

## NK-apron-feed-clutch

\*\*\*\*\*

\*\*\*\*\*

The half-moon shaped expanders(#23) fit in the angled slots of the clutch shaft (the "screw #24") When the star knob (#37) is tightened, it pulls the two expanders (#23) in and against the inside of the shoes (#22). These in turn push against the inside of the worm gear (#21).

It has been awhile since I have been inside an apron but IIRC, The clutch pinion gear(#19) has two square-like projections on one end. These are the driving "dogs" of the clutch. The shoes(#22) fit on either side of these dogs.

The coil spring(#20) pushes the inside of the clutch pinion gear(#19) and against the cross pin(#26) in the clutchshaft screw(#24). This gives pressure (to open) in the clutch by pushing the expanders(#23) away from the shoes(#22).

Remember, the worm gear(#21) is constantly turning (so long as the leadscrew is turning).When the clutch is disengaged, the clutch pinion gear(#19), shoes(#22), expanders (#23), shaft(screw #24), etc. are NOT turning with the worm gear(#21).

When the star knob(#37) is tightened, the clutch shaft(#24) is pulled in. The expanders(#23) push against the shoes(#22) and force them outward, locking them with the worm gear(#21). These shoes(#22) in turn are mechanically engaged with the dogs on pinion gear(#19). So, with the clutch engaged, the clutch pinion gear(#19) is locked with the worm gear(#21) and in turn, will power the rest of the apron, (depending on the selector lever on the apron).

The two pins(#26) are a later addition to the clutch. Or maybe I should say, when the clutch shaft(screw #24) was modified, the two pins(#26) became necessary. Older versions of the clutch shaft(screw #24) had 4 projections formed on the outside in two pairs (and hence no pins were necessary). Their purpose is to keep the clutch shaft and expanders coordinated with the shoes and give something for the coil spring(#20) can push against.

Lastly, the "hair pin" spring(#25) is placed on the end of the clutch shaft(#24) and the ends are "tucked in" between the two expanders(#23). And the star knob retaining screw(#30) is screwed on (left hand threads).

Webb Wyman

\*\*\*\*\*

\*\*\*\*\*