

The GEM: Reading Hardware's Little Jewel

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The GEM

Parers produced by Reading Hardware generally do not inspire lust in collectors. This is due to the fact that so many of their models were produced in prodigious quantities and any collector could easily find either a '72, '78, or Baldwin on any given weekend. This same company, however, also produced the highly desirable Champion, the 2-knife, and the Rippien Tilt lathe. One final parer of theirs with mechanical wizardry is the elusive GEM. This article will give a detailed description of this small but masterfully designed machine.

The GEM came in 2 versions. Probably the later version featured a covered "slotted disk" that slowly returned the paring arm. I refer to the cover as a lid because it keeps 3-stacked parts in place and was probably an improvement to the earlier model that matches the patent drawing (Fig. 1 Rippien, 1880).

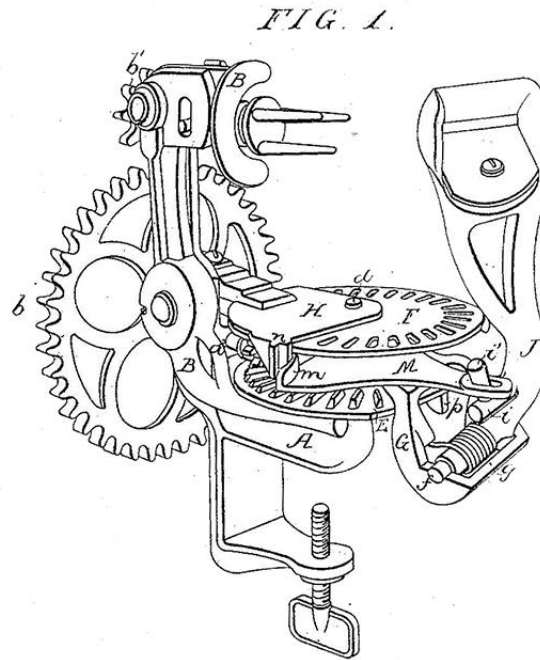


Figure 1

GEM Patent Image

On the very scarce model, the lid only partially covers the slotted disk whose sole purpose is to return the paring arm to the starting position, Fig 2.



Figure 2

GEM Early Model

In essence the GEMs are return parers cleverly designed with two turntables stacked one on top the other. The paring arm is carried by a turntable with helical teeth in one direction and then by a turntable designed with helical slots in the opposite direction. This description however, fails to fully capture the intricate workings of this mechanistic wonder. To understand the operation of either version it is necessary to name the parts from the top down; Level 1--Lid with perimeter post; Level 2--Slotted Turntable; Level 3--Push Plate with foot to cock blade in out position; Level 4--Swinging Blade Carriage. Level 5—Toothed Turntable, Fig 3.

The lid not only holds the rotating parts in position but also provides the stationary post on its perimeter at the 3 o'clock position that causes the push

plate to "cock" the paring arm for its return. This prevents the blade from coming into contact with the peeled apple as it returns after paring.

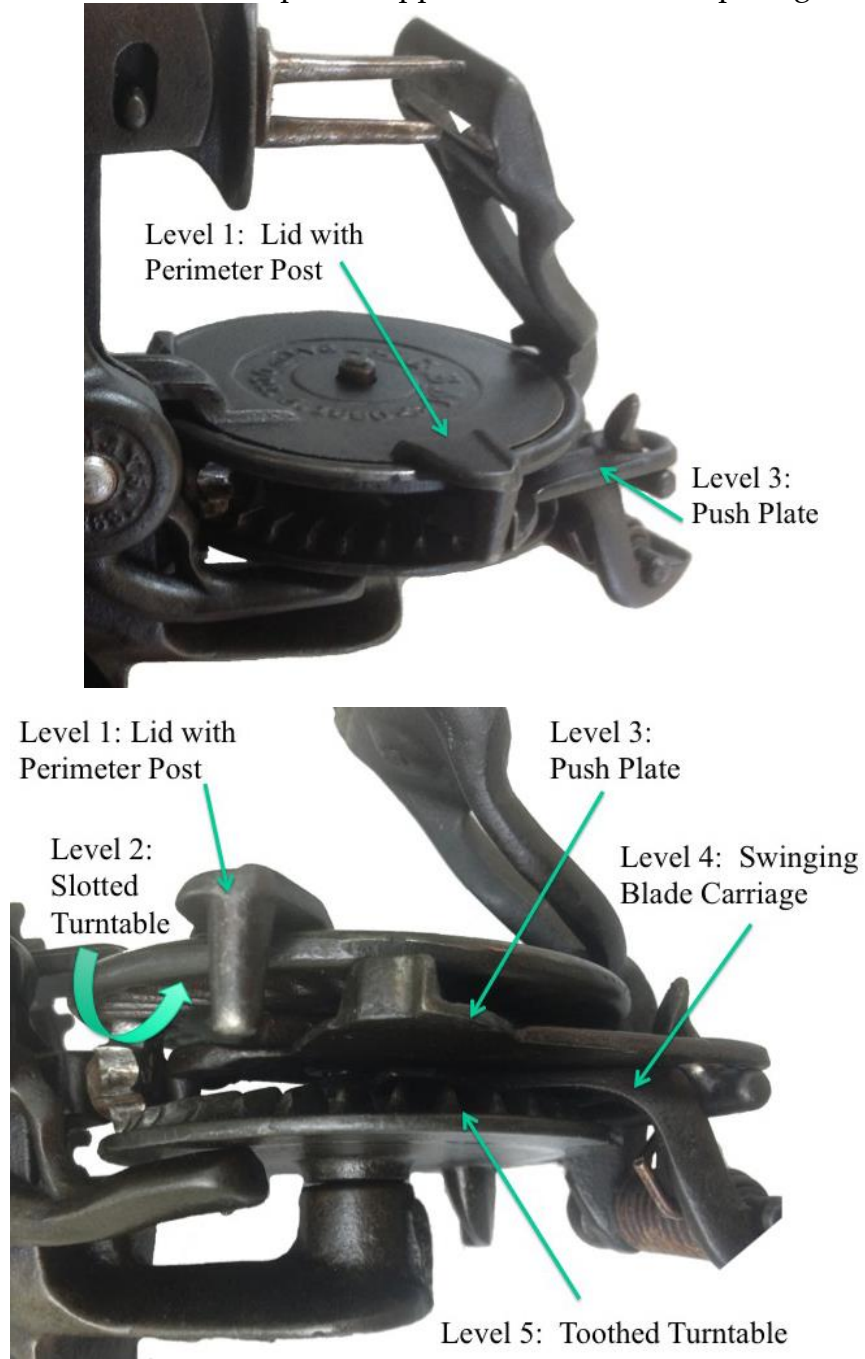


Figure 3 Top and Side View of GEM Paring Mechanism

The cocking action is a delight to observe. First, the push plate contacts the post and is shoved backwards, thus causing the paring arm to lean back. At the same

time, the foot on the plate enters the opening on the gate in the rotating collar in the center of the toothed turntable, Fig 4. This occurs at the 6 o'clock position just below the forks. As the crank is turned, the gate rotates clockwise as the foot on the plate rotates counterclockwise while trapped inside the small collar. This keeps the blade in the cocked or locked out position until both the gate and plate foot meet again at the 12 o'clock position. Here, the foot slips out through the gate releasing the blade arm as it reaches its starting point. While traveling in this locked out position, a sturdy casting on the bottom of the toothed turntable has activated the easily broken kick off.

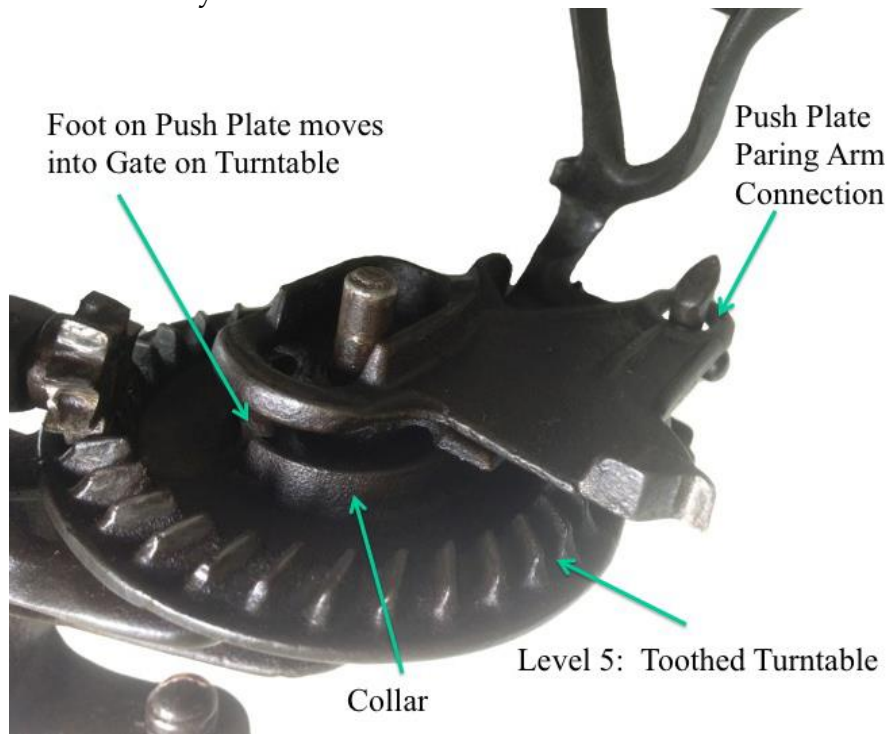


Figure 4 Foot on Push Plate Enters Gate in Collar

It is a beautiful thing to observe and pure engineering is evident in this unique application of mechanical principles. I cannot say it is an improvement over the 2B, but as a collector, I am thrilled this model was allowed to move from the design stage to production. That fact surprises me greatly as I look at its complexity and possibility for breakage.

Without getting too technical, I would like to describe the fascinating action of the return mechanics. This is where all of the parts crammed into that 3/4" "turntable sandwich" really shine. At the precise moment the push plate slides back against the paring arm, the gate in the collar arrives at the 6 o'clock position for the foot to enter. Recall that the gate is rotating so the foot is hitting a moving target. Simultaneously, the rotating slotted turntable begins pushing the plate/blade combo in the opposite direction. Imagine the open gate rotating away from the now trapped foot, both destined to meet up again at the 12 o'clock position. Here is where engineering genius prevails. Had the designer made a narrow gate, the foot would have had to rotate farther and the blade would have been released too late, risking contact with the frame near the forks. Basically, the midpoint of the blade actually needs to reverse about 150 degrees, not a full 180 as one might expect. Close inspection permits the keen eye to see that the foot sneaks in one edge of the rotating gate and slips out the other edge at precisely the right moment. You do not have to be an engineer to appreciate this clever action.

The reader no doubt is wondering what carries the blade forward and what activates the return action. The two versions of the GEM accomplish these two functions in slightly different ways. In the early model the initial movement of paring is possible because the paring arm falls snugly into a wedge cut out of the bottom edge of the toothed turntable, Fig 5. After the plate is forced backwards by contact with the lid post, it pushes the paring arm back away from this wedge, freeing it from the toothed turntable's control. The paring arm is now carried by the push plate that is driven by the counter-rotating slotted turntable.

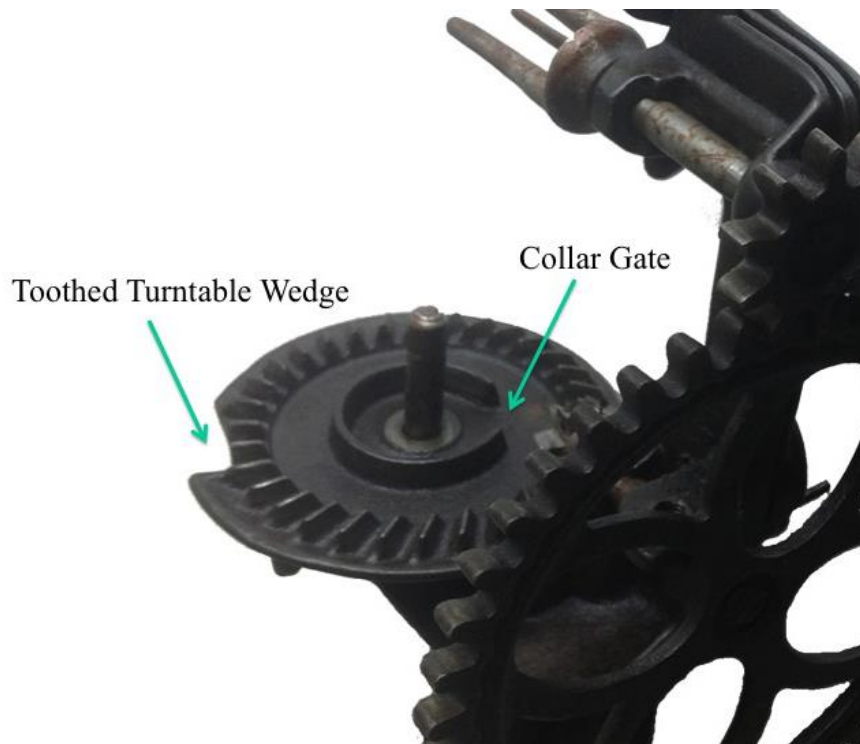


Figure 5 Turntable Wedge on Early GEM model

On the later model, the fully covered slotted turntable has 2 functions, Fig 6. It returns the blade but also slightly pushes the blade away from the forks to guard against breakage on dry runs. Its counterpart, the toothed turntable with collar, carries the blade as it pares, holds the blade in a cocked position on return, and by way of a sturdy post underneath, activates the pushoff.

In his 1880 patent, Mr. Rippien alludes to why small parers have an advantage; "By adopting the means above described for operating the knife-carrying arm I am enabled to make a machine which is very light and compact and can be packed into small compass for transportation--a fact of considerable importance in machines intended for the export trade." Shipping is an issue this collector had not considered.



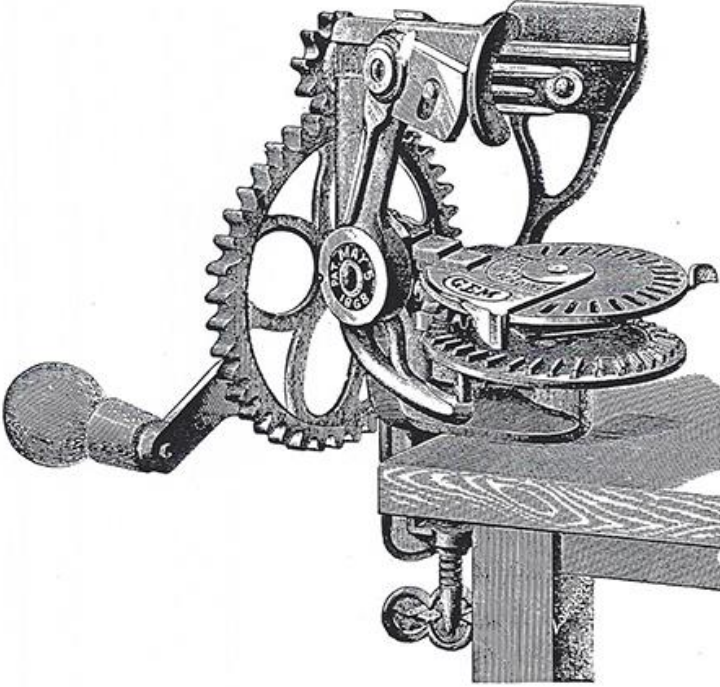
Figure 6 GEM Slotted Turntable Disk

He also calls attention to a chief advantage, though not a claim, of not having the blade assembly attached directly to the turntable. By turning the crank one-quarter turn backwards with a new apple, "when the machine is started in the direction of arrow 2--the fork shaft and the apple carried by the fork will make a full revolution before the knife commences to move, thereby insuring the complete paring of the apple close up to the stem." It is worth noting here that other return parers were capable of this, though further reading of patents is needed to verify if they claimed it. The Whittemore Returntables hesitate at the start whereas the very rare first Hersey, the J. D. Browne and smaller Nonpareil all can be reversed to accomplish this paring close to the forks.

The word gem conjures up thoughts of small precious treasures. Perhaps it is this very association the Reading Hardware Company was trying to create in the

mind of consumers when they named this small, compact parer endowed with such mechanistic cleverness, Fig 7.

THE GEM.



“THE GEM” is the smallest size made by us, has all the *advantages* of larger parers, including the “*Push-off*.”

If you want a parer that will give *satisfaction*, one that combines *superiority* of finish, *rapidity* of execution, and *efficiency* of operation, try “THE GEM,” and you will not be disappointed.

Packed one in a paper box; one dozen in a wooden case.

Respectfully,
READING HARDWARE COMPANY.

Figure 7 Reading Hardware Company Ad

In the September 27th, 1888 issue of *The Iron Age* a report on the hardware trade includes apple parer manufacturers and their advertised prices. The Reading

GEM is listed at \$5.25 per dozen (Williams, 1888, p. 482). To think, these parers were once packed one dozen to a wooden case. The GEM is included in these reports up through 1891 but is not listed starting in the 1892 issues. Imagine, you had up to 12 years during which the GEM was sold to the public by a major hardware company. Yet, it is almost impossible to locate one now. Where on Earth did they go?

The vast majority of these elusive parers are found with a broken pushoff. While this detracts from their potential value, I would hope that an enlightened collector would not pass one up for that reason. A broken pushoff in no way interferes with the exotic movement of the GEM's action.

Consider this. The astute designer could have substituted an ordinary gear on top like we find on the Inverted Turntable or Harbster Bros. That single change would have drastically reduced the appeal of the GEM. As is, the slotted disk helical gear adds a degree of aesthetic appeal found in very few parers. To hold that thin, brittle disk in one's own hands is a thrilling experience, but not as thrilling as owning one of these beauties.

Sadly, in the model most often found, the lid covers up the stylish design. That is why I disassembled mine for fellow collectors to see. Otherwise, it would not be unlike a beautiful woman who never shows her face. Having said that, if you are ever lucky enough to acquire a GEM I have one piece of advice for you; DO NOT TAKE IT APART.

Happy hunting,

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Bibliography

GEM Ad appeared in a Reading Hardware Company Catalog, date unknown.

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GEM Patent Pending