

# The Easyglide Razor

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By Mattie Sadler

Kankakee Valley High School | Engineering Design and Development

# The problem or challenge

A household problem the majority of the adult population shares in common is shaving. Improper shaving and unsafe razors have led to a high proportion of cuts, nicks, and razorburn on a daily basis. Common disposable razors are not enough anymore environmentally or socially.

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# The Solution

I designed a new non-disposable razor will be designed to solve the modern consumer problem of an improved, safer razor.

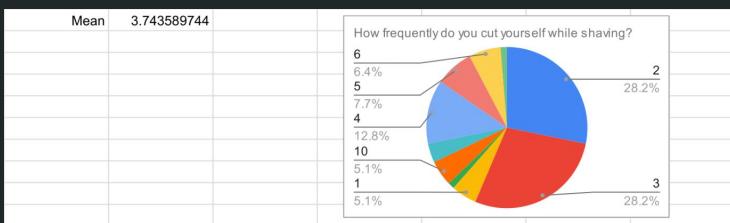
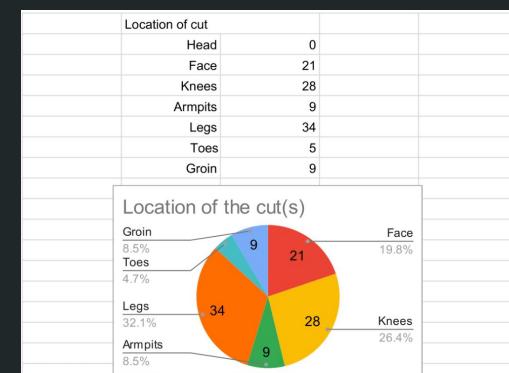
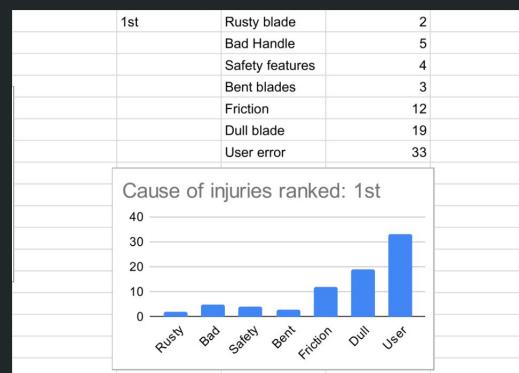
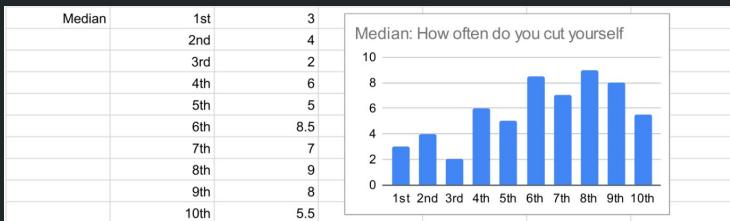
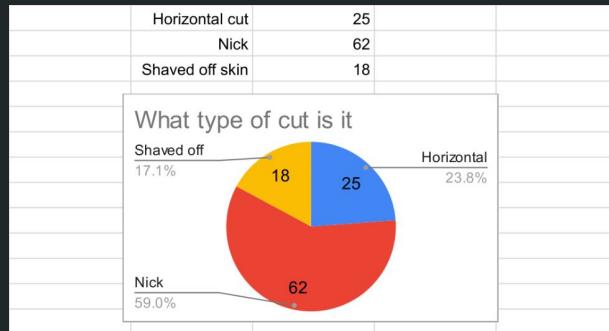
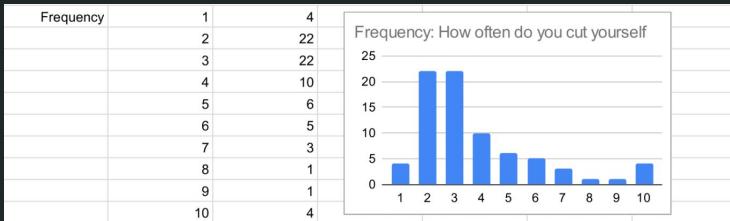
# Patent

# Research

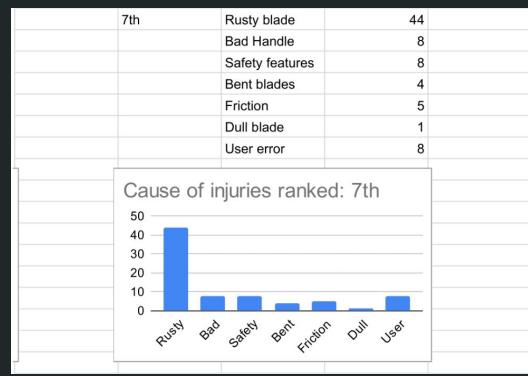
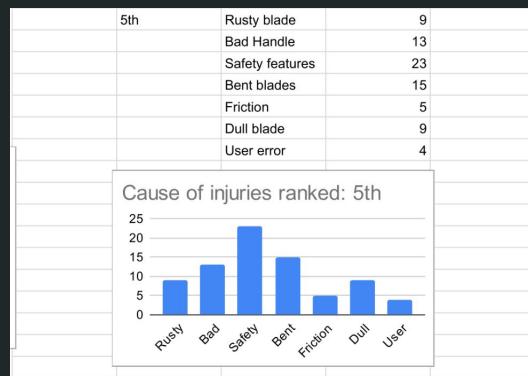
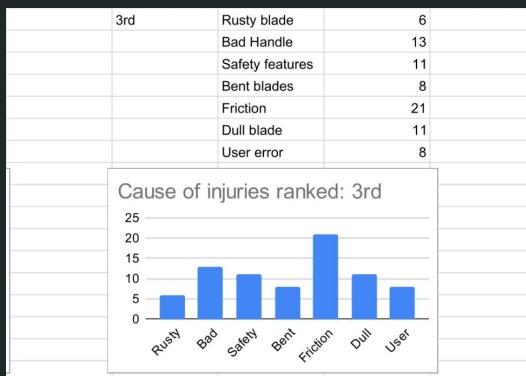
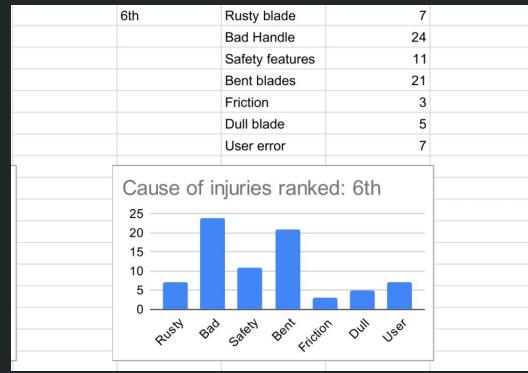
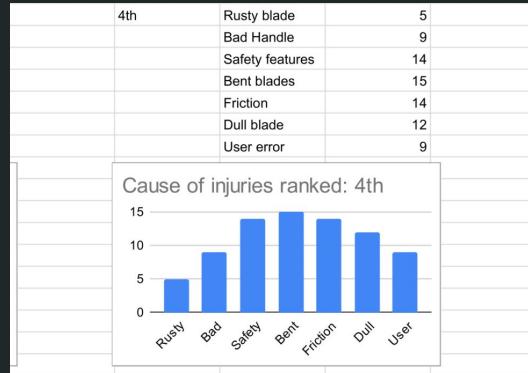
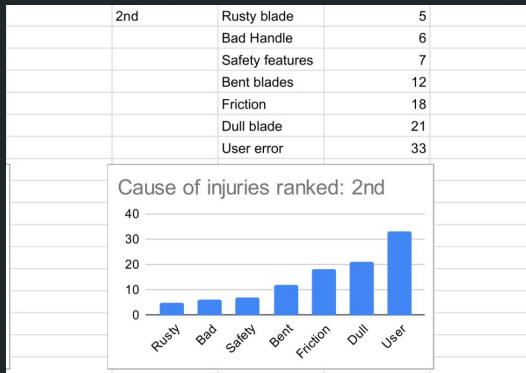
## Patent Research

Patent Research was conducted from 12/12/24 to 12/18/24. The possibility of ~~not~~ a built-in spray lubrication system was considered instead of a surfactant/lubricative strip as outlined in the SOW. The exfoliative effects of the razor element were considered as well. For ~~base~~ materials, general polymers, elastomers, ~~therm~~ thermoplastics, urethanes, olefins, rubbers, & metal / metal alloys were considered. The first use of a polymeric coating was with PTFE; a similar material may be used. Additionally, a break from this project was from 12/21/24 to 1/13/25.

# Survey Results



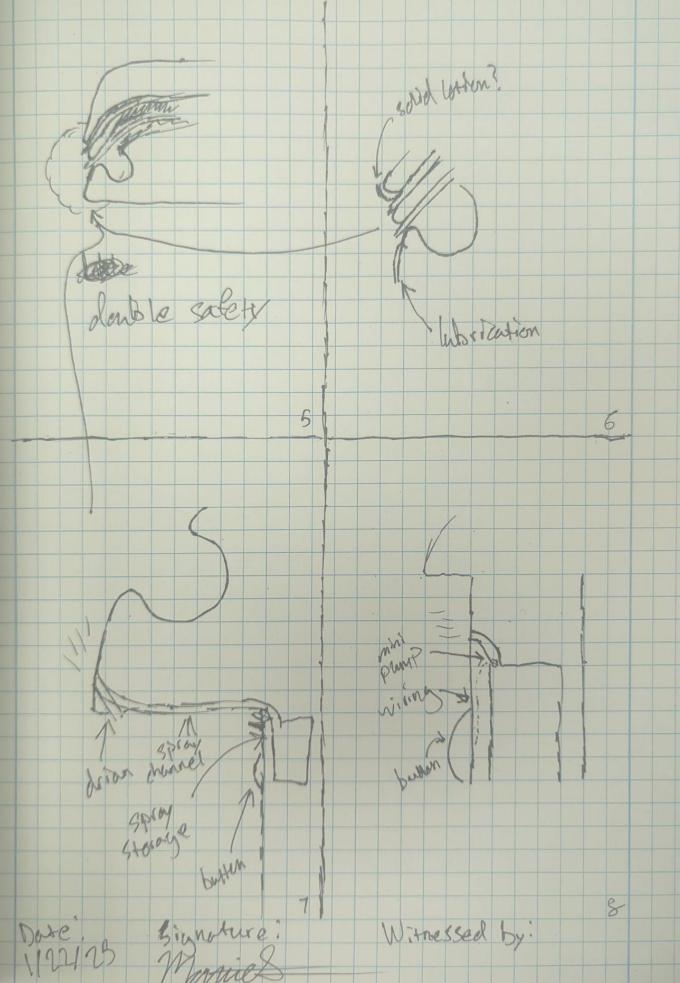
# Survey Results Cont.



# The Draft Drawings

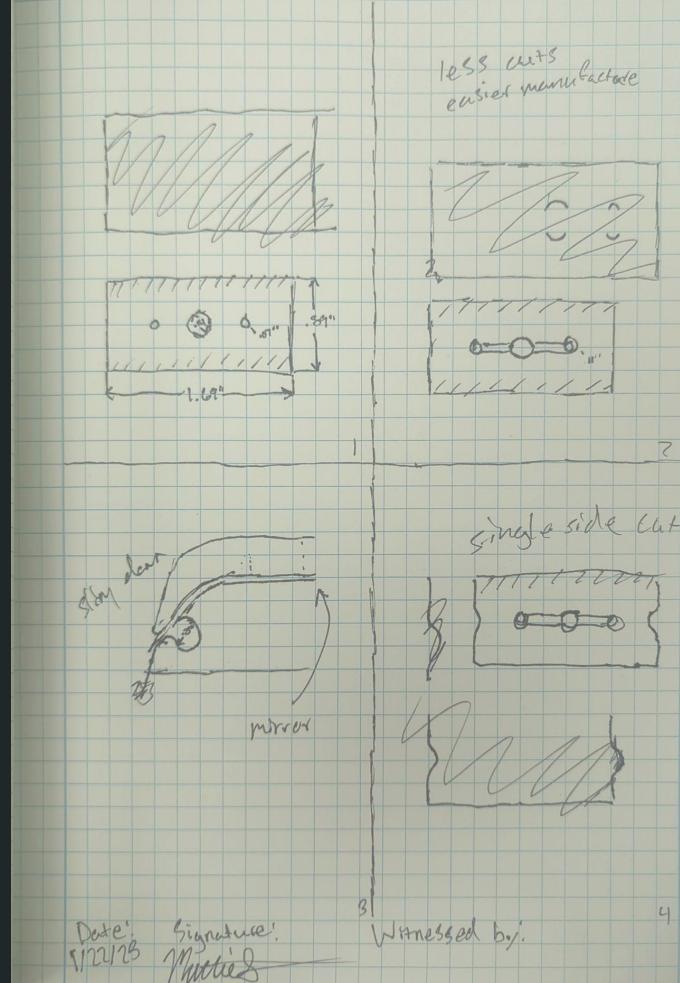
Draft Sketches Cont.

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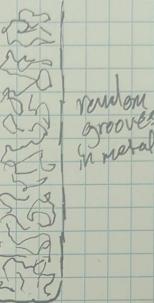
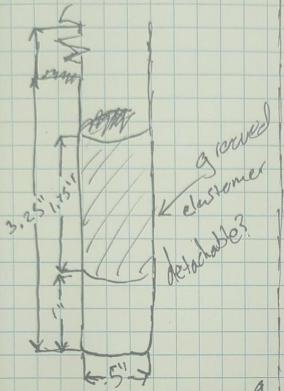


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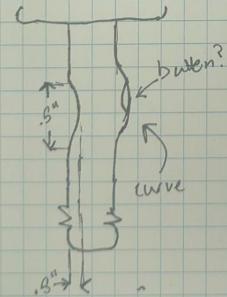
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## Draft Sketches Cont.



9 10



11 12  
expense right before blade



button

Dated:  
1/24/15

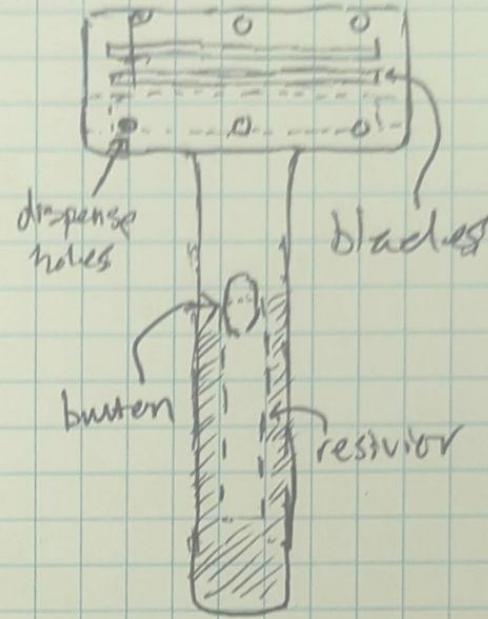
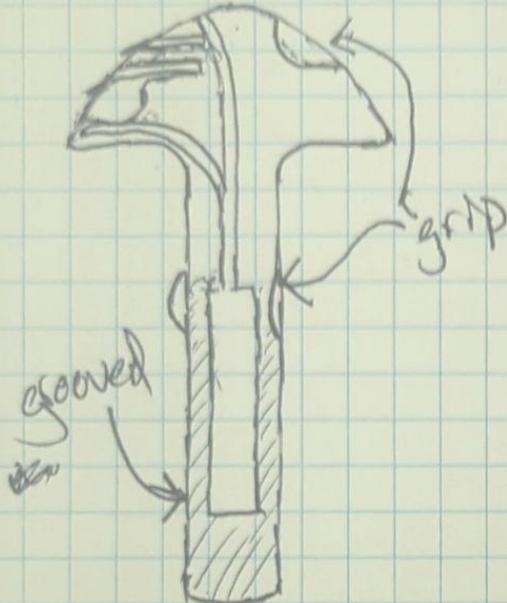
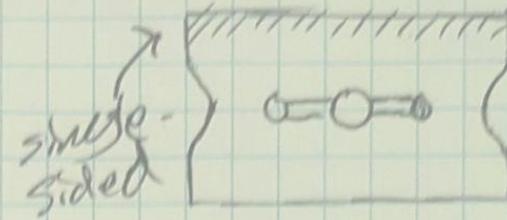
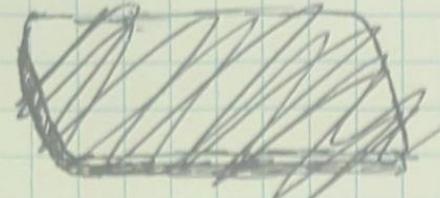
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Matthews

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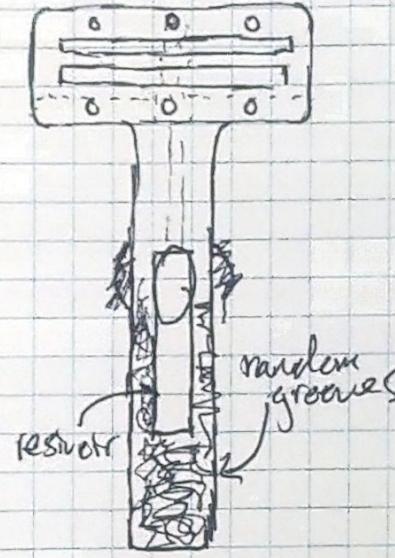
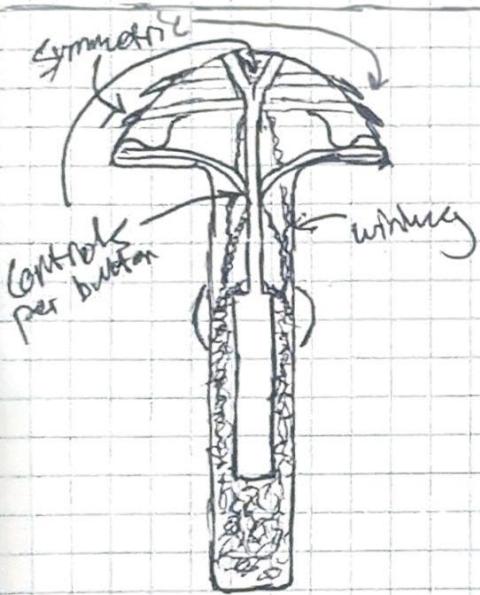
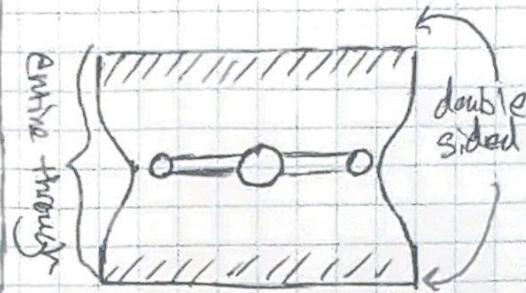
11 12

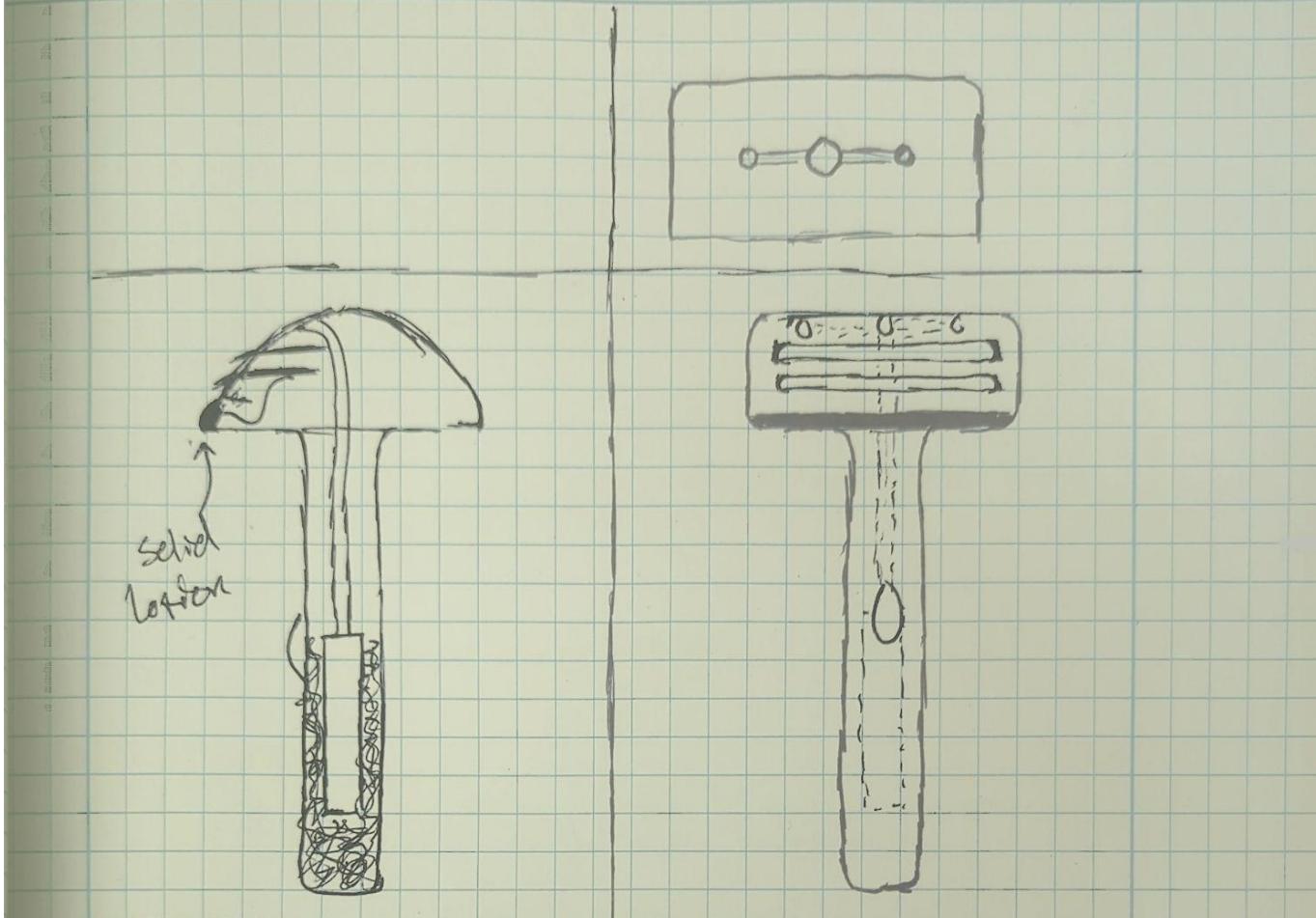
# The Final Drawings

1.



2





# The Decision Analysis Matrix

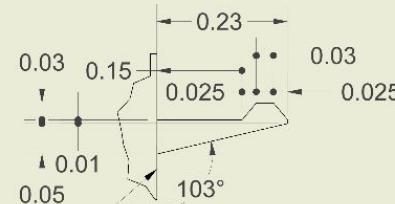
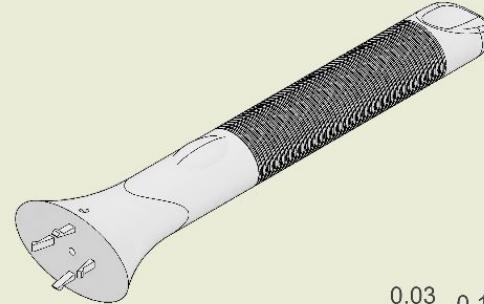
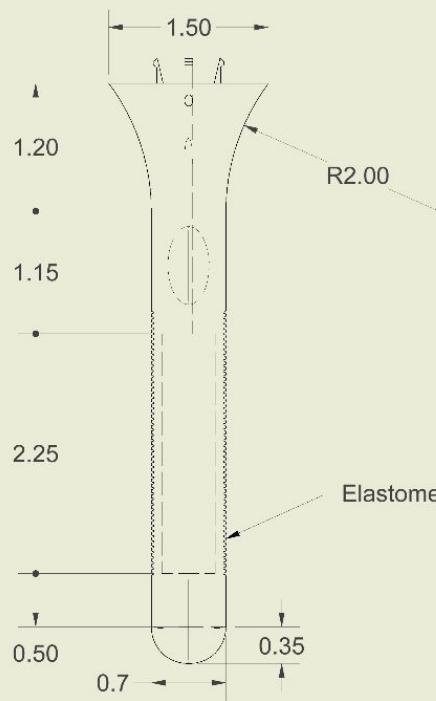
Similar Solution Matrix

*Mattie*

| Sources    | Existing Solution | 1 Safety Features | 2 Lubrication | 3 Friction | 4 Sharpness | 5 Durability | 6 Torsip | 7 Ergonomics | 8 Material Cost | 9 Machine Cost | 10 Convenience | 11 Durability | 12 | 13 | 14 | 15 | 16 | 17 Total |
|------------|-------------------|-------------------|---------------|------------|-------------|--------------|----------|--------------|-----------------|----------------|----------------|---------------|----|----|----|----|----|----------|
| Solution A | Sol. 1            | 4                 | 7             | 7          | 7           | 6            | 9        | 9            | 5               | 4              | 8              | 6             |    |    |    |    |    | 70       |
| Solution B | Sol. 2            | 3                 | 7             | 7          | 7           | 6            | 9        | 8            | 4               | 4              | 6              | 6             |    |    |    |    |    | 67       |
| Solution C | Sol. 3            | 5                 | 8             | 8          | 7           | 6            | 4        | 9            | 4               | 4              | 6              | 6             |    |    |    |    |    | 71       |
| Solution D | Aquajet           | 5                 | 4             | 9          | 6           | 4            | 5        | 4            | 3               | 2              | 2              | 4             |    |    |    |    |    | 53       |
| Solution E | Electric          | 8                 | 1             | 2          | 2           | 8            | 5        | 3            | 3               | 2              | 5              | 7             |    |    |    |    |    | 41       |
| Solution F | Conventional      | 6                 | 2             | 4          | 4           | 2            | 7        | 6            | 8               | 6              | 3              | 2             |    |    |    |    |    | 52       |
| Solution G | Straight          | 1                 | 2             | 8          | 1           | 1            | 1        | 2            | 1               | 4              | 7              | 9             |    |    |    |    |    | 57       |
| Solution H | Total             | 32                | 38            | 45         | 42          | 41           | 45       | 40           | 29              | 30             | 38             | 40            |    |    |    |    |    | 411      |
| Experts    |                   | 1                 | 2             | 3          | 4           | 5            | 6        | 7            | 8               | 9              | 10             | 11            | 12 | 13 | 14 | 15 | 16 | 17       |

*Mattie 10/10/25*

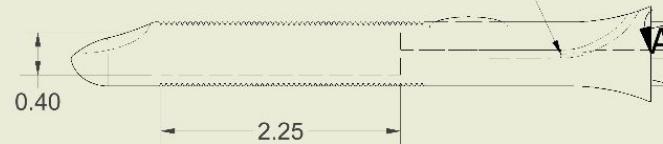
# The Prototype Drawings



**DETAIL A  
SCALE 4**

Cantilever Snap  
Fit Hook

Split Point



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Period: **EDD** Checked By:

Date: **5/14/2025**

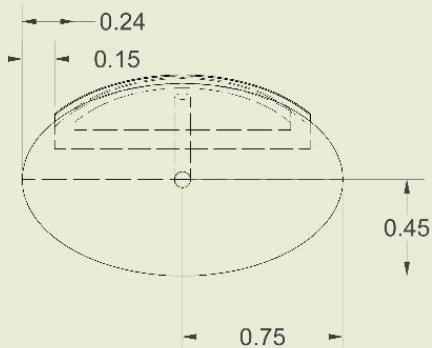
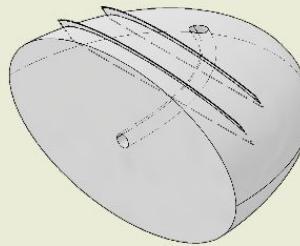
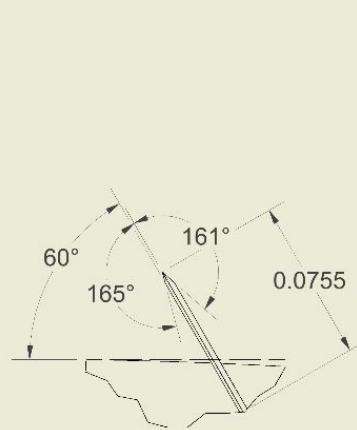
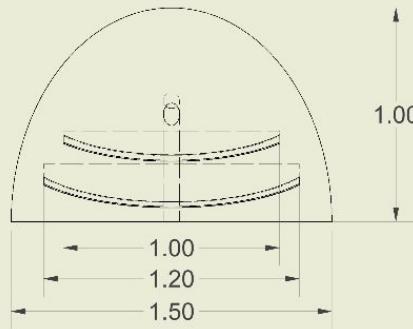
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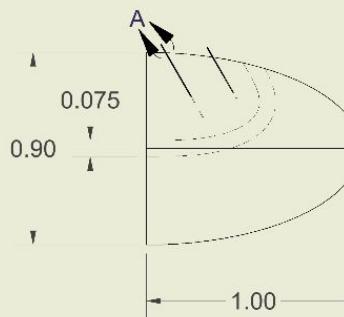
Sheet Number:

**PLTW**

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DETAIL A  
SCALE 15



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Period: **EDD**

Checked By:

Date: **5/13/2025**

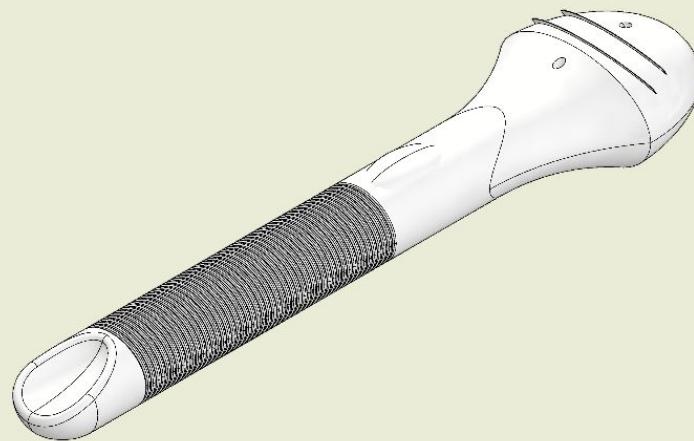
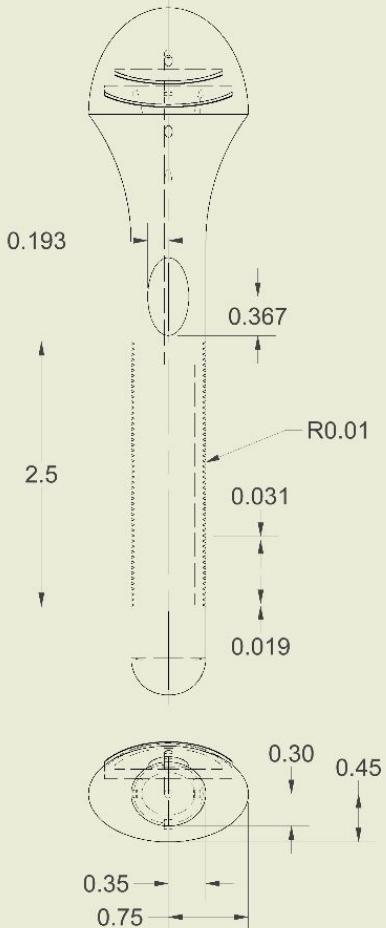
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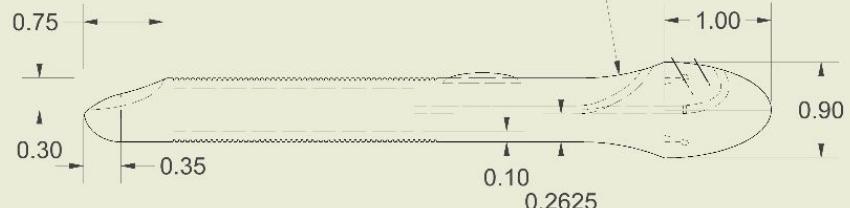
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Engineering**



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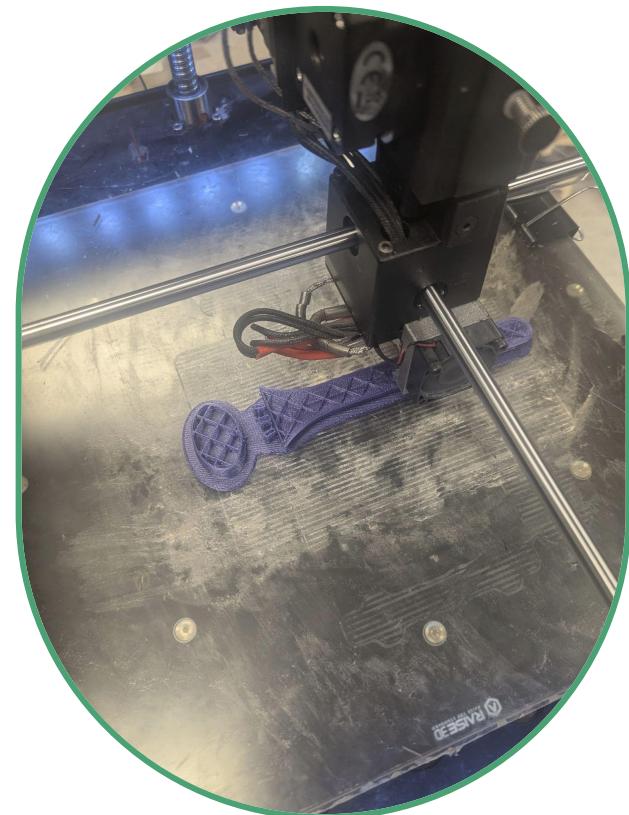
**Liquid Razor**

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**Kankakee Valley  
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# The Prototype

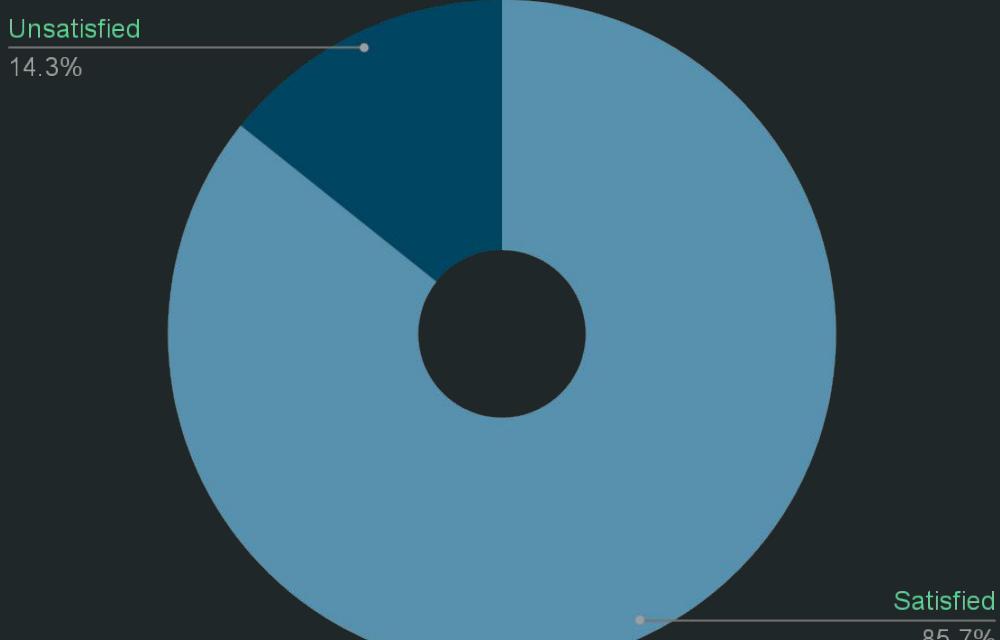


# The Prototype Cont.



# The Final Approval

## Ergonomic Satisfaction



# Areas For Improvement

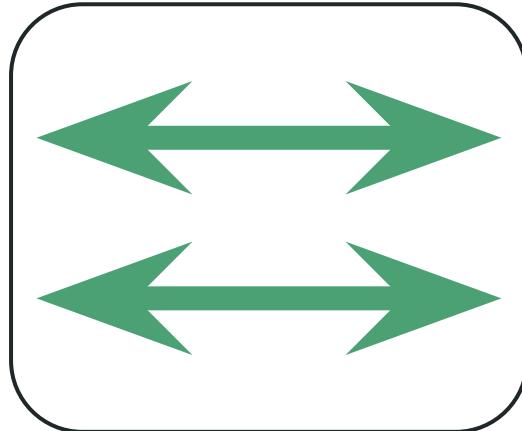
*Travel Case*



*Finger Groove*



*Wider Head*



# What will I do next?

What will you do with your findings next? How will you further your research/findings?



# Thank You!

Especially to Dr. Kaluf

# References

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