

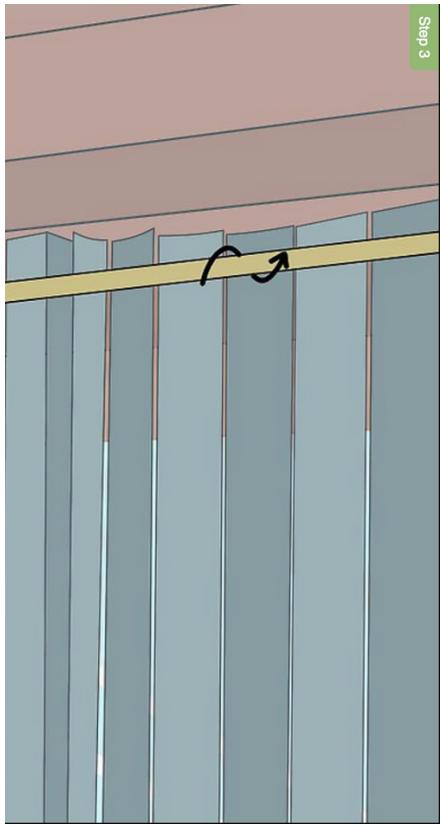


# MECHANICS BEHIND WINDOW BLINDS

Soojin | 11 Feb 2023

# How to Use

3) Twist the dangling wand to adjust the slats.

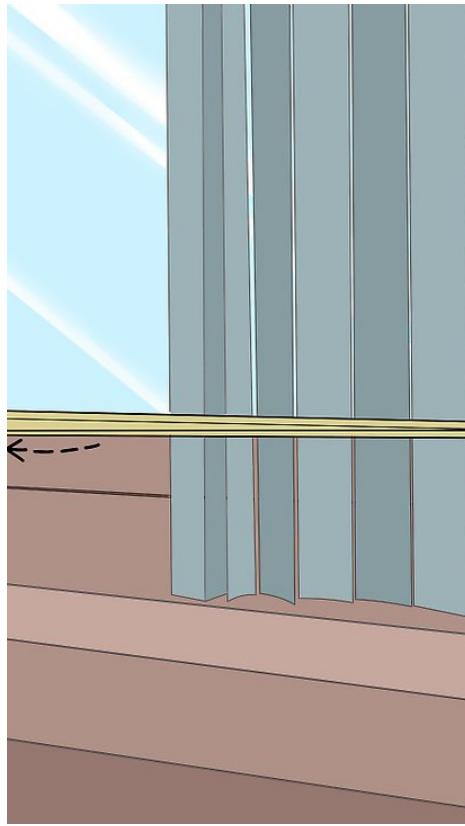


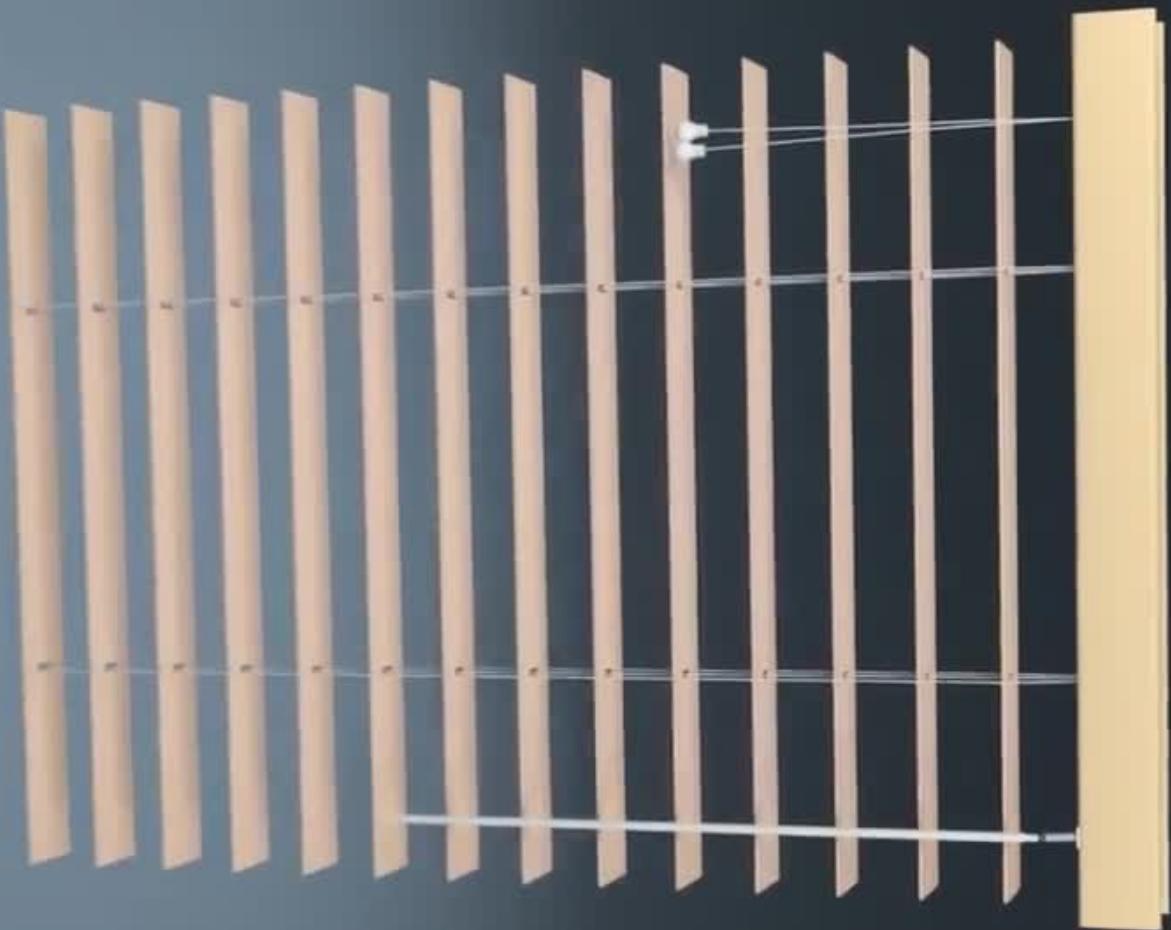
4) Pull with your best strength to break.

2) Pull the string down at a 45 degree angle to bring the blinds down.



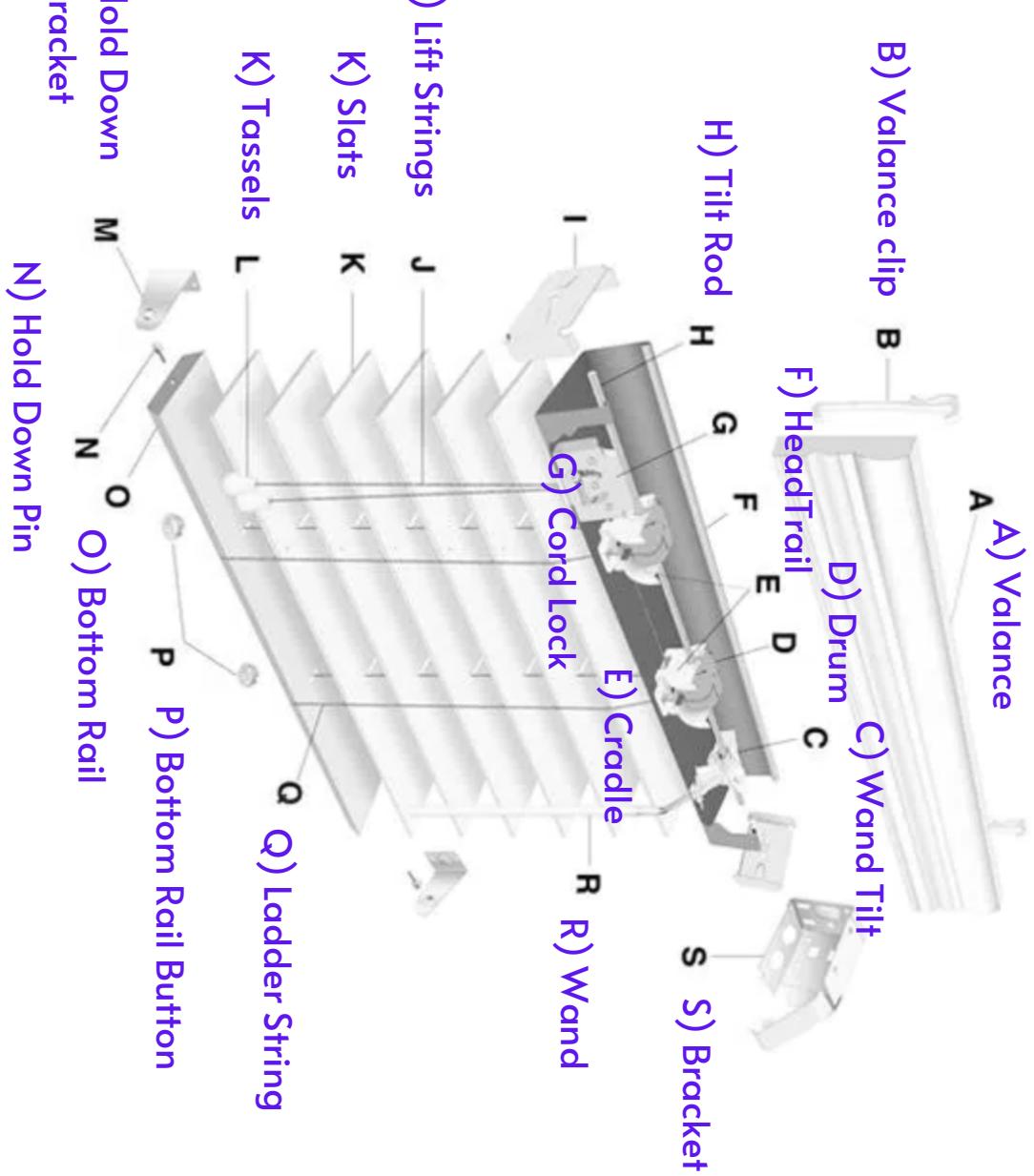
1) Pull the strings downward to lift up the blinds.





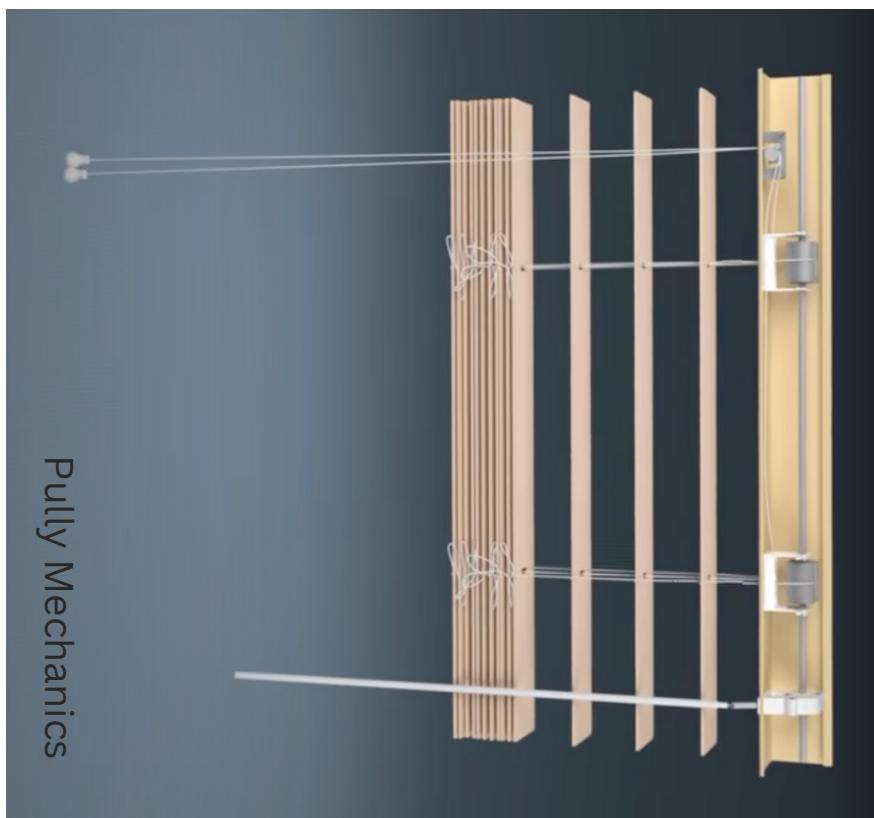
JaredOwen  
Animations

# COMPONENTS

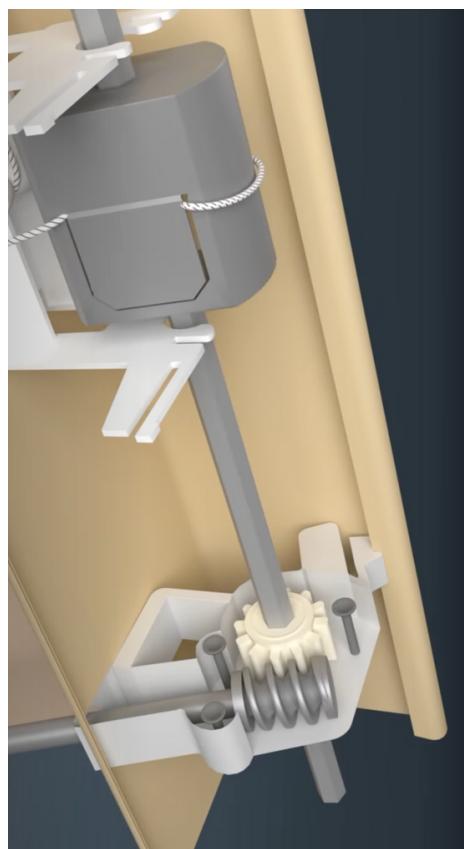


Visit (<https://fixmyblinds.com/pages/wood-faux-wood-venetian-blind-diagram>) for interactive visualization

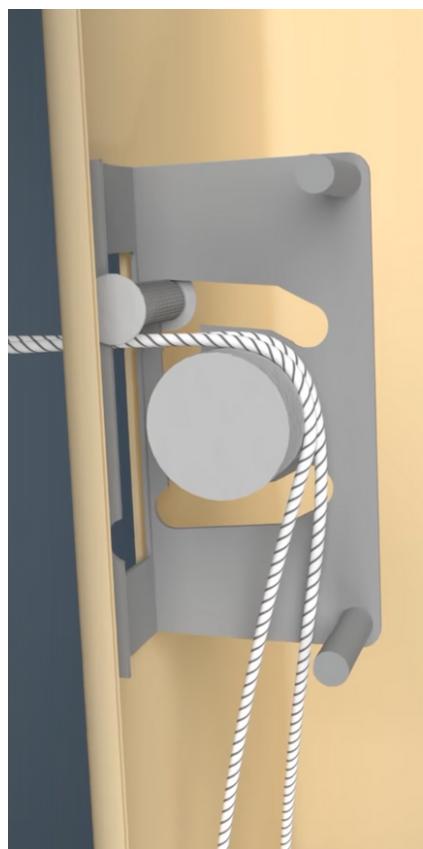
# MECHANISMS



Pully Mechanics



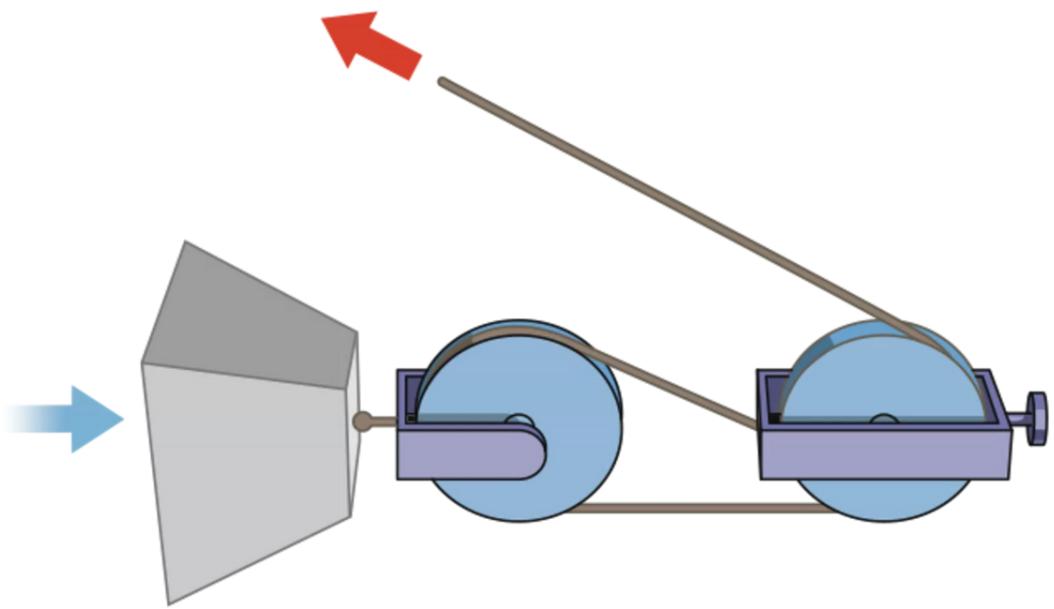
WandTilt Mechanism



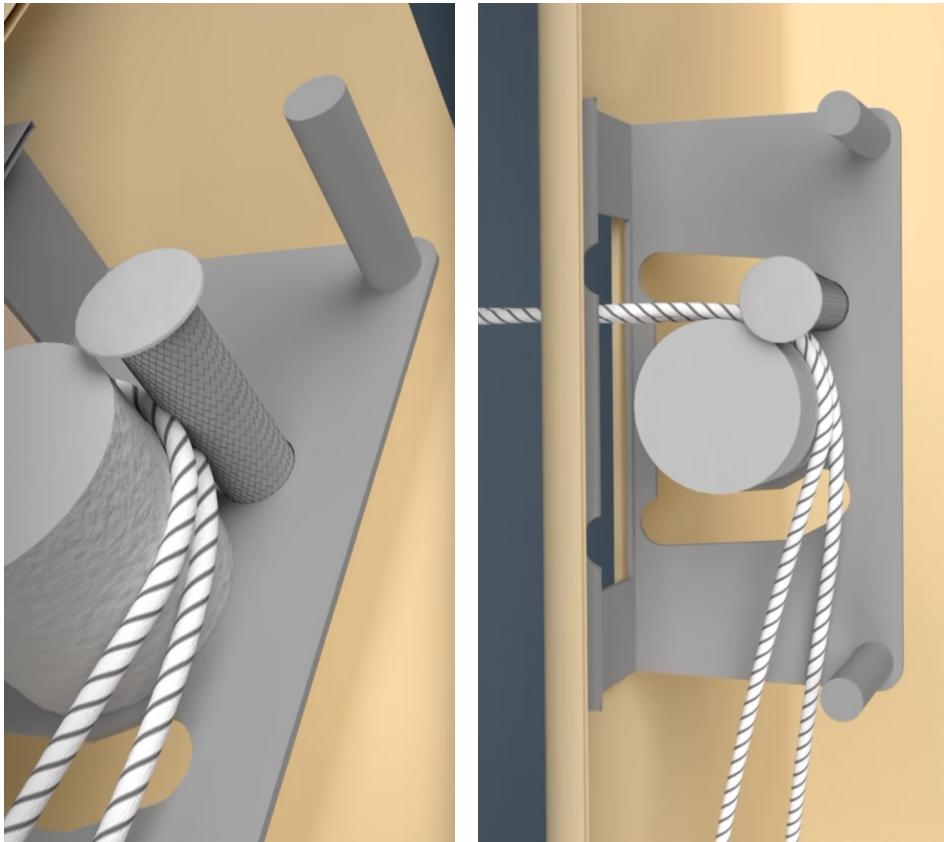
Cordlock Mechanism

# PULLY MECHANIC

- Used to lift or lower window blinds.
- The string of the blinds is attached to an axle wheel of a pulley.
- When the cord is pulled, the pulley rotates and lifts the blinds up.
- The direction of the effort applied (by pulling the cord) is opposite to the direction of the load movement (raising the blinds).
- This mechanism allows the blinds to be lifted with ease, even if they are heavy, as the pulley reduces the amount of force needed to lift them.

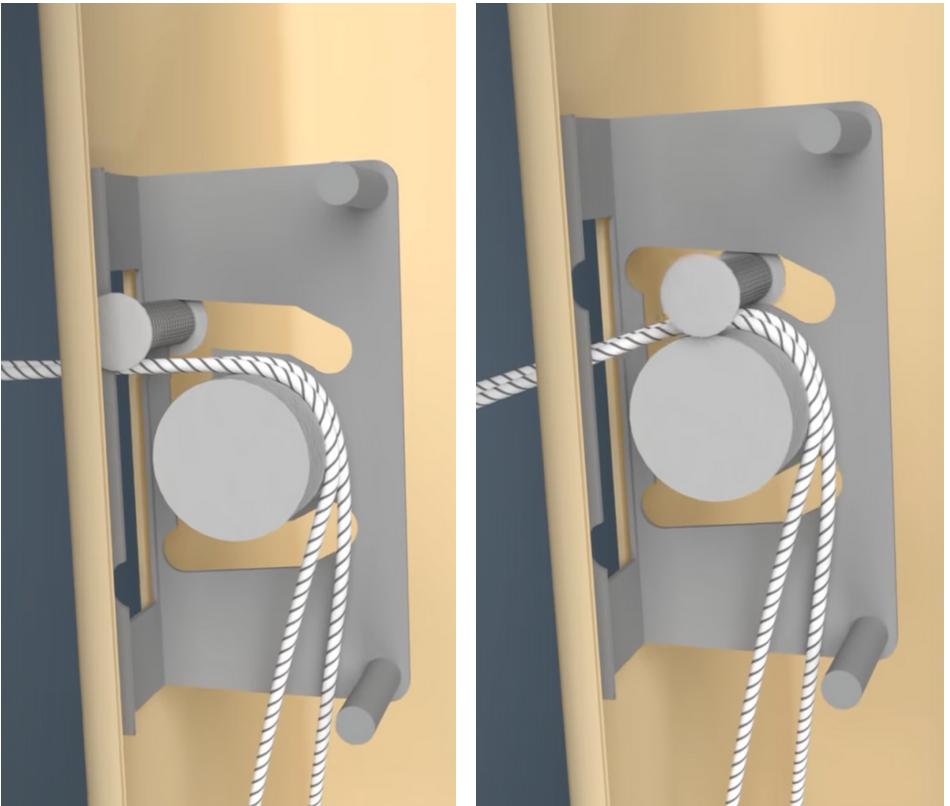


# CORDLOCK MECHANIC (LOCK & BLIND STAY LIFTED)



- Two rollers - the larger one is fixed and spins as the strings go over it, while the smaller one can slide up and down.
- When you're done lifting the blind, move the string away from it, then release it.
- The friction between the string and the roller causes the roller to slide up and pinch the string, thus holding the blind up.

# CORDLOCK MECHANIC [UNLOCK & BLIND COMES DOWN]



- To pull the blind down, center the string on the blind and pull it slightly.
- The roller will come down and release the string, allowing the blind to descend due to gravity.

fig.1

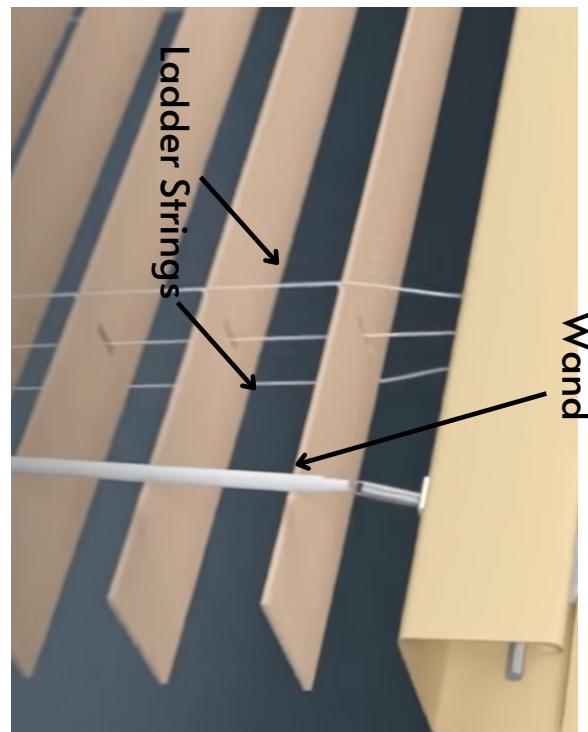


fig.3

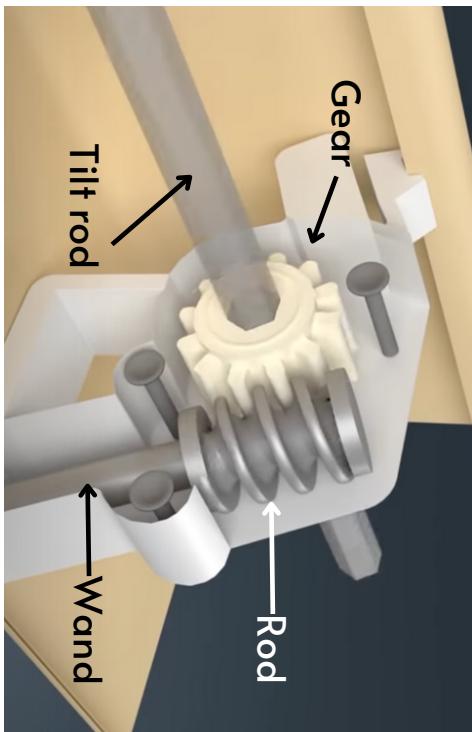
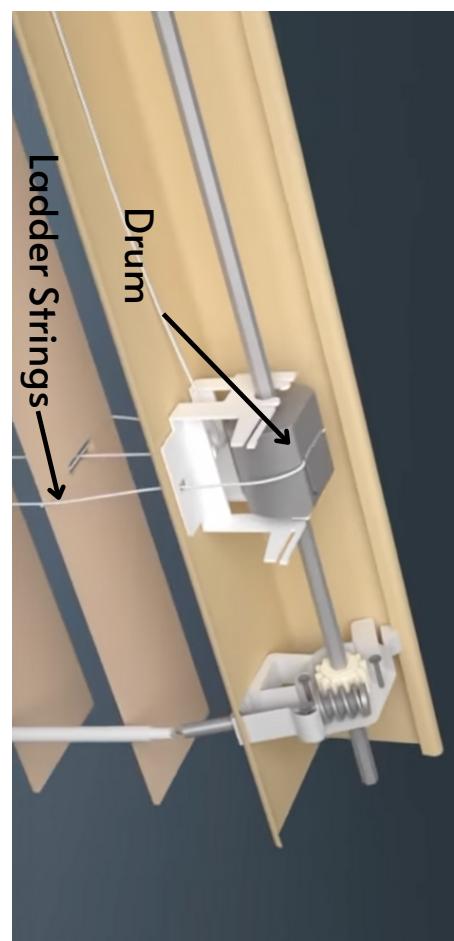


fig.2



## WAND TILT MECHANIC

- By turning the wand, the string ladders are pulled to tilt the blinds (fig.1)
- Wand turns => turns rod => turns center gear => turns tilt rod => tilt rod goes through two drums (fig.2)
- string ladders are attached to the drums => drum turns and pull the strings either way (fig.3)

# MY FAVORITE PART

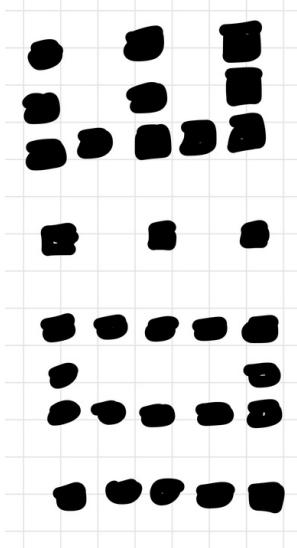
Wand spins -> turns rod -> gear rotates -> turns tilt rod ->  
turns drums -> pull strings ->tilt slats

This channeling of movement from the spin of wand  
to the tilt of all the slats is my favorite part of the  
mechanisms used for the window blinds

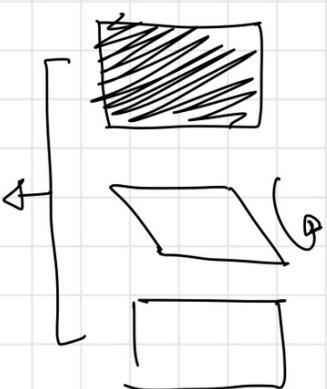


# INSPIRATION & IDEAS

Tilt slits to make shape e.g) time

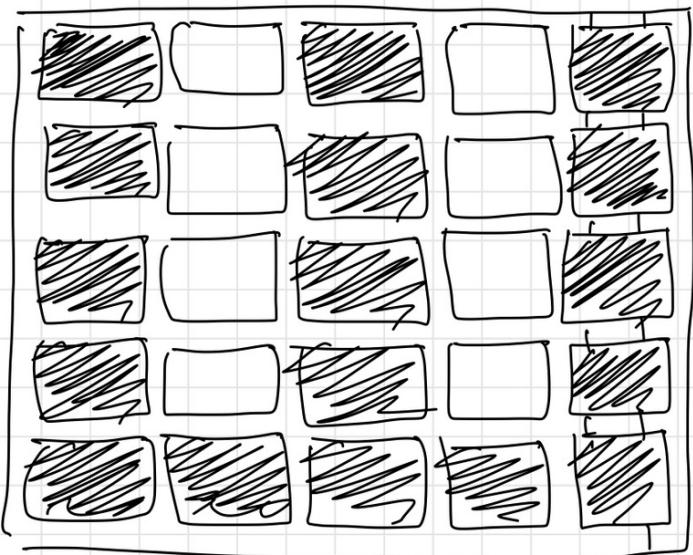


Tilted area becomes number, non tilted area becomes white background

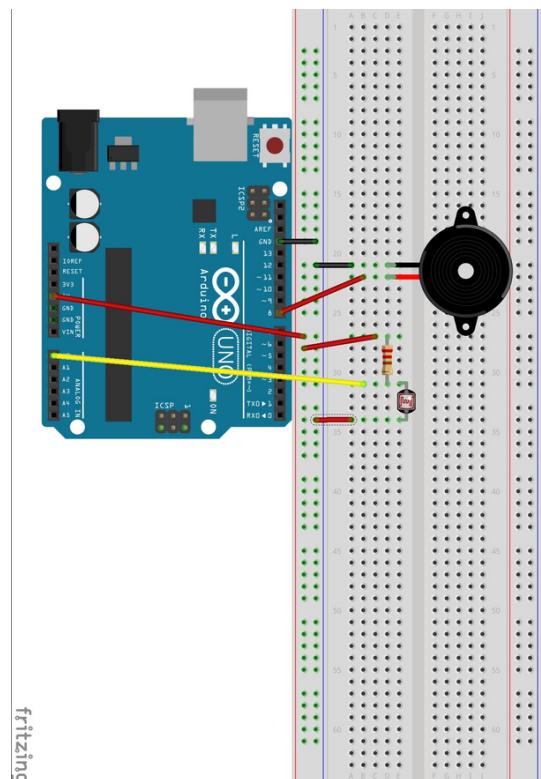


Individual card works like slats.  
Front and back has different colors

On the board, rotating slats are arranged in grid-format  
it works like pixel to create shape



# INSPIRATION & IDEAS



Use arduino photosensor to make blind adjust according to the brightness in the room





THANK YOU!

QUESTIONS? IDEAS?