



PEPPER MILLS

a comparative
analysis of
DESIGN

written by

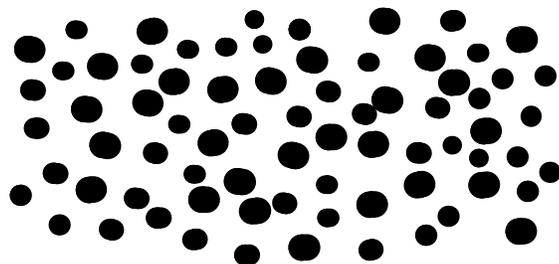
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FORM + FUNCTION

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INTRODUCTION

In this analysis, I compare and contrast the form and function two pepper mills, one a burr-style crank grinder (Figure 1), the other a spring-loaded push grinder (Figure 2). I contextualize their structural and aesthetic distinction by examining the history of pepper mill use and display in the home. Finally, drawing from my observations and judgments of the two objects' features, I offer suggestions for an iteration of their design.



Fig. 1: burr-style crank grinder



Fig. 2: spring-loaded push grinder

BACKGROUND

The history of pepper mills has been handed down like so many recipes; approximations are de rigeur. Thus, when I write that the first pepper mill was invented by the famed French car manufacturer Peugeot in 1842 (Wilson, 2010), the fact should be taken with a grain -- rather, a smidgen -- of salt. Pepper mills had replaced mortar and pestle as a means of grinding peppercorns, and by the 1940s, along with the destined-for-kitsch salt

and pepper shakers, were becoming a mainstay on American kitchen tables (Western Illinois Museum, 2010). As is evident with novelty shakers, mills too became objects of art where form often commanded more attention than utility. As journalist Dee Wilson observed in the Telegraph, "the decades can definitely be divided by changing vogues in pepper grinders" (2010). While there are those value the formal design of pepper mills above else, like Michael

and Knoppy Hoffman, who boast a collection of 600 grinders (Suqi, 2012), the premise of mills provides for culinary function. Designed to grind to a uniform coarseness, pepper mills allow peppercorns to remain whole until immediately before their use. This helps preserve the piquancy of the spice. As the epicurean becomes increasingly ubiquitous in our digitally resourceful culture, the engineering of a pepper mill makes the tool essential to chefs.

AESTHETIC ANALYSIS

	hand-cranked	VS	spring-loaded
WEIGHT	Solid; not heavy but not lightweight	VS	Lightweight; easily knocked over by a brush of the hand
COLOR	Light tan and beige striations; silver	VS	Clear with semi-transparent dark orange; silver
SHAPE	Curvy hourglass figure with tapered middle; offset crank handle	VS	Cylindrical with smooth but not rounded edges
SIZE	Approx. 5.5 inches by 3 inches; crank reaches add'l inch	VS	Approx. 4 inches by 1 inch
MATERIALS	Wood and metal	VS	Plastic and metal
TEXT	Small "Mr. Dudley" logo on the gear, not immediately visible	VS	None
TEXTURE	Smooth, polished; slight natural speckling of wood grain at touch	VS	Mostly smooth encasement; spring presents a tactile contrast

hand-cranked

The hand-cranked pepper mill is made from rich materials which, along with its size, contribute to a comfortable, sturdy weight. Adding to that satisfying tactility is the rounded, curvy shape of the mill's body; the tapered midsection is inviting to the hand. Mostly unadorned, the classic look of its polished wood and tasteful grooves are reminiscent of traditional craftsmanship seen in mid- to late 19th century design (Rodgers & Milton, 2011). Also reiterating the mill's historical ties is the crank mechanism, which seems derivative of coffee grinders of yore.

spring-loaded

The cylindrical, linear shape of the spring-loaded pepper mill is suggestive of modern design, as are its industrial materials, which are semi-transparent and polished to a smooth finish ((Rodgers & Milton, 2011). The way its mechanisms are exposed (the spring, the peppercorn storage chamber) make it seem contoured, and along with its push-button implementation, reference the high-tech miniaturization of the 1970s and early 1980s (Rodgers & Milton, 2011). Yet its sleek size and fresh amber color give the mill a sophisticated affect.

FUNCTIONAL ANALYSIS

	hand-cranked		spring-loaded
HOW DOES IT WORK?	Grasp crank arm/handle and rotate	VS	Depress plunger
IS IT EASY AND/OR OBVIOUS TO USE?	Yes, its operation is apparent in its design	VS	Somewhat; its design doesn't immediately suggest a pepper mill
IS THERE A METAPHOR FOR ITS USE?	Manual coffee grinder	VS	Push button, possibly a syringe
WHAT IS ITS CAPACITY?	Holds about 3 tablespoons of peppercorns	VS	Holds about 1.5 tablespoons of peppercorns
DOES IT PROVIDE OPTIONS FOR ITS USE?	Knob on top can be tightened for a finer grind	VS	None apparent
WHAT ARE ITS SHORTCOMINGS?	Discharges ground pepper when not in use; frequently jams	VS	needs refilled often; permits exposure to light
WHAT ARE ITS STRENGTHS?	Leverage of crank reduces amount of effort needed to grind	VS	Amount of peppercorns remaining visible in body; easily portable

hand-cranked

The operation of the this classic pepper mill is obvious at first glance. Using a crank matches my mental model of how grinders work, as well as visually references the manual coffee grinders that influenced the design of burr-style mills like this (Wikipedia 2012). The crank also allows for a full, smooth movement when grinding. Having control over the coarseness of the grind is useful, but making adjustments seems to trigger jams in the grinding mechanism. Also, the finer grinds are prone to unprovoked discharge from the mill.

spring-loaded

The push-button movement of the spring-loaded pepper mill makes dispensing pepper fun. The rapid, nimble squeezing movements are efficient for seasoning food, and give users a sense of precision: each plunge of the button is a pre-measured amount. The transparency of the holding chamber makes it easy to see when it's time for a refill. Although due its small size, refills happen often. That inconvenience is offset by the mill's portability -- its perfect for carrying alongside a bowl or soup.

CONCLUSION

aesthetic preference

I find the form of both pepper mills attractive -- for different reasons. The hand-cranked mill is appealing because its stolid structure and its traditional appearance give an impression of long-lasting craftsmanship. I also appreciate that its made with wood. Natural materials help me feel more present in my surroundings. The spring-loaded pump mill is whimsical and contemporary, but its slight size almost makes it seem like a novelty item. Yet I like how its industrial design keeps my home feeling up-to-date. Because their forms are so distinct from one another, the pepper mills are able to take on separate roles in my kitchen.

suggested iterations

The most crucial redesign I recommend addresses refilling the pepper mills with peppercorns, a bothersome routine that often ends in a mess. A design that allows for a larger space in the chamber of the mill would reduce the frequency of need for refills. Another potential solution is to develop a design that is focused on streamlining the refill process.

One way to do that is to situate a built-in, pull-out funnel in the storage chamber. During refills it can corral the peppercorns into the storage chamber and then slide back into place, safely tucked away until the next time it is needed (delivering kitchens across America from the vexation of keeping track of a tiny funnel). Other solutions include changing the

functional preference

Considering ease-of-use, my observations indicate that the hand-crank pepper mill is the superior design. While the spring-loaded push mechanism is not difficult to maneuver, the crank mill's utility is more recognizable, and its handle provides leverage for prolonged grinding (think *tablespoon of cracked pepper*). Also, the crank mill allows the user to adjust the coarseness of the grind, although the loose flakes that escape willynilly following the use of finer grinds mitigate the advantage of that control. Lastly, the opacity of the crank's materials protects its peppercorns from exposure to light, which can compromise the integrity of the spice (Montagne, 1938/2001).

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