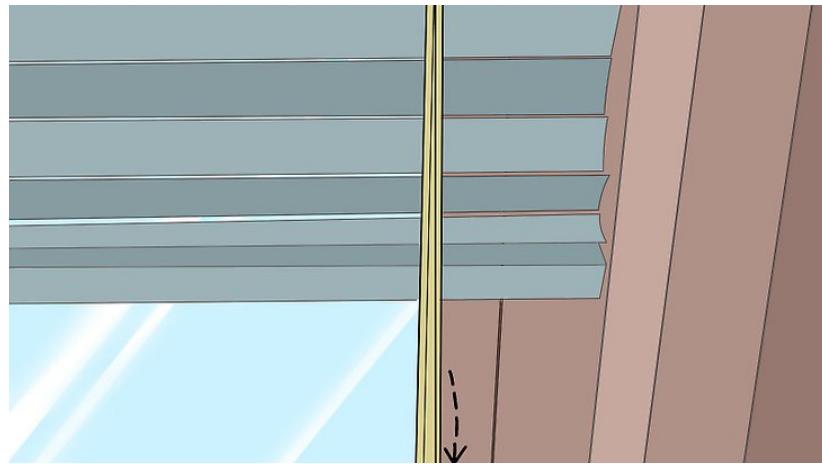




MECHANICS BEHIND WINDOW BLINDS

Soojin | 11 Feb 2023

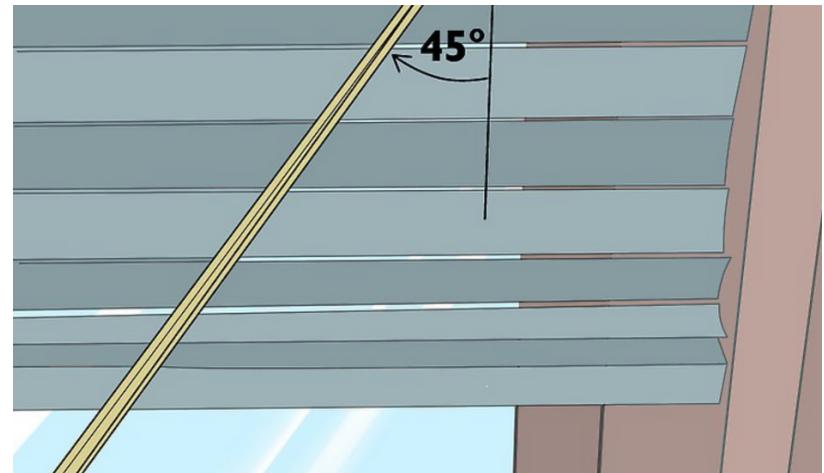
How to Use



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



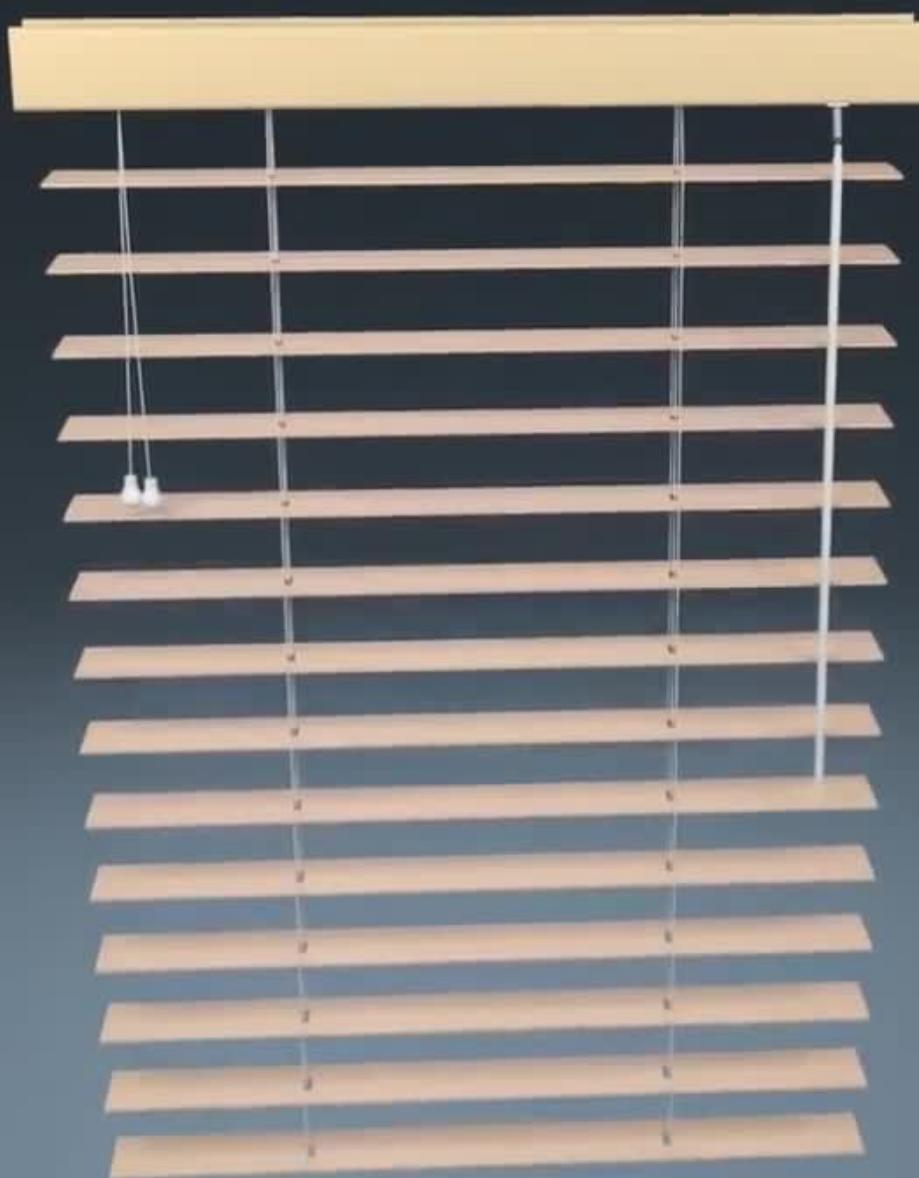
3) Twist the dangling wand to adjust the slats.



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



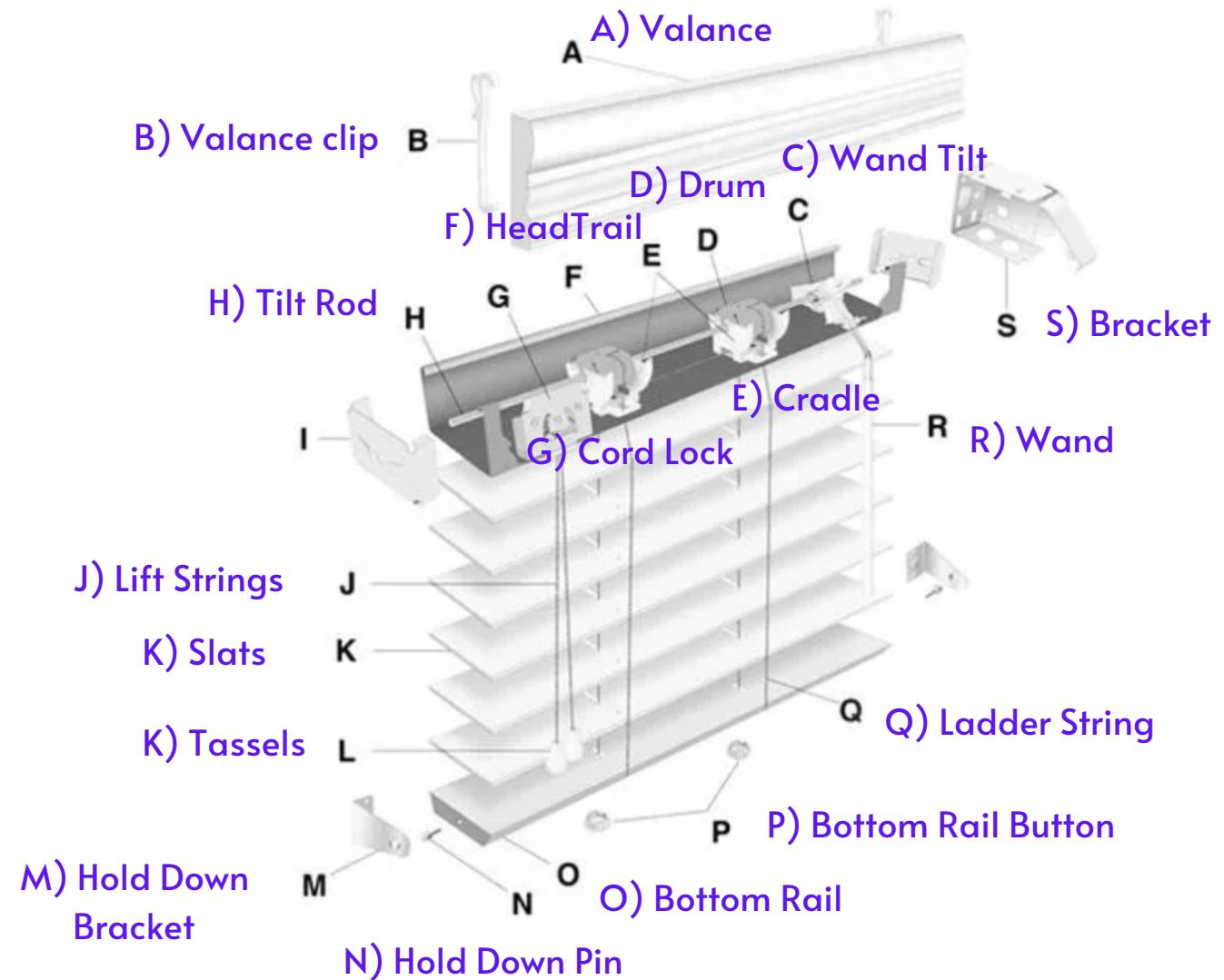
4) Pull with your best strength to break.



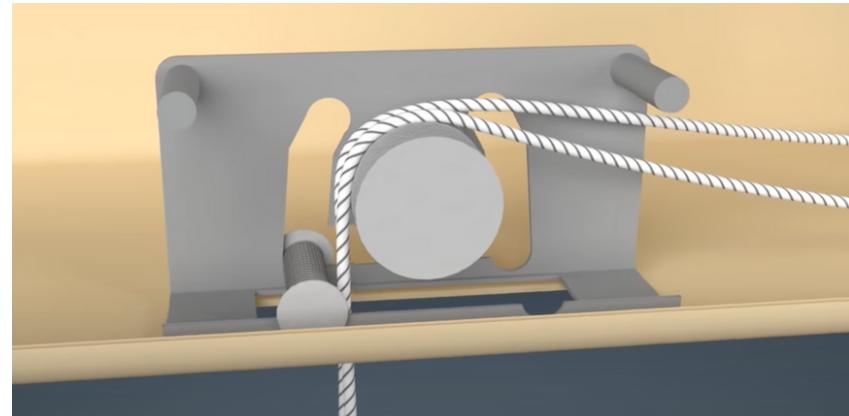
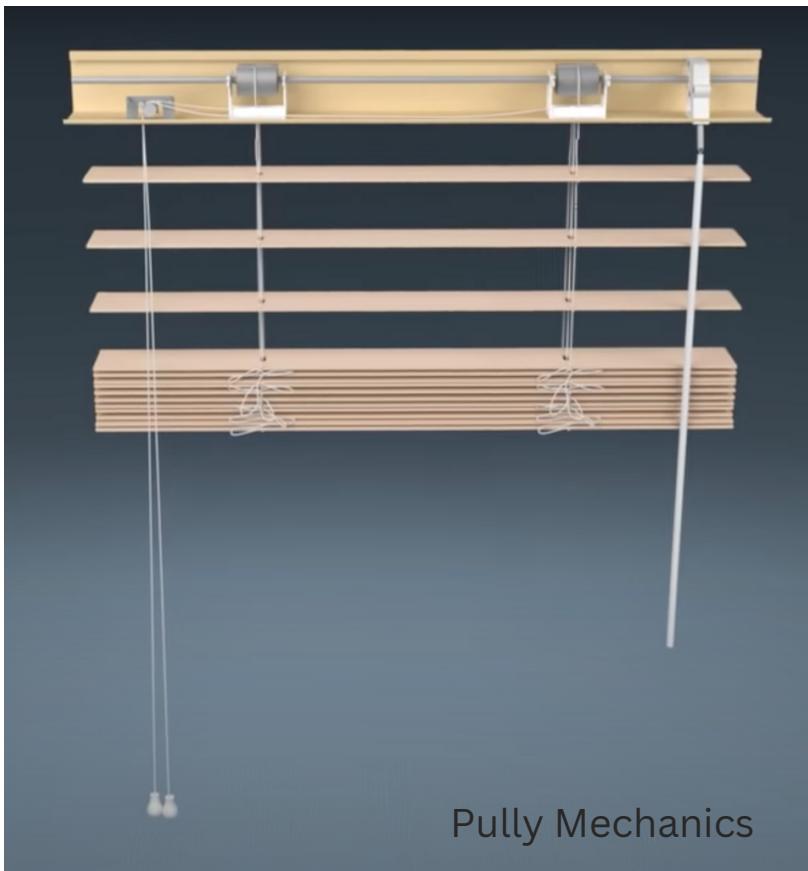
JaredOwen
Animations

COMPONENTS

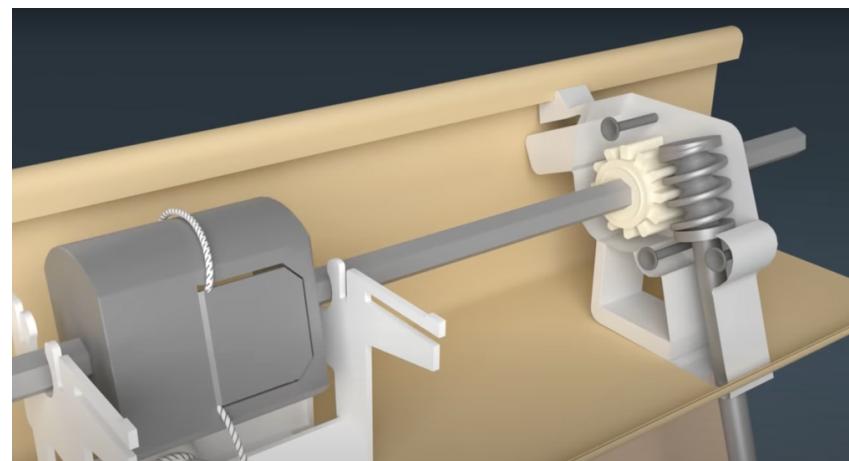
Visit (<https://fixmyblinds.com/pages/wood-faux-wood-venetian-blind-diagram>) for interactive visualization



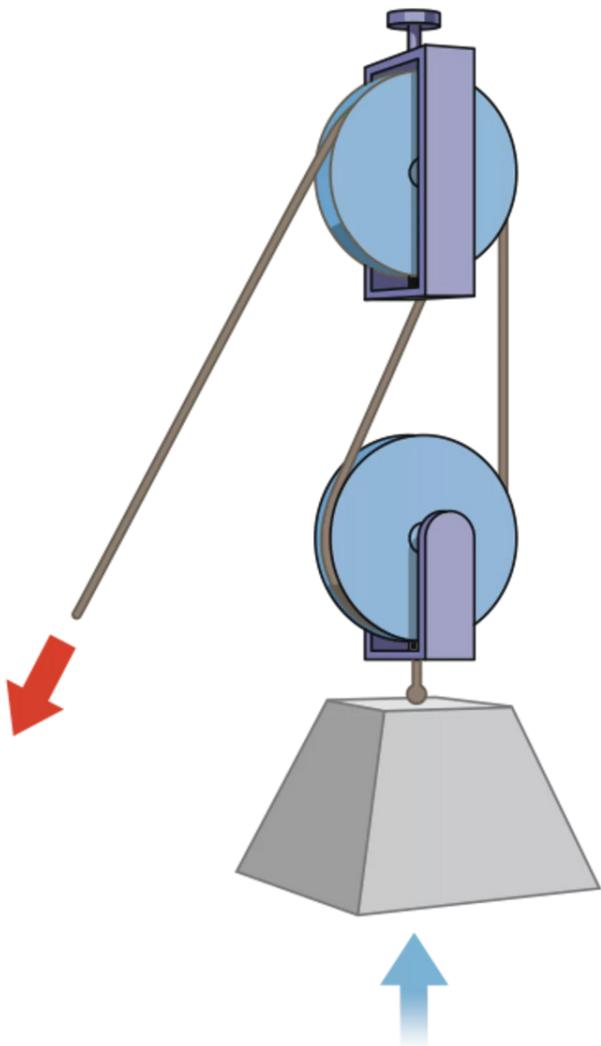
MECHANISMS



Cordlock Mechanism



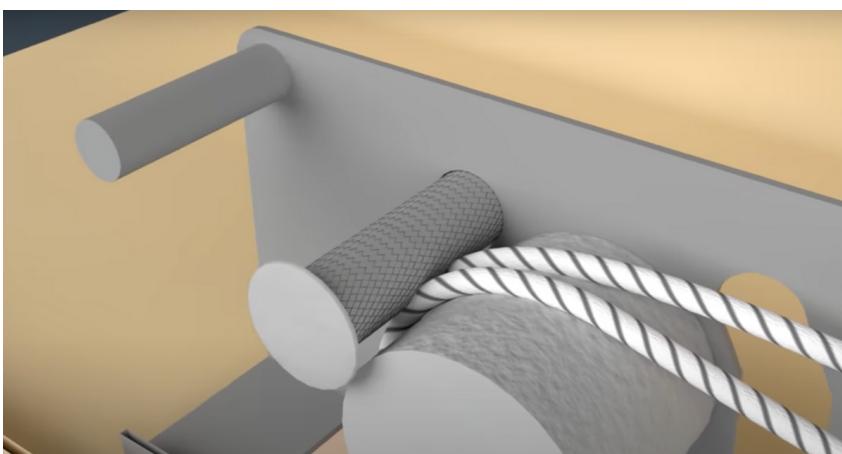
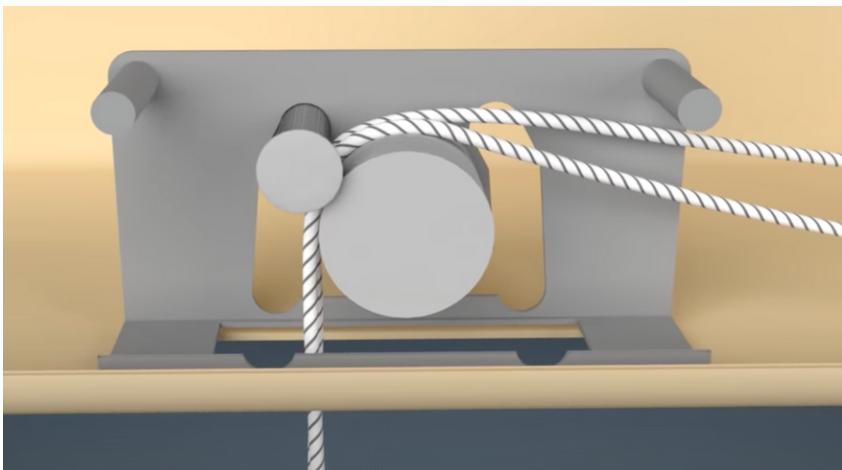
WandTilt Mechanism



PULLY MECHANIC

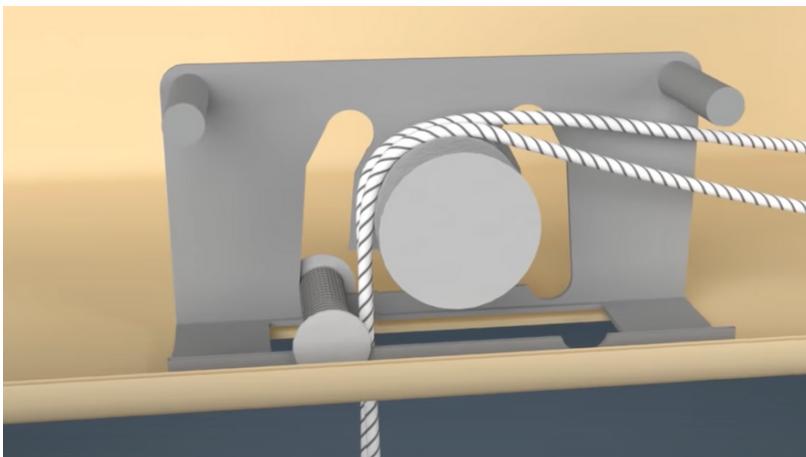
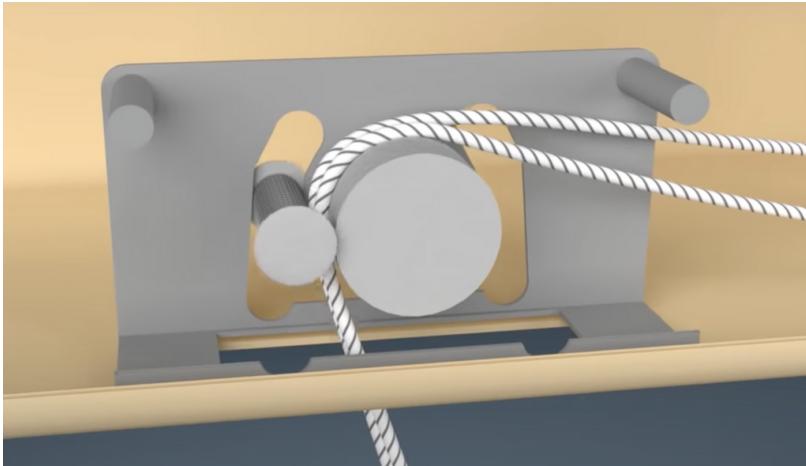
- Used to lift or lower window blinds.
- The string of the blinds is attached to an axle wheel of a pulley.
- When the cord is pulled, the pulley rotates and lifts the blinds up.
- The direction of the effort applied (by pulling the cord) is opposite to the direction of the load movement (raising the 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

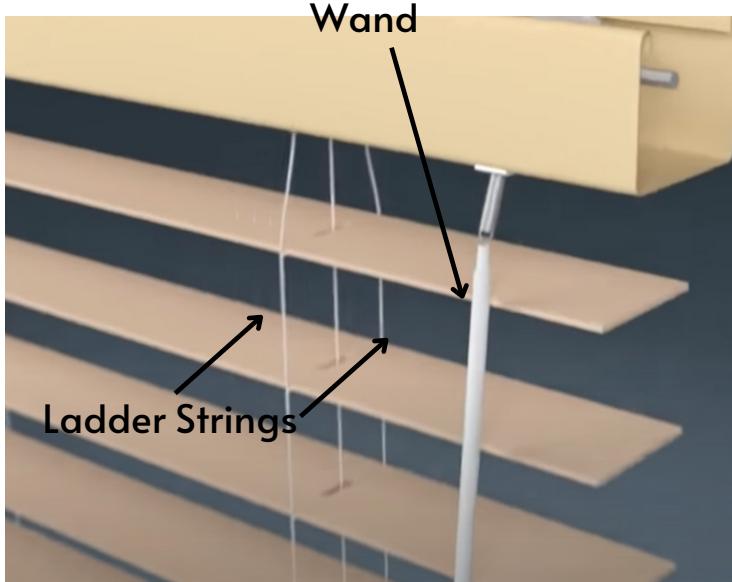
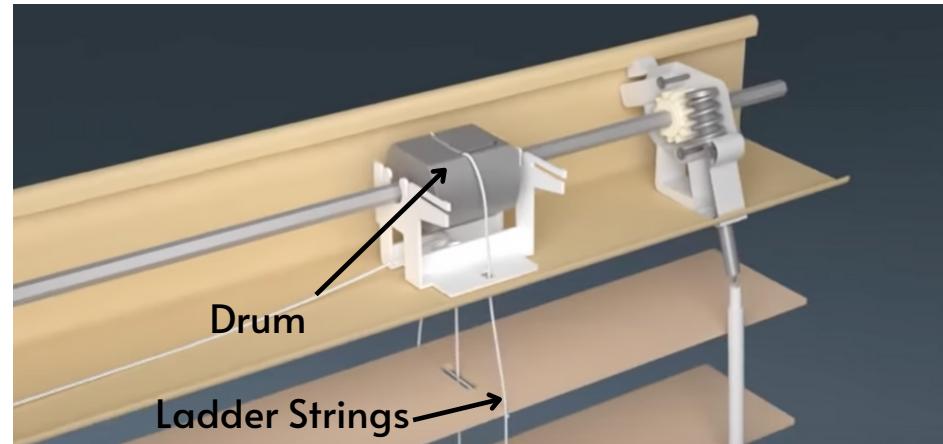


fig.2



WAND TILT MECHANIC

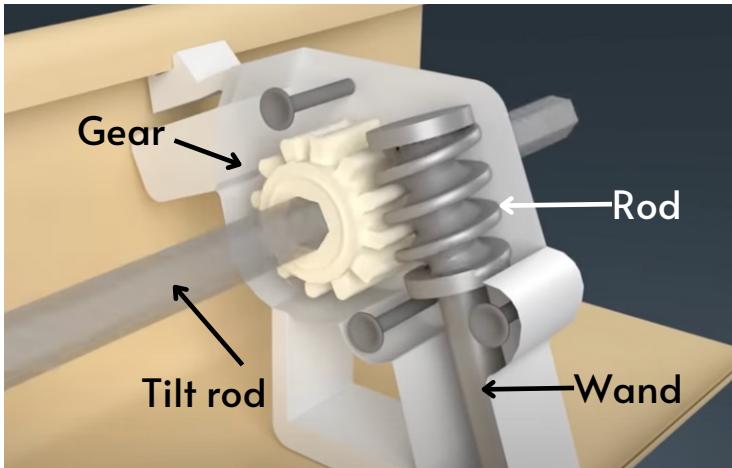
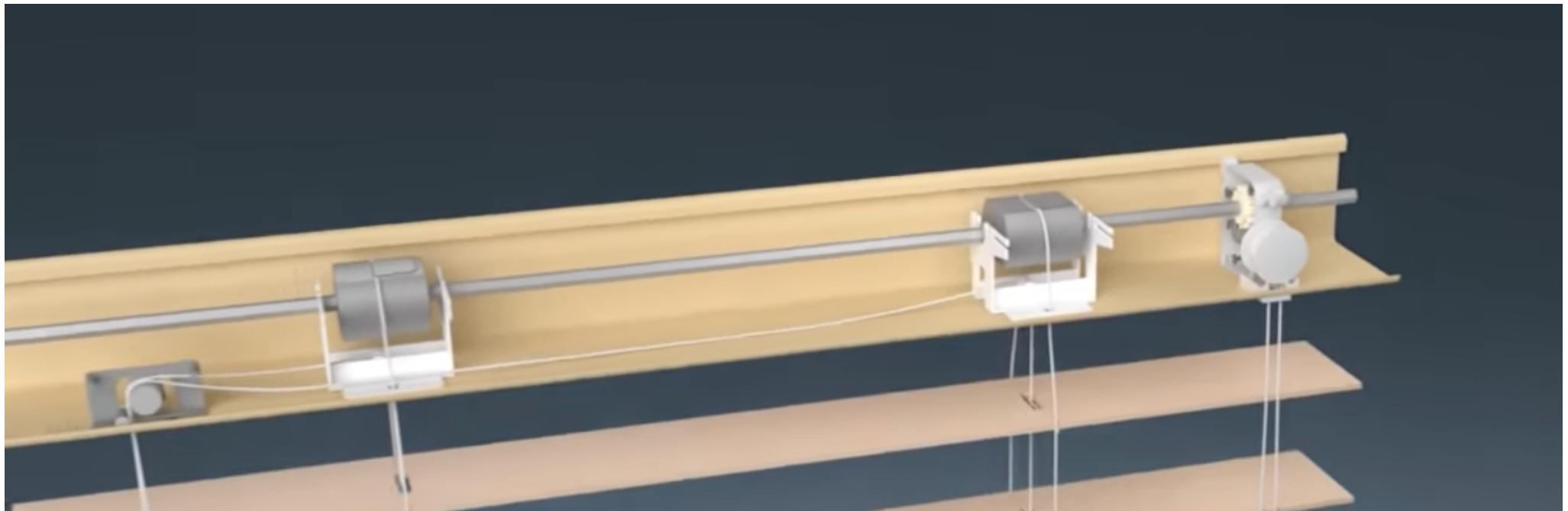


fig.3

- 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)

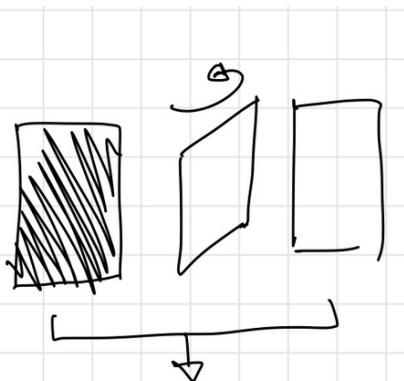
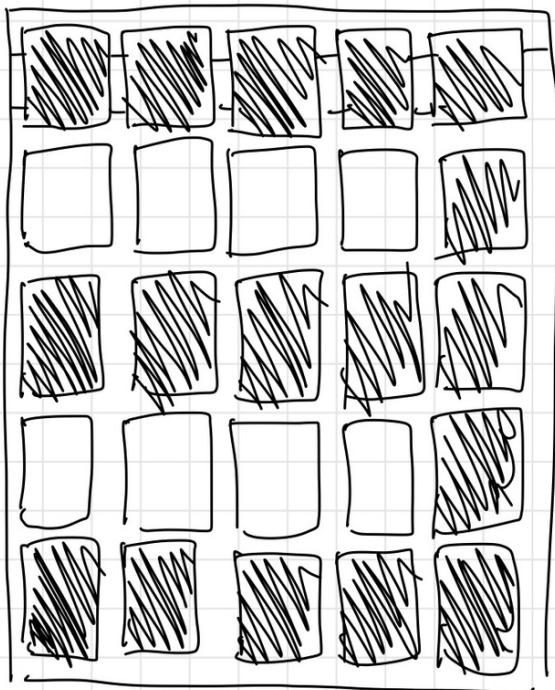


MY FAVORITE PART

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

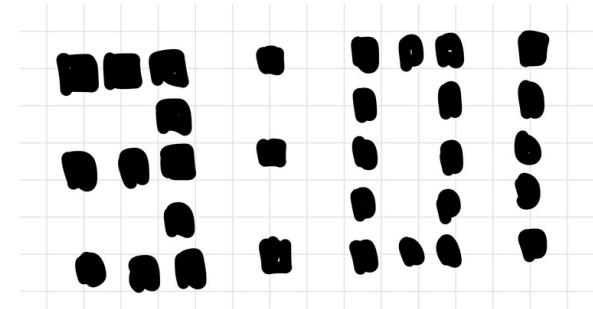
INSPIRATION & IDEAS



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

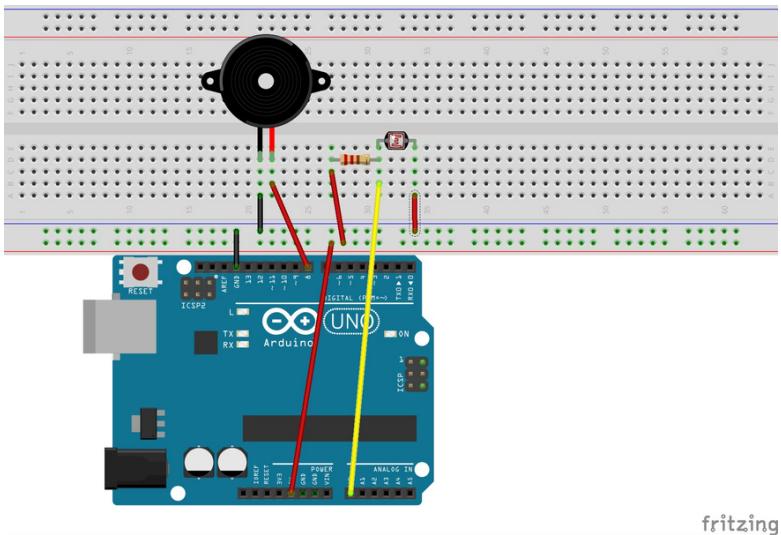
On the board, rotating slats are arranged in grid-format
it works like pixel to create shape

Tilt slits to make shape e.g) time



Tilted area becomes number, non tilted
area becomes white background

INSPIRATION & IDEAS



fritzing

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





THANK YOU!
QUESTIONS? IDEAS?