

sheets an hour. The problem then is to ensure that spring action closure of the grippers will be fast enough to take place during the stationary period.

After closure of the grippers, the register (front) lays move away, and the swing arm grippers move and accelerate to cylinder surface speed; the grippers then synchronise with the cylinder grippers. For a brief period of the cycle (about 7°) both sets of grippers are holding the sheet and moving at the same speed. The swing grippers continue to the end of their travel, stop, reverse direction and return to register position. The return stroke must take place in the period of the cylinder gap unless the swing arm shaft is eccentrically mounted, permitting the grippers to travel through a different arc for return (*fig. 140b*). Fast-running presses use smaller diameter cylinders, for the same sheet size, compared with equivalent size slower-running machines. The difference is taken out of the cylinder gap, and the smaller gap means that the swing arm would collide with the cylinder surface if it is to return in time. Eccentric mounting raises the shaft and allows the swing grippers to clear the cylinder surface on the return stroke. The diagrams indicate a swing-feed system mounted above the feed plate, but another method is to mount the system below the plate (*fig. 137*). The method used depends upon the machine design and the rotation direction of the impression cylinder or the first main in-feed cylinder.

Although swing-feed grippers are a considerable advance on direct systems, they in turn suffer from defects as speeds increase. The swing-arm motion is controlled by a cam and lever arrangement, with the cam follower (or runner) maintained in contact with the cam by strong springs. The higher the speed, the stronger the springs with consequent increased wear. In addition, there are problems of vibration and harmonic spring movement. One solution uses two cams, one for each stroke of the swing-arm, but this adds to the complications inherent in the requirements of

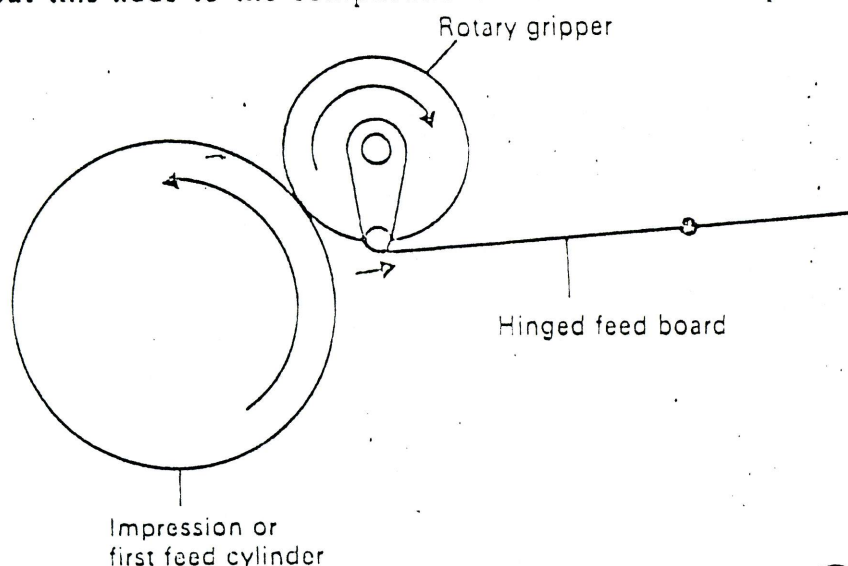


Fig. 141. Rotary feed gripper system.

(See Dominant
or Falcon)