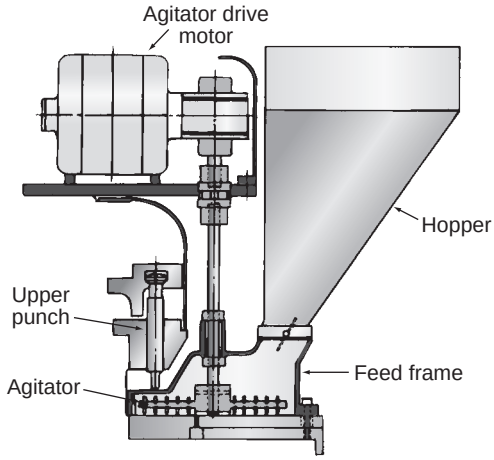


**FIGURE 8.26** Induced die feeder. The standard gravity-fed open feed frame can be replaced with an induced die feeder, with which granulation is forced into the die by the rotary action of the agitator. (Courtesy of Cherry-Burrell Corporation.)

excipients may be used to impart the necessary qualities for the production of tablets by direct compression. These excipients include *fillers*, such as spray-dried lactose, microcrystals of alpha-monohydrate lactose, sucrose–invert sugar–corn starch mixtures, microcrystalline cellulose, crystalline maltose, and dicalcium phosphate; *disintegrating agents*, such as direct compression starch, sodium carboxymethyl starch, cross-linked carboxymethylcellulose fibers, and cross-linked PVP; *lubricants*, such as magnesium stearate and talc; and *glidants*, such as fumed silicon dioxide.

The capping, splitting, or laminating of tablets is sometimes related to air entrapment during direct compression. When air is trapped, the resulting tablets expand when the pressure of tableting is released, resulting in splits or layers in the tablets. Forced or induced feeders can reduce air entrapment, making the fill powder more dense and amenable to compaction.

Capping also may be caused by punches that are not immaculately clean and perfectly smooth or by a granulation with too much fines or fine powder. Fine powder, which results when a dried granulation is sized, is generally 10% to 20% of the weight of the granulation. Some fine powder is desired to fill the die cavity properly. However, an excess can lead to tablet softness and capping.

**FIGURE 8.27** Tablets that have split on aging because of conditions of manufacture or storage.

Tablets that have aged or been stored improperly also may exhibit splitting or other physical deformations (Fig. 8.27).

### *Tablet Dedusting*

To remove traces of loose powder adhering to tablets following compression, the tablets are conveyed directly from the tableting machine to a deduster (Fig. 8.28). The compressed tablets may then be coated.

## CHEWABLE TABLETS

Chewable tablets are pleasant-tasting tablets formulated to disintegrate smoothly in the mouth with or without chewing. They are prepared by wet granulation and compression, using only minimal degrees of pressure to produce a soft tablet. Generally, chewable tablets do not contain disintegrants, so patients must be counseled to chew the tablets thoroughly and not swallow them whole.

Mannitol, a white crystalline hexahydric alcohol, is used as the excipient in most chewable tablets. Mannitol is about 70% as sweet as sucrose, with a cool feel in the mouth resulting from its negative heat of solution. Mannitol accounts for 50% or more of the