pletely enclose that portion of the saw above the table and shall be arranged so that the hood will automatically adjust itself to the thickness of, and remain in contact with, the material being cut. Where there is a possibility of contact with a portion of a circular saw beneath or behind the saw table, that portion shall be covered with a guard to prevent accidental contact with the saw.

(b) *Spreaders.* Each circular ripsaw shall be furnished with a spreader to prevent material from squeezing the saw or being thrown back on the operator. A spreader need not be used for work which is restricted to grooving, dadoing, or rabbeting.

(c) *Non-kickback fingers or dogs.* Each circular ripsaw shall be provided with non-kickback fingers or dogs so located as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator.

§ 50–204.209 Swing and sliding cut-off saws.

The requirements expressed in this section apply to all swing cut-off saws and to those sliding cut-off saws which are mounted above the table.

(a) *Hood.* Each of the saws to which this section applies shall be provided with a hood that shall completely enclose the upper half of the saw, the arbor end, and the point of operation at all positions of the saw. The hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters and broken saw teeth. It shall be designed so that it will automatically cover the lower portion of the blade, so that when the saw is returned to the back of the table the hood will rise on top of the fence, and when the saw is moved forward the hood will drop on top of and remain in contact with the table or material being cut.

(b) *Counterweights.* Each of the saws to which this section applies shall be provided with an effective device to return the saw automatically to the back of the table when released at any point in its travel.

(c) *Limit stops.* Limit chains or other equally effective devices shall be provided to prevent the saw from swinging beyond the front or back edges of the table.

(d) *Latches.* A latch or equivalent device shall be provided to prevent the saw from rebounding upon its return to the rear of the table.

§ 50–204.210 Inverted swing cut-off saws (jump saws).

Inverted swing-cut-off saws shall be provided with a hood that will cover the part of the saw that protrudes above the top of the table or above the material being cut. It shall automatically adjust itself to the thickness of, and remain in contact with, the material being cut.

§ 50–204.211 Radial saws.

(a) *Hoods and guards.* The upper hood shall completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor. The upper hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters, broken saw teeth, etc., and will deflect sawdust away from the operator. The sides of the lower exposed portion of the blade shall be guarded to the full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut to give maximum protection possible for the operation being performed.

(b) *Spreaders.* When radial saws are used for ripping, a spreader shall be provided meeting the requirements expressed in section 50–204.208(b).

(c) *Non-kickback fingers or dogs.* Each radial saw used for ripping shall be provided with non-kickback fingers or dogs located on both sides of the saw so as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator.

(d) *Adjustable stops and return devices.* An adjustable stop shall be provided to prevent the forward travel of the blade beyond the position necessary to complete the cut in repetitive operations.

§ 50–204.212 Portable circular saws.

All portable power-driven saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the arc required to permit the base to be tilted. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to covering position.

§ 50–204.213 Band saws and band resaws.

(a) *Enclosing band-saw blades.* All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table. Band-saw wheels shall be fully encased. The outside periphery of the enclosure shall be solid. The front and back of the band wheels shall be either enclosed by solid material or by wire mesh or perforated metal. Such mesh or perforated metal shall be not less than 0.037 inch (U.S. Gauge No. 20), and the openings shall be not greater than ⅜ inch. Solid material used for this purpose shall be of an equivalent strength and firmness. The guard for the portion of the blade between the sliding guide and the upper-saw-wheel guard shall protect the operator from the saw blade at the front and outer side. Brakes shall be provided to stop the wheel in case of blade breakage.

(b) *Tension.* Each band-saw machine shall be provided with a tension control device to indicate a proper tension for the standard saws used on the machine.

(c) *Feed rolls.* Feed rolls of band resaws shall be protected with a guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point.

§ 50–204.214 Jointers.

(a) *Point of operation.* (1) Each hand-fed planer and jointer with horizontal head shall be equipped with a cylindrical cutting head, the knife projection of which shall not exceed ⅛ inch beyond the cylindrical body of the head.

(2) The clearance between the edge of the rear table and the cutter head shall be not more than ⅛ inch. The table throat opening shall be not more than 2½ inches when tables are set or aligned with each other for zero cut.

(b) *Automatic guards.* (1) Each hand-fed jointer with a horizontal cutting head shall have an automatic guard which will cover all the section of the head on the working side of the fence or gage. The guard shall keep the operator's hand from coming in contact with the revolving knives. The guard shall automatically adjust itself to cover the unused portion of the head and remain in contact with the material at all times.

(2) Each hand-fed jointer with horizontal cutting head shall have a guard which will cover the section of the head back of the gage or fence.

(3) Each wood jointer with vertical head shall have either an exhaust hood or other guard so arranged as to enclose completely the revolving head, except for a slot of such width as may be necesssary and convenient for the application of material to be jointed.

§ 50–204.215 Wood shapers, hand-fed panel raisers, and similar machines.

(a) The cutting heads of each wood shaper, hand-fed panel raiser, or other similar machine not automatically fed, shall be enclosed with a cage or adjustable guard designed to keep the operator's hands away from the cutting edge. The diameter of circular shaper guards shall be not less than the greatest diameter of the cutter. In no case shall a warning device of leather or other material attached to the spindle be acceptable.

(b) Cylindrical heads shall be used whenever the nature of the work will permit.

(c) All double-spindle shapers shall be provided with a starting and stopping device for each spindle.

§ 50–204.216 Planing, molding, sticking and matching machines.

(a) Each planing, molding, sticking, and matching machine shall have all cutting heads, and saws if used, covered by a metal guard. If such guard is constructed of sheet metal, the material used shall be not less than 1/16 inch in thickness; and, if cast iron is used, it shall be not less than 3/16 inch in thickness.

(b) Where an exhaust system is used, the guards shall form part or all of the exhaust hood and shall be constructed of metal of a thickness not less than that specified in paragraph (a) of this section.

(c) Feed rolls shall be guarded by a hood or suitable guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be fastened to the frame carrying the rolls so as to remain in adjustment for any thickness of stock.

(d) Surfacers or planers used in processing multiple pieces of material simultaneously shall be provided with sec-