

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

**SECTION G82.440**  
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**CHAIN HOIST**  
**OPERATION AND USE**

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**1. GENERAL**

1.01 This section covers the operation and care of a chain hoist which is for use principally in pulling up guys. It can also be used advantageously for transferring cable in pole replacement work, for raising cable on poles, pulling slack in cable, etc., where the pull required does not exceed about 4,000 pounds.

**2. DESCRIPTION**

2.01 The tool, as shown in Fig. 1, consists principally of a chain, a housing which encloses the sprocket over which the chain is pulled, together with the necessary ratchets, and a hand lever for operating it.

←Indicates locations of changes from previous issue.

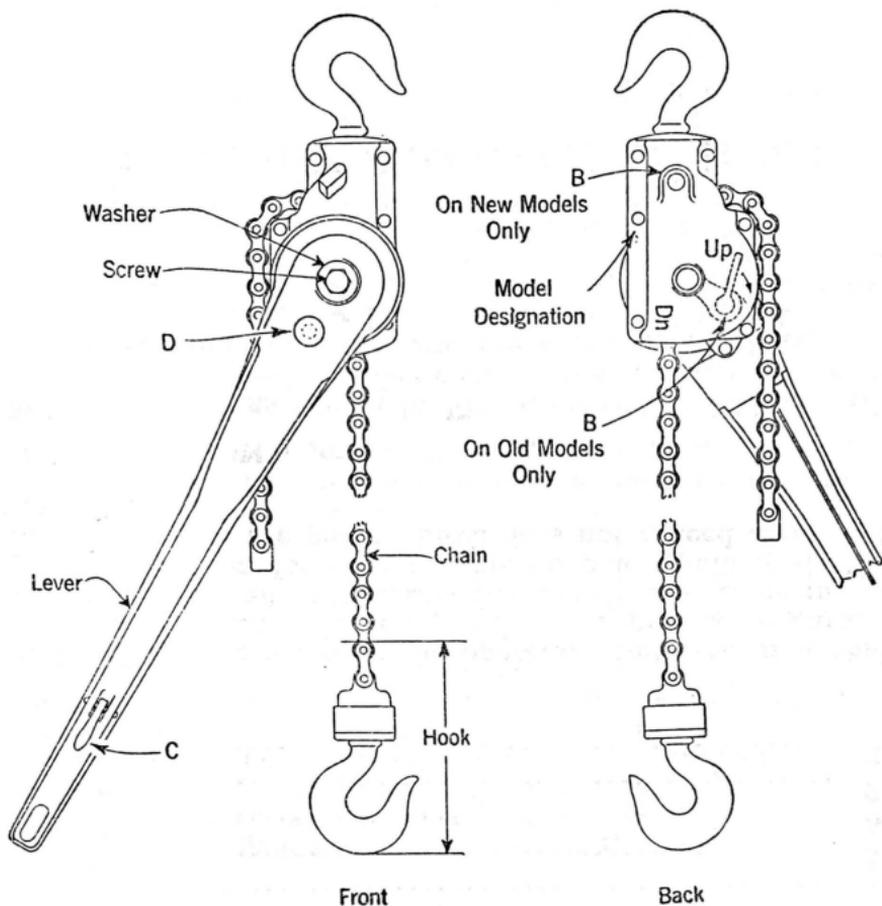


Fig. 1.

2.02 The tool complete as shown weighs about 25 pounds.

Its rated capacity is 3,000 pounds and a force of about 150 pounds at the end of the operating lever is required to develop this pull. In order to develop a pull of 4,000 pounds a force of about 200 pounds is required upon the end of the lever.

2.03 Three controls are provided and these are indicated by the letters B, C and D in Fig. 1. The position of control B, located on the back of the housing, determines the direction in which the chain moves when the hoist is operated. On old model hoists this control is in the form of a small lever. Its location is indicated by the dotted lines in Fig. 1. When this control is in the position marked UP and the hoist is operated,

the chain is pulled so that the hook end is moved toward the housing, and when it is in the position marked DOWN ("Dn") the chain is moved in the opposite direction. On new model hoists the control is in the form of a button and is located nearer the top of the housing as indicated in Fig. 1. When the button is out, the control is in the UP position and when it is in, it is in the DOWN position. If the button is out it can be pushed in by hand. If the button is in, it will automatically move out when the operating lever is moved to the extreme end of its travel on the return stroke.

2.04 The thumb latch C on the end of the operating lever is for releasing the chain so that it can be pulled by hand when desired. When the thumb latch is depressed and the control B is in the DOWN position the chain can be pulled in either direction. When B is in the UP position the chain can be pulled up only. A stop link at the end prevents the chain from being pulled out of the housing completely.

2.05 Button D is for releasing the operating lever stop. When it is held out the lever can be swung to whichever side is more convenient for use. This should only be done with the control B in the UP position.

### 3. USES

3.01 The following illustrations show some of the uses of the hoist and how it is applied. Fig. 2 shows the hoist set up for pulling a guy. Fig. 3 shows it set up for raising a cable. When transferring cable, the hoist can be used to support the cable as shown in Fig. 3 in which case the hoist should be attached to the new pole.



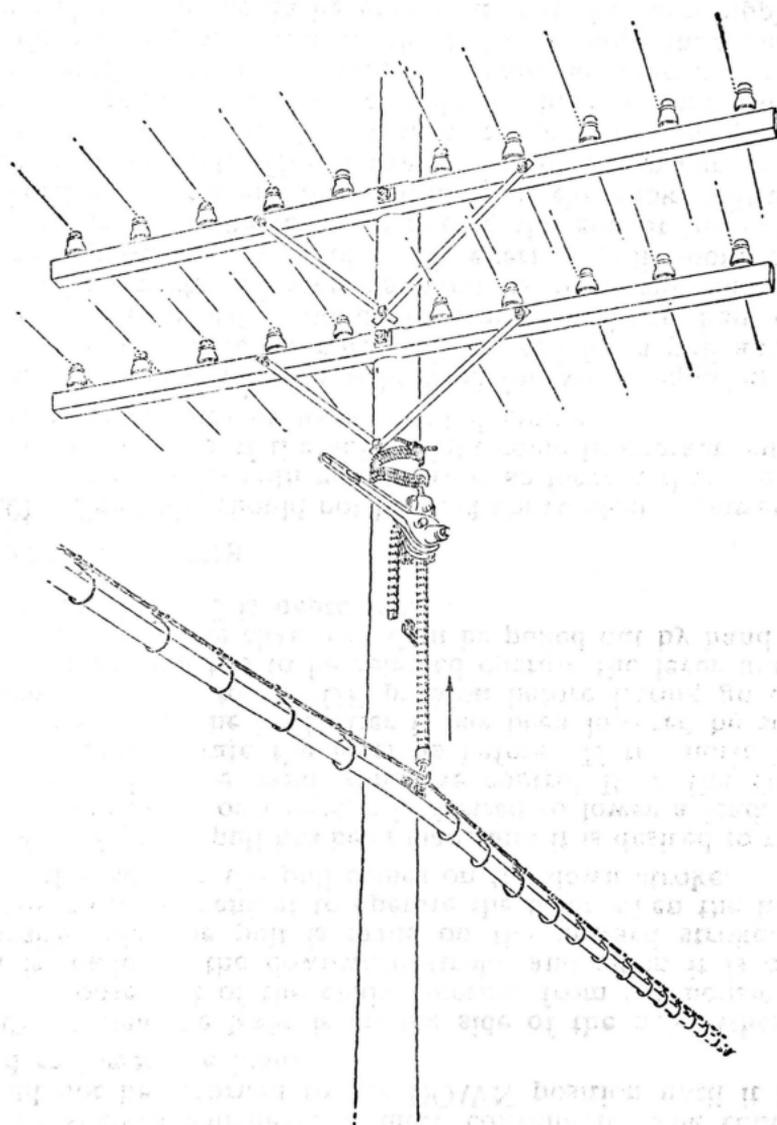


Fig. 3.

#### 4. OPERATION

4.01 In using the hoist it is first connected by means of the hook on the housing to an attachment such as the clevis on a strand puller or a rope sling around a pole. Then with the control B in the DOWN position and the thumb latch

C depressed, pull the chain a few links out of the top of the housing. This allows the retaining pawl to disengage. The chain can now be pulled in either direction by hand and the hook connected to the lower attachment. In order to take up on the chain, the control B is shifted to the UP position and the lever operated like a pump handle. On old model hoists it is necessary to swing the lever through its entire range of travel to complete a stroke. On new model hoists the lever can also be operated through its entire travel or it can be operated in half strokes whichever is more convenient. The control B should not be returned to the DOWN position until it is desired to lower the load.

4.02 When the lever is on the side of the hoist where the loose end of the chain emerges from the housing, the pull is made on the downward stroke and when it is on the opposite side, the pull is made on the upward stroke. It is usually more convenient to operate the lever when the hoist is so positioned that the pull comes on the down stroke.

4.03 After the pull has been made and it is desired to release the hoist, or where it is desired to lower a load, grasp the lever with one hand, shift the control B to the DOWN position and operate the lever as before. If the hoist is still used to support the load after it has been lowered be sure to return control B to the UP position before letting go of the lever. If the hoist is to be released operate the lever until the chain is slack. The chain can then be pulled out by hand when the thumb latch C is depressed.

## 5. PRECAUTIONS

5.01 The hoist should not be used above electric power lines or on poles with vertical runs so located that the chain or any other parts of the hoist might come in contact with any electric power wire or its associated equipment.

5.02 The hoist should not be used for work requiring a pull of over 4,000 pounds. If it is used for a pull above its rated capacity of 3,000 pounds, carefully watch the behavior of the various parts. If any distortion is observed, discontinue further operation. The hoist will exert a pull about twenty times as great as the force applied at the end of the lever. If the hoist is being overloaded the lever or the hooks will usually begin to bend first. This, however, might not occur until the pull is about 4,700 pounds. In order to minimize the possibility of a pull greater than 4,000 pounds the hoist should ordinarily be operated by only one man. In cramped quarters or other situations where operation of the hoist by more than one man is advisable, care should be exercised that the force applied to

the handle is not greater than that which one average workman could apply when working under convenient operating conditions.

5.03 The placing of extensions on the lever or otherwise increasing its normal leverage, or reinforcing it to prevent its bending under load shall not be done.

5.04 In using the tool the workman must have a good grip on the lever at all times so that the force of the load working back through the lever will not pull it out of his hand and possibly cause it to strike him or someone nearby.

5.05 Never leave the control B in the DOWN position while the hoist is supporting a load because the pull on the chain may cause the lever to operate automatically and lower the load. The control B should always be in the UP position except when operating the hoist to lower the load or when adjusting the chain.

## 6. CARE

6.01 The hoist performs best when its mechanism is properly lubricated and free from dirt or other foreign material. Care should therefore be exercised in handling it to avoid the chain carrying mud or dirt into the housing and otherwise permitting the entrance of foreign material. Accumulations of dirt or clay may be removed by washing with a stream of water such as can be obtained from the nozzle of a garden hose. Caked or gummed grease or oil should be removed by washing with kerosene. In either case the tool should be wiped clean and dry and then lubricated.

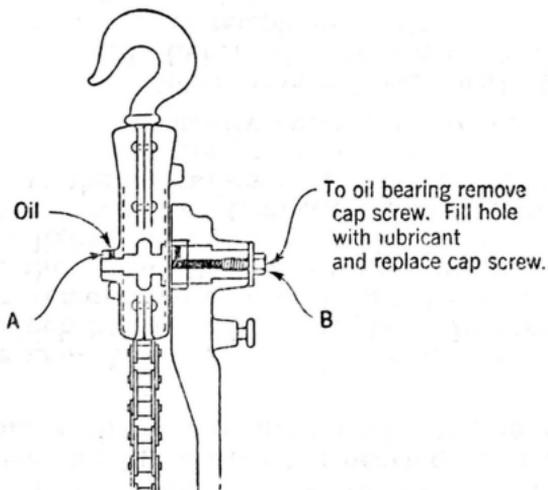


Fig. 4.

6.02 An oil hole indicated by A in the above illustration has been provided on the side of the housing opposite the operating lever for lubricating the bearing on that side. A few drops of oil, such as any automobile engine oil, should be applied.

6.03 The main bearing is lubricated through the cap screw B which holds the lever in place. In order to lubricate this bearing, remove the cap screw, fill the hole with lubricant, and replace the screw. The bearing should normally be lubricated with a light grease such as a No. 2 cup grease. If, when working under very low temperature conditions, difficulty is experienced in the operation of the hoist due to solidification of the lubricant used, the grease may be replaced with an oil such as an SAE, 40 viscosity automobile engine oil.

6.04 The need for lubrication will vary with the amount the hoist is used. Lubrication once a week should be sufficient for daily service in telephone work.

## 7. REPAIRS

7.01 Replacements of the lever, hook, chain, screw or washers, see Fig. 1, can readily be made in the field. Whenever replacement of any of these parts is necessary, the names of the new parts desired and the Model designation of the hoist for which they are intended must be supplied on the order. The old hoist having the lever type control is designated as Model F. The new hoist having the button type control is designated as Model FI. The Model designation is stamped on the flange of the housing at the location indicated in Fig. 1.

7.02 If other parts, especially those of the interior mechanism, require repairs or replacement the hoist should be sent, in accordance with the established routine, to the Western Electric Company for repair.