

The skidding and outhaul drums embody our inter-gearred feature and the slack pulling drum is provided with automatic friction.

The friction on the skidding drum is band type, operated by hand, and self locking when set up, thus relieving the operator of continuous effort to keep this friction engaged.

The outhaul drum is fitted with a band friction for interlocking with the skidding drum, which, when locked, revolves these two drums in opposite directions. The friction in the outhaul drum is hand operated, and a spring is interposed in the lever system to maintain a smooth and uniform tension.

To the opposite end of the outhaul drum is attached a gear which meshes with a friction clutch gear on an intermediate shaft, which drives the outhaul drum in the opposite direction for returning the carriage to the logs. This friction clutch is cone type asbestos composition blocks, set by air thrust cylinder, and on the opposite end of the intermediate shaft is placed a smaller air thrust cylinder for positive release of the driving clutch. Both thrust cylinders are connected with a four-way valve and controlled with one lever.

Asbestos lined brake bands are provided on both skidding and outhaul drums.

The friction for the buggy drum is a flat asbestos disc at each end set up with screw thrust. A coil spring is interposed between the thrust collar and drum to provide smooth and uniform pressure when the lever is latched. This construction permits application of the friction to maintain proper tension in the buggy line to keep it reasonably tight, and when set up tight will give sufficient pressure to pull slack in the skidding line.

The two-speed feature of the skidding engine is interposed between the crank shaft and the skidding drum. This consists of a shaft carrying two friction pinions engaging two pinions on the crank shaft and a third pinion engaging the skidding drum. The relations between the friction pinions and the pinions on the crank shaft are such as to transmit power through one pair at twice the speed of the other pair, so that all of the drums have two rates of motion, one twice as rapid as the other. This feature provides twice the pulling power at the lower speed for excessively heavy loads and is operated at the higher speed wherever the size of the load permits.

The frictions for the two pinions on the intermediate shaft are cone type asbestos composition blocks and set by two air thrust cylinders, one on each end of the

