The following are descriptions of three types of home-made log turners and accessory deck equipment as amplifications of equipment available from manufacturers of sawmill machinery.

Bar Kicker (fig. 1, A).--This consists of an upright metal bar with three teeth welded to it spaced approximately 2 feet apart, a guide and roller, and a base member as indicated by the sketch. The metal rod attached to one end of the base and approximating twice the length of the upright bar is anchored beyond the track. A chain attached to the other end of the base is connected to the hub of the rear-axle assembly of an automobile. Power is taken from a pulley on a line shaft by belt to a pulley attached to the main shaft of the car transmission. The kicker-bar is raised by applying a brake to the hub not carrying the chain, either by a clutch on the rim (fig. 1, A), by hydraulics as shown in the sketch of deck chain drive for the rocker-arm type (fig. 2, A), or by a belt tightener as shown for the belt powering the deck rocker arm (fig. 2, A).

Hook Turner.--This consists of a thrust bar with one end welded to a shaft and having a pivoted hook and a rack arm attached to the opposite end, with cams on the shaft to elevate the cant as the thrust bar is raised, plus transmission consisting of pinion, gears, sprocket and chain, and clutches. The mechanism is usually constructed to provide sawyer-operated control of deck chains and turner (fig. 1B).

The deck chains are activated by engaging clutch (b) attached to the powered shaft (a) with the floating sprocket driving the chain to the deck-chain transmission. The thrust bar is raised by engaging the floating gear (d) with clutch (c) and lowered by engaging the floating sprocket (e) with clutch (c). At the inoperated position the thrust bar, hook, and rack are below deck skid level with the hook jackknifing between the bars. A slow upthrust of the bar is used to boost the round log on to the carriage, and the hook thus remains cradled. To turn the log down, a quick upthrust of the bar propels the hook into the position indicated on the sketch. Shaft (f) is fixed in the deck skids so that its axis is 4 inches outside of the end of the carriage bolster and 6 inches below the level of the bolster top.

Rocker-arm Turner (fig. 2, A, B).--This can be built to provide for transporting the log from the pond to deck, bringing it to the carriage loading position, placing it on the carriage, and turning. The deck equipment (fig. 2, A) consists of a line shaft, carrying three drive pulleys, three rear transmissions and main-shaft stubs of automobiles, sprockets,
chains, rocker arms, and elevating device to expedite transferring the log from deck to carriage. The carriage equipment (fig. 2, B) consists of rocker arms, actuating levers, obstacle, and bottom dog.

The mechanism bringing logs from the pond to the deck is usually controlled by the pond man; that for moving logs to the carriage, placing, and turning is sawyer-controlled. A master cylinder connected to the hydraulic brake in one hub of the rear transmission permits application and release of the brake, thus insuring rotation or stoppage of the opposite hub. A sprocket fixed to the latter and connected by roller chain to a sprocket fixed to the shaft motivating the pond to deck chains provides transmission. A similar hookup of the transmission bringing logs to the front of the deck is controlled by the sawyer.

The deck rocker-arms rotate to boost the log on to the carriage when the sawyer tightens the belt by moving the roller; the supplementary skids of the elevating device automatically are raised by a saw-lever mechanism as the rocker-arms are elevated. The rocker arms return to the position below the deck skid level when the roller is released. A counterweight may be necessary to insure this. One end of the rocker arm serves as a log stop when the arm is at rest position.

The carriage rocker arms rotate to boost the log off the carriage, and turn it so that the face last sawed is down when the sawyer returns the carriage to the position where the wheeled member (e) (fig. 2, B) attached to the carriage frame contacts the obstacle (f). The obstacle is so attached to the track supports that the tapered end is about 3 inches from the inside of the track and the other end approximately 9 inches, with the over-all length being approximately 2 feet. It should be far enough from the saw to insure log clearance when the latter is turned. Members (c) and (e) are joined to (d) by ball-and-socket joints from the steering mechanism of an automobile. Member (g) is a bar having two insert teeth welded to the free end and pivoted at the other end to the carriage frame. A cam (h) attached to shaft (a) brings the teeth in contact with the bottom of the cant, and this expedites turning when (a) is rotated to lift the rocker arms (b). Shaft (a) is fixed to the carriage frame so that its axis is outside of and level with the top of the frame member, thus being 2-1/2 inches inside the bolster end.

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Small-mill Specialist
August 1951
Figure 1.--A, bar kicker; B, hook turner.
Figure 2.--Rocker-arm turner. A, deck equipment; B, carriage equipment.