

HOISTING APPARATUS AND CONVEYORS

conveyor and struck a person. Workmen should always be warned to place material carefully on a conveyor so that it will ride safely.

Maintenance precautions. Before maintenance men commence working on a conveyor, they should padlock the main power control in the "off" position. The maintenance foreman should carry the only key to this lock. If two gangs work on one conveyor, the foremen of both gangs should each padlock the master switch.

Areas should be readily accessible so that maintenance men can change the position of pulleys, sprockets, or sheaves to compensate for normal working conveyor stretch and wear. If adjustment is required while equipment is operating, moving parts should be thoroughly guarded.

Belt conveyors

The belt conveyor, consisting of an endless rubber, fabric, plastic, leather, or metal belt running over two large pulleys with numerous flat or troughing idler pulleys between them to support the belt, is probably the most common type (Fig 18-24). It is used to carry boxes, cartons, bags, and similar objects as well as the bulk material to which this discussion is confined.

Material in bulk form, such as coal, ore, or sand, passes from the loading hopper into a loading boot above the tail end of the conveyor. At the opening in the boot there is a skirtboard at each side of the belt, about an inch above it and 2 or 3 in inside either edge. Thus as the material is delivered onto the belt, it forms a mound on the center that is far enough from the edges not to spill off.

In the simplest conveyor the material is discharged over the pulley at the head end of the conveyor. The loading hopper, with its boot, can be mounted on flanged wheels that ride on small railroad rails, so that the belt can be loaded at any point.

In some installations, such as over coal bunkers, it may be necessary to discharge the material from the conveyor at various places. In this case, the belt is raised up and over a large pulley mounted on a movable tripper that runs on a track straddling the conveyor.

The on-running belt should be guarded for at least 18 in from the points of tan-

gency between the belt and the head and tail pulleys and between the belt and the tripper and hump pulleys. If the hazard is out of reach (more than 7 ft above the floor or platform) or close to a wall or other obstruction, no one in the normal course of his duties should be exposed to it.

The fact that the skirtboards of the loading boot are close to the upper surface of the belt means that if a man's arm should be caught, the belt could not be raised sufficiently to allow the arm to ride over an idler pulley under the belt where the arm undoubtedly would be badly mangled. Therefore, guards should be installed at the sides of the conveyor at the loading boot.

The points of contact where the wheels of movable trippers roll on the rails also must be guarded. Where the operator travels on the tripper, a platform should be provided for him. It should be so located and constructed as to protect him from slipping and falling and to prevent contact between him or his clothing and moving parts. To help prevent his falling into the hopper, the platform should have handholds and railings.

At the conveyor floor above the coal bunkers in power plants, the slot through which coal from the tripper chute is discharged into the bunker is protected by bars placed across it about 12 in apart at floor level. A piece of discarded belting of the required width and length can be placed to cover the slot, and its ends are securely anchored. At the tripper platform are four pulleys that raise this belt vertically so that it passes over the access to the tripper platform. This device not only provides safety, but also seals the slot and thus keeps the dust in the bunker.

Wherever a man might fall onto a conveyor, a gate or paddle can be suspended as low as practicable above the belt near the head pulley, so that a man's body riding on the belt would automatically pull a stop rope and quickly stop the conveyor.

On belt conveyors at floor level or on balconies or galleries, a shield guard or housing should completely enclose each end. Guardrails and toeboards should extend the length of the conveyor.

To help remove static from belt conveyors, tinsel or needlepoint static collectors can be placed close to the outrunning sides of the drive pulleys and idlers, which, along