

# The Griphoist-Tirfor

by Battalion Chief Raymond M. Downey, SOC

The Griphoist-Tirfor is an extremely versatile, hand-powered tool that can be used for lifting, pulling, lowering and positioning. The tool is effective in the horizontal, vertical or angled position.

The principle behind the operation of the Griphoist-Tirfor can be described as "hand to hand," similar to a firefighter pulling on a rope. While one hand pulls, the other changes position to pull in turn. The two hands represent the two jaws of the Griphoist-Tirfor. They grip the wire rope without damaging it and alternately pull it during forward and hold it during reverse operation. The effort is transferred to the jaws by two levers—one for forward and the other for reverse operation. The load is held securely at all times. Without a ratchet or pawl, loads can be positioned precisely.

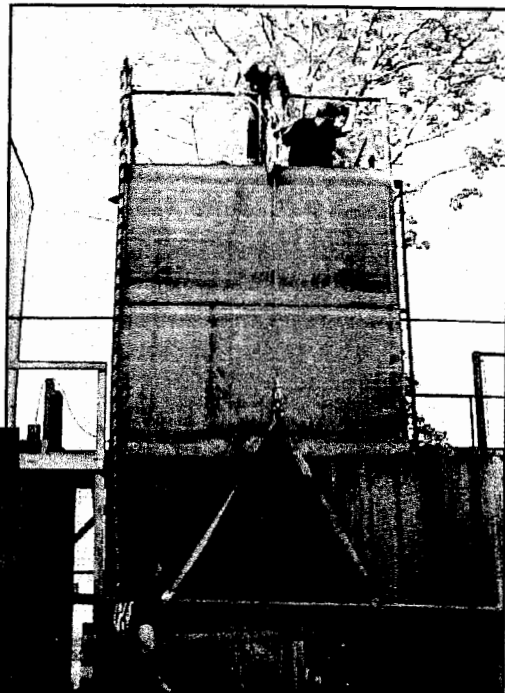
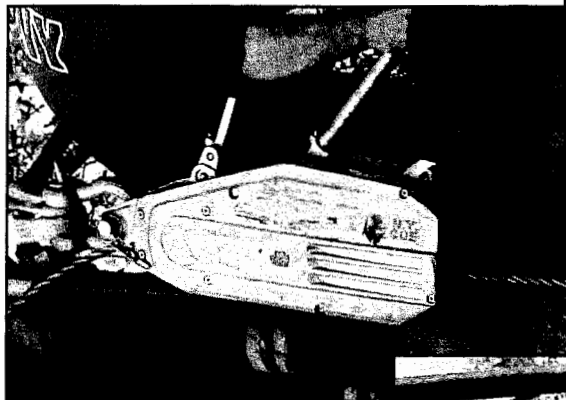
The lifting and pulling power of the Griphoist-Tirfor can be increased greatly by the use of multiple sheave blocks. When increasing the nominal capacity of the Griphoist-Tirfor by two, three or four times, an allowance must be made for friction in the sheaves. It must be ensured that the capacity of the blocks, fittings and anchor points are suitable for the load.

The wire rope for the Griphoist-Tirfor machine is not a standard production rope; it has been developed specially to operate the tool. The wire rope is supplied on a reeler for convenient transportation and storage.

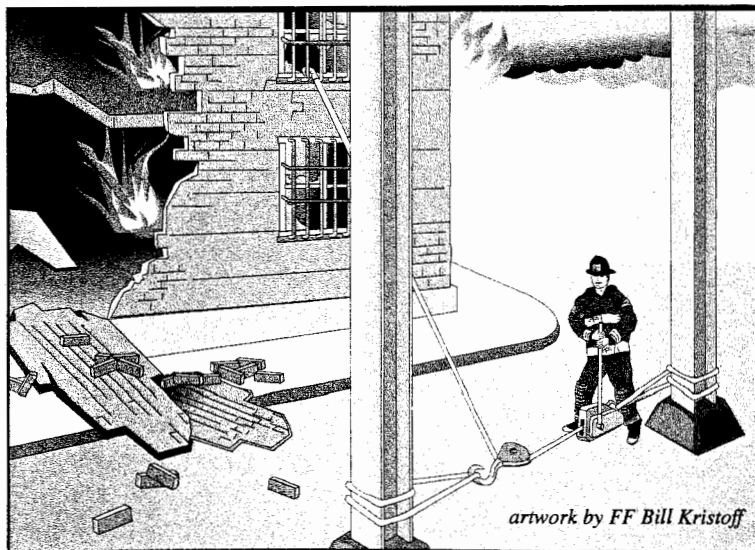
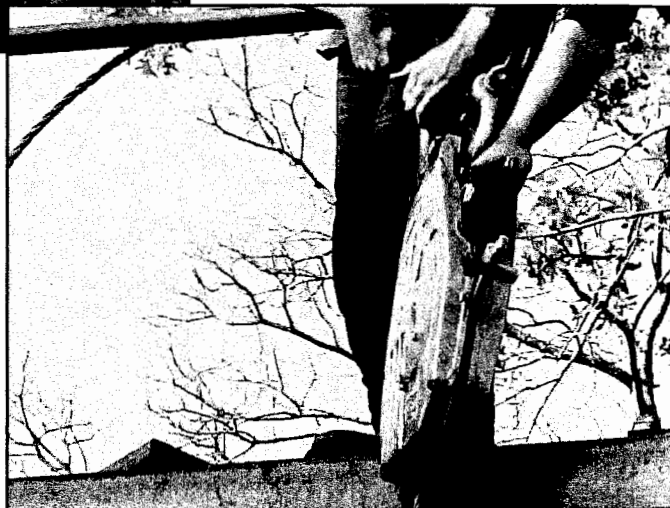
FDNY members have employed the tool for removing bars from windows, lifting heavy loads, at vehicle and transportation accidents, pulling down unsafe objects and stabilizing loads. (See, too, Essex Street Foam Operation on page 14 and Elevator Emergencies--Odd Jobs on page 17.)

All Rescue Companies and Squads 1 and 41 carry the heavy-

duty models, known as TU-28 and TU-32. Model TU-28 has a nominal capacity of 4000 lbs. with 60 feet



Rescue 2 members train with the Griphoist-Tirfor.  
all photos courtesy of Chief Raymond M. Downey



of 7/16-inch wire rope with a breaking strength of 20,000 lbs. The TU-32 has a nominal capacity of 8000 lbs. with 30 feet of 5/8-inch wire rope with a breaking strength of 40,000 lbs.

The tool works in any position, is easy to set up and--when lifting or lowering--the load is controlled permanently with the utmost precision. When the operation stops, the load is distributed on two jaw blocks.

As in all of our operations, necessary safety precautions always must be taken when using the tool.

## About the Author...

Battalion Chief Raymond M. Downey is a 37-year veteran with the FDNY and heads up the Special Operations Command. He is a Contributing Editor for Fire Engineering, the author of The Rescue Company, a regular contributor to WNYF and a frequently requested speaker and instructor throughout the country. He holds an AAS degree in Fire Science.

