

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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CR COLLAPSIBLE POWER REEL

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1. GENERAL

1.01 The CR Collapsible Power Reel is used for placing or removing aerial cable within the limitations given in Paragraph 5.05, taking down wire, pulling winch line into conduit, etc. The reel mounts on the end of the winch drum shaft of construction trucks and has a capacity of 1600 feet of 1/4-inch wire rope or a 200-pound coil of wire.

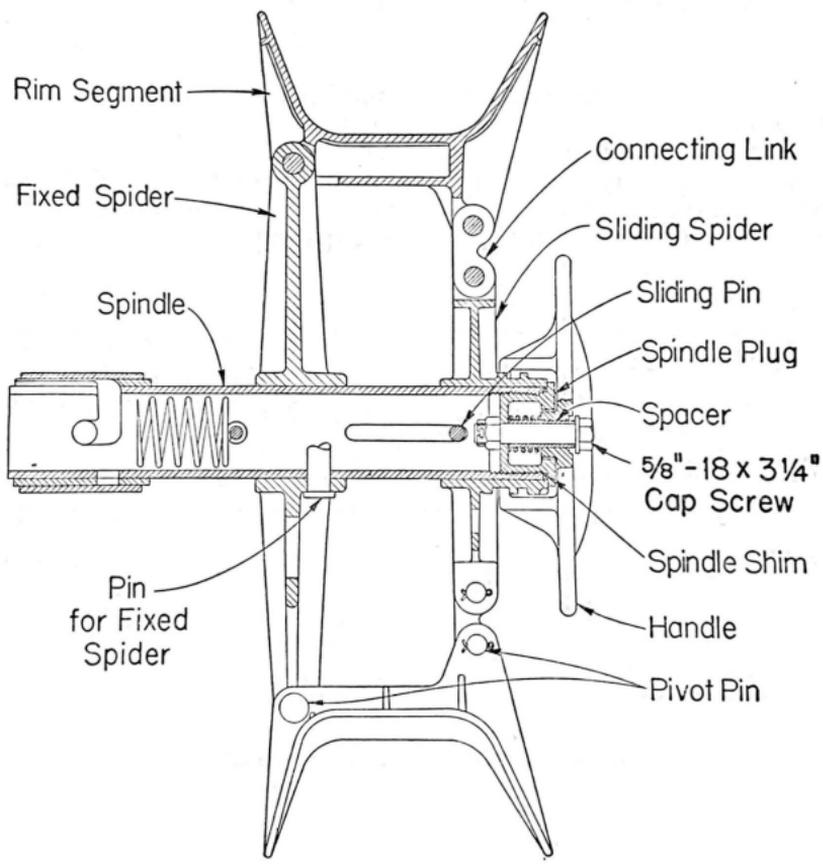
2. SAFETY PRECAUTIONS

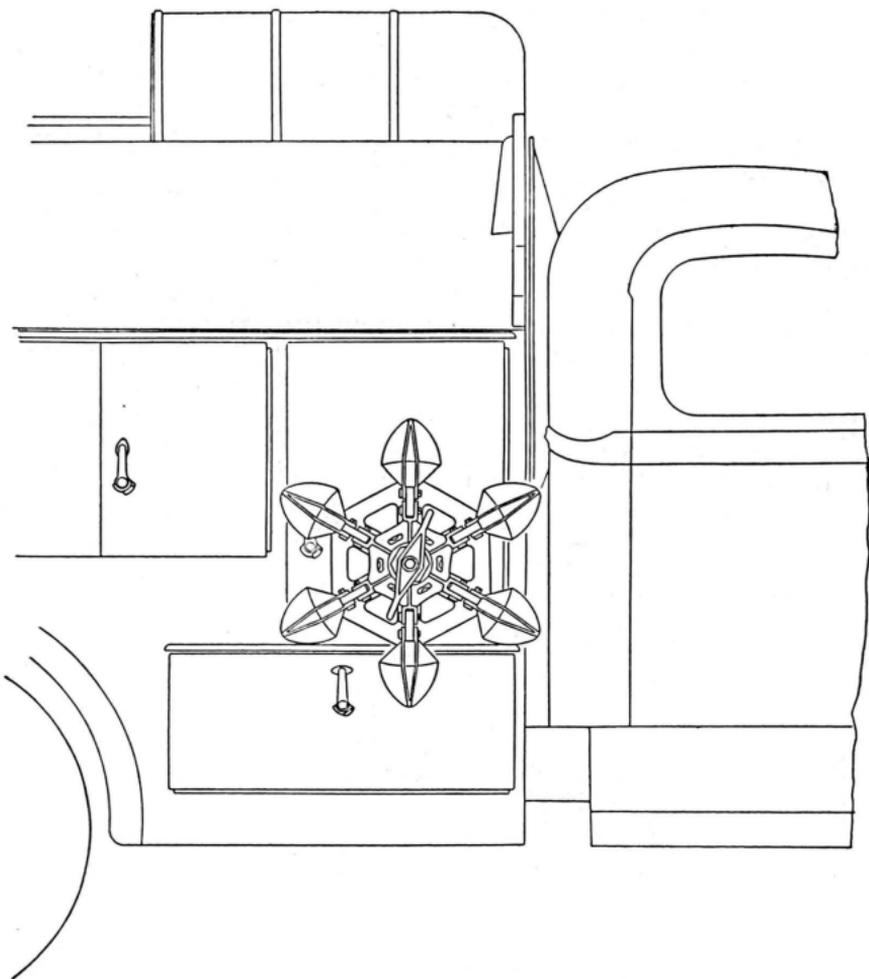
- 2.01 Before operating the reel, make certain that it is properly engaged. (See Paragraph 5.03.)
- 2.02 Stand clear of the reel and keep hands off the line or wire during pulling operation.
- 2.03 Do not overload the reel (see Paragraph 5.05). Be on the alert for snags that might overload the reel. In case of a snag, stop pulling until it has been located and the line cleared.
- 2.04 Move the truck only short distances with the reel mounted.
- 2.05 When removing line wire use a Wire Feeding Tube.

- 2.06 Do not wind up more wire than can safely be removed from the reel taking into consideration the condition of the ground over which the coil will have to be carried.
- 2.07 The reel should be run at a reasonable speed which should be governed by the conditions of the pull.

3. NAME OF PARTS AND DESCRIPTION

3.01 The CR Collapsible Power Reel consists of a spindle with a fixed spider and sliding spider to which are attached six rim segments. The following sketches show this assembly and indicate the part names.

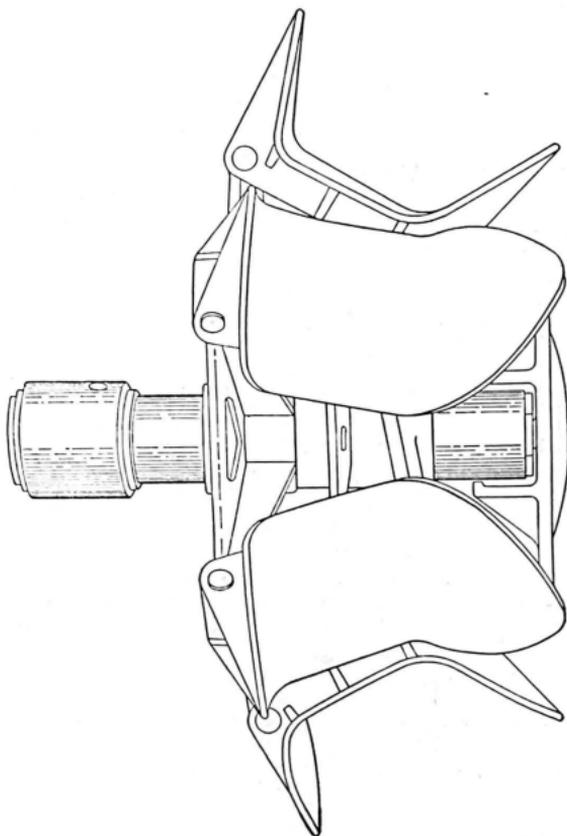




4. EXPANDING AND COLLAPSING THE REEL

4.01 To expand the reel, pull the sliding spider towards the handle until the lugs on the handle engage the threads on the hub of the sliding spider. When the lugs engage rotate the handle in a clockwise direction as far as it will go. This pulls the sliding spider forward and locks the segments in the expanded position.

4.02 To collapse the reel as shown on Page 4 rotate the handle in a counterclockwise direction until the lugs on the handle disengage the sliding spider and then manually push the sliding spider as far as it will go towards the fixed spider.



COLLAPSED REEL

5. OPERATION

5.01 Before using the reel wind all the winch rope onto the winch drum and fasten its end to one of the holes in the flange of the drum. If the winch drum is equipped with a clutch, disengage it.

5.02 Wheels should be chocked and hand brake set. For additional information see Bell System Practice, Wheel Chocks—Use and Care.

5.03 Expand the reel and mount it by sliding its spindle over the end of the winch drum shaft. Push the reel as far as possible towards the truck, turn it counterclockwise as far as it will go and stop pushing. Check to see that the bayonet joint has engaged. When properly engaged the reel can not be rotated in either direction by hand.

5.04 Attach the pulling line to one of the rim segments, by tying it to the lip of the segment and take three or four turns on the reel before tension is placed on the line. The reel is designed to work in either direction, but it is usually

desirable to operate it in a direction corresponding to the forward speed of the truck transmission because of the greater choice of speeds available.

5.05 The maximum pull put on the reel should be limited to 4000 pounds in order to prevent bending the winch drum shaft. This would limit the size of the pulling rope to 1/4-inch improved plow steel winch rope with a wire core. Unless there are severe corners, a 2000-foot length of aerial cable weighing not more than 1 lb. per foot can be pulled by the reel without exceeding a safe limit.

5.06 When the pulling operation is completed bind the coil in three places, collapse the reel and remove the coil.

6. MAINTENANCE

6.01 The fixed spider, rim segments and connecting links are made of aluminum alloy. The reel should be handled with reasonable care to avoid damaging these parts. The reel should be carried in the space provided for it on the truck and should be stored where there is no danger of impact with other items.

6.02 Keep all working parts clean and lubricated. Automobile engine oil is satisfactory for lubricating. Wipe the part of the spindle upon which the sliding spider moves with an oil soaked rag.

6.03 When cleaning and lubricating, inspect the reel for damaged or excessively worn parts and if any are found, replace them or turn the reel in for repairs. See that all pins are secured in place with cotter pins in good condition.

6.04 It should be possible to collapse the reel easily at all times. If difficulty is experienced in collapsing the reel wound with wire or rope, it is probable that the sliding spider is out of adjustment. To test this remove the coil, and expand the reel, forcing the sliding spider tight against the spindle plug. Place a tape around the reel on the rim segments and slowly collapse the reel. If the circumference of the reel increases slightly as the spider begins to move, the spider is out of adjustment. To adjust the sliding spider, the spindle plug is first removed by tapping a corner of the hex nut with a hammer to loosen it after which the spindle plug can be unscrewed by hand. (Turn counterclockwise to unscrew.) A spindle shim is then taken out, the spindle plug replaced hand tight and the above test repeated. Continue to remove shims until the test indicates the sliding spider is in adjustment. If the reel does not collapse freely after taking up line when the test indicates the sliding spider is in adjustment or if removal of all the shims does not bring the spider into adjustment, turn the reel in for repair.

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