwards with easy rocking motion.



Under Bucking

Fig. 11

- (c) Do not hold saw front handle in left hand when under-bucking as this position exposes the left arm to the saw blade and the hot exhaust muffler.

### 8.08 Cutting Limbs

- (a) Use the front portion of the saw blade for cutting limbs.

(b) To avoid "pinching" always determine before cutting which way the limb will move when cut. Cuts should be made from the side which will open up, not "pinch" when the cut is made.

For example: If limb is unsupported at outer end, limb will fall. Therefore, the cut should be made from top side.

8.09 **Cleaning out Brush**—Use the tip of the saw blade to cut brush. For cutting brush of less than two inches diameter, the saw does not have to be rotated. For brush of larger diameter use a rocking motion for easier cutting.

## 9. MAINTENANCE

9.01 **Threaded Connections**—All threaded connections on this saw should be checked periodically to be certain they are tight.

9.02 **Cleaning Saw Blade Guide**—Sawdust may become trapped between the blade and guide. This may cause difficulty when replacing a blade because the sawdust will not allow the top edge of the blade to be inserted deep enough into the guide. The guide may be cleaned by scraping the interior lightly with a narrow object.

9.03 **Spark Plug**—Periodically (approximately every 50 hours) remove the spark plug from the engine, clean and reset the gap to .025 inch.

9.04 **Air Cleaner**—The engine on this saw uses a dry type air cleaner. The cartridge should be wiped off with a clean dry cloth at least once a day. The air cleaner may be washed in clear gasoline, kerosene or trichlorethylene as required. **Do not use oil on this filter.**

9.05 **Engine Overheats**—High operating temperatures result in poor saw performance. Consequently the following points should be checked periodically.

(a) If spaces between the cylinder cooling fins become clogged with grass, dirt, sawdust, etc, remove the rear handle and the cylinder shroud and clean the fins.

(b) The flywheel fan chamber should be kept free of all foreign material in order that the free circulation of air may be maintained as well as to prevent possible damage to the fan.

(c) Insufficient oil in the gasoline will result in higher engine friction and therefore higher operating temperatures. Drain the gasoline tank and refill with fuel of the proper gasoline-oil ratio.

9.06 A thorough inspection should be made of the complete unit twice a year as a preventive maintenance measure. This may be done by a Wright Power Saw and Tool Company Distributor. He will make a free semiannual inspection, with the repairs made as required on a time and material basis.

## 10. SHARPENING SAW BLADES

10.01 **Saw teeth must be kept properly filed for fast smooth cutting.** Normally blades should be sharpened after approximately eight hours of operation in soft woods and four hours of operation in hard woods.

10.02 The following procedure is recommended for sharpening saw blades:

- (a) Remove saw blade from the saw.
- (b) Place saw blade in vise with teeth upward.

Note: Only those teeth which are rigidly held by the vise should be sharpened at one time.

(c) Draw a flat file along the tips of all teeth until a small flat area appears on the tip of almost all teeth. This operation results in each tooth being the same height. It is not necessary to do this each time the blades are touched up, but only when marked variations in tooth heights develop.

(d) Using a round edge file (Wright safety file No. 644504 or equivalent) file straight across the vertical face of each tooth from the inside of the tooth toward the outside until the flat area resulting from the drawing operation, mentioned in (c), disappears. **NEVER FILE THE TOP BEVEL OF THE SAW TEETH.**

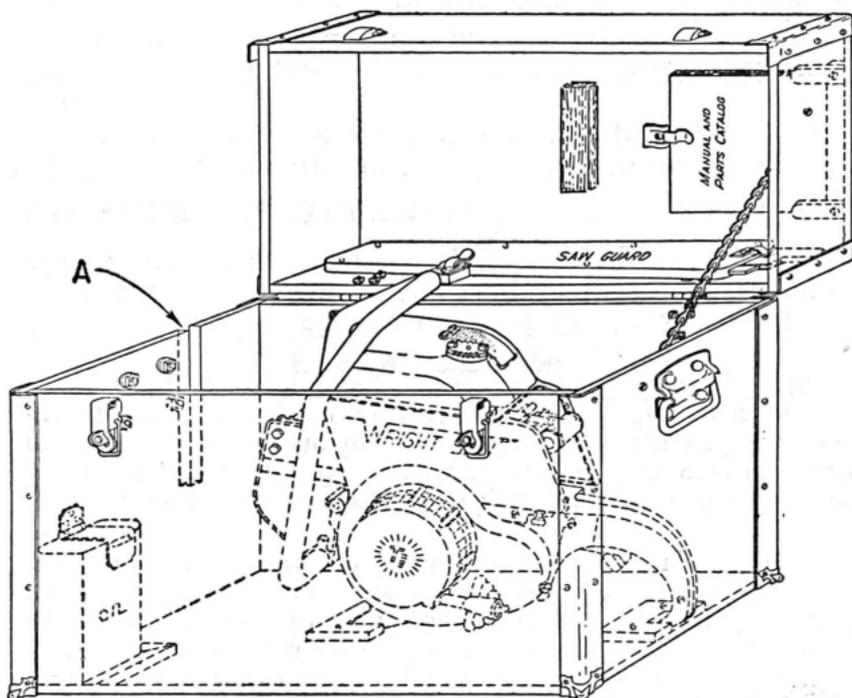
(e) Set (outward displacement of the blade teeth) is permanently applied by the manufacturer and will last the life of the blade.

## 11. STORAGE INSTRUCTIONS

11.01 If the Reciprocating Saw is to be stored for a period of more than one week, the following procedure should be adhered to:

- (a) Empty fuel tank by removing the fuel tank cover and turning saw upside down.
- (b) Run engine until all the fuel in the carburetor is consumed.
- (c) Remove spark plug and place a few drops of light, clean oil into the cylinder. Turn the engine over several times with starter cord to distribute the oil along the cylinder walls.

- 11.02 Place a few drops of oil on the threads of the spark plug to facilitate future removal of the plug.
- 11.03 The saw should be placed in the storage case as shown below.



Storage Case

Fig. 12

11.04 The saw may be stored in the case without removing the blade and guide by cutting a notch in the box as shown by the dotted lines indicated by "A" above. If this is done, the saw guard should be placed on the saw blade whenever the saw is stored. However, storing the saw as shown in the sketch above, without notching the box, will minimize the possibility of damage to the saw.

11.05 Store the saw and its associated equipment in a dry location.