

# HUMAN ERROR

Gabor Oplatka

Zurich/Switzerland

10. OITAF Congress  
RIO DE JANEIRO 2011

# HUMAN ERROR

- ERROR IN THINKING

# NEGLIGENCE

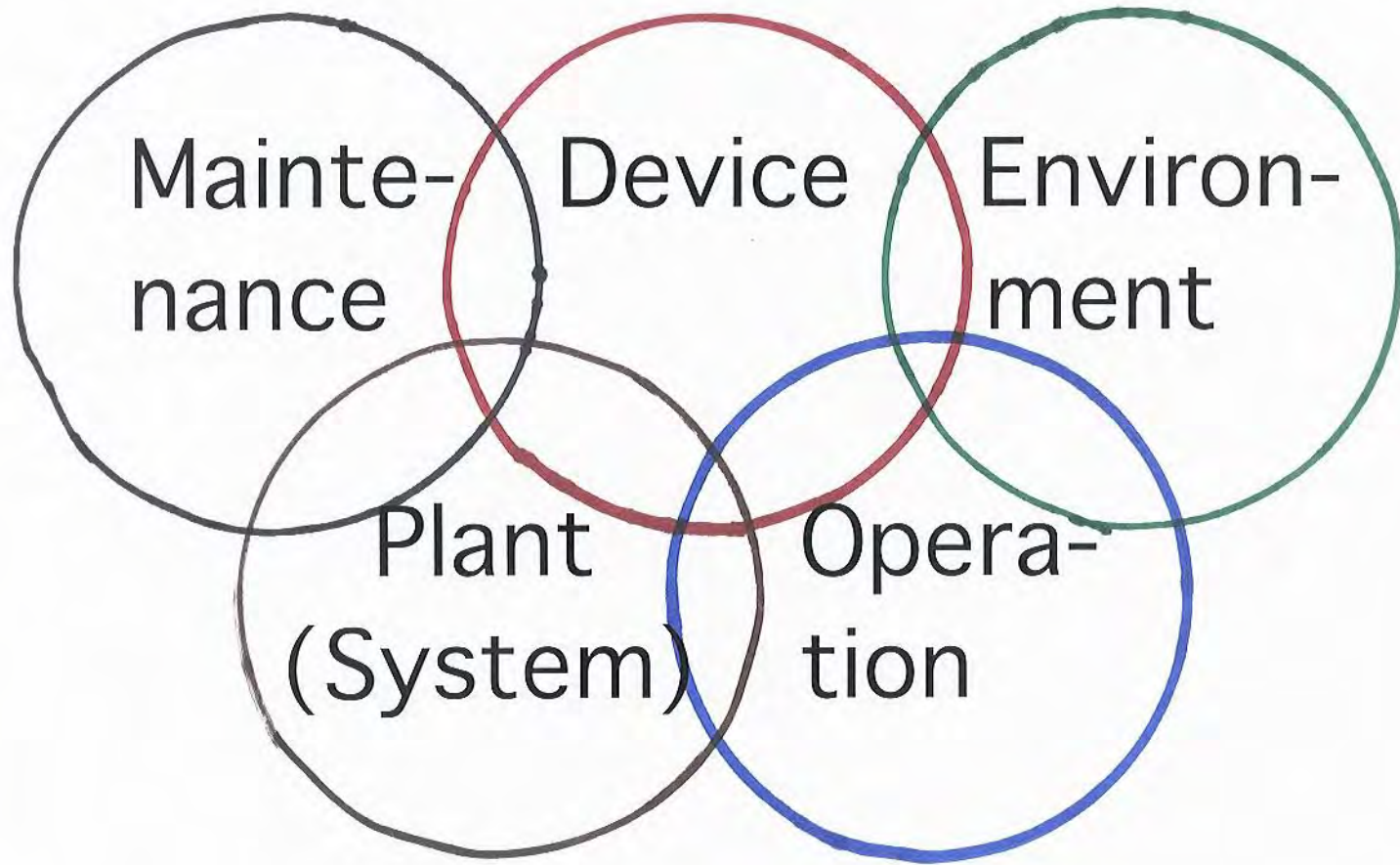
- SLOPPY JOB
- CARELESSNESS











Mainte-  
nance

Device

Environ-  
ment

Plant  
(System)

Opera-  
tion



W: Müller



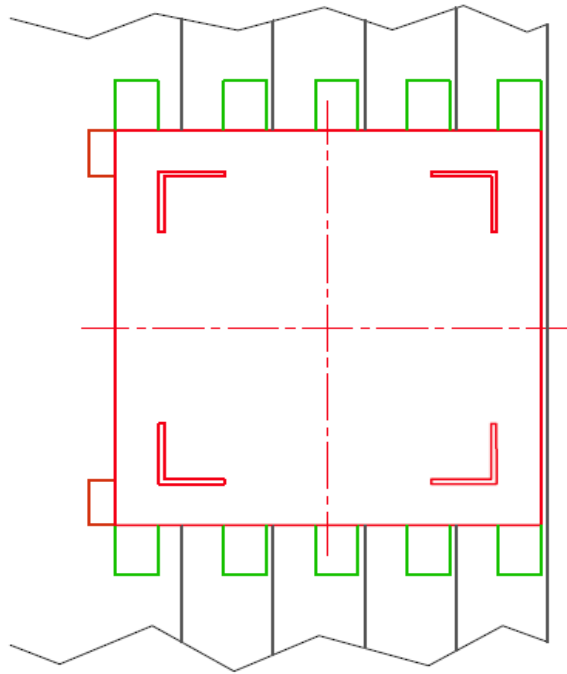
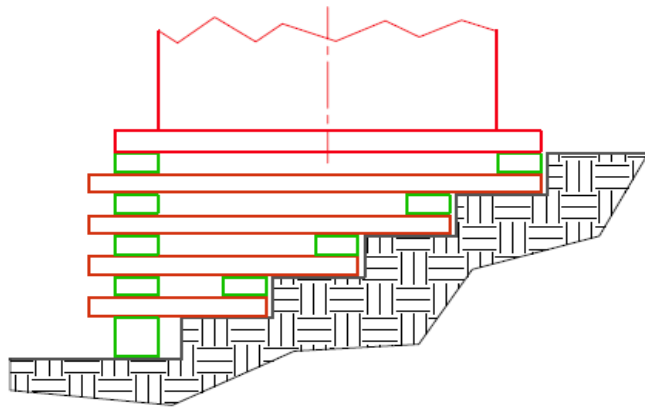




*"... and we can save 700 lira by not taking soil tests."*







# HUMAN ERROR

TO FORGET, OVERLOOK  
ONE OF THE FACTORS

HUMAN ERROR  
TO FORGET, OVERLOOK  
ONE OF THE FACTORS

$$F_x = 0$$

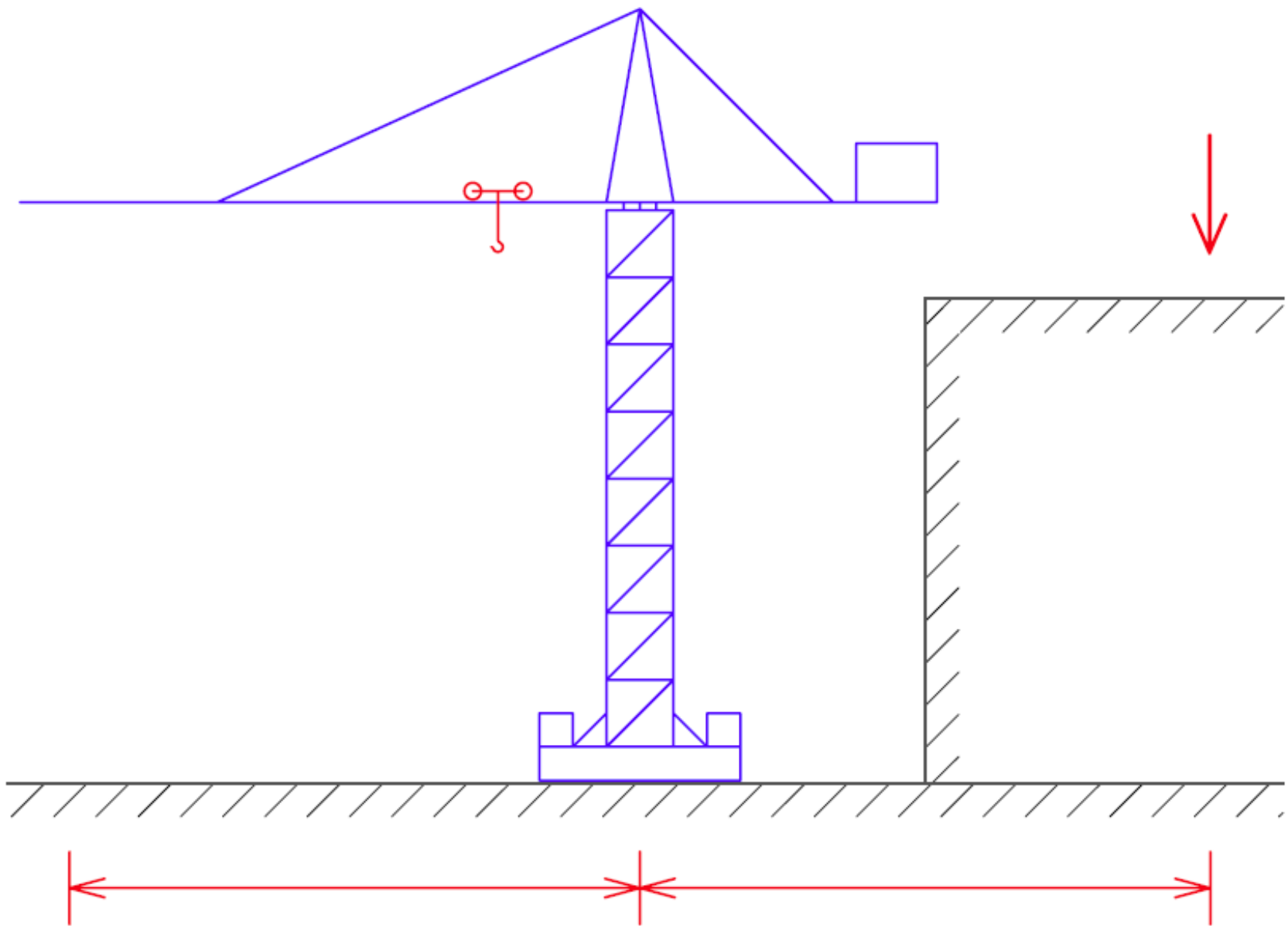
$$M_x = 0$$

$$F_y = 0$$

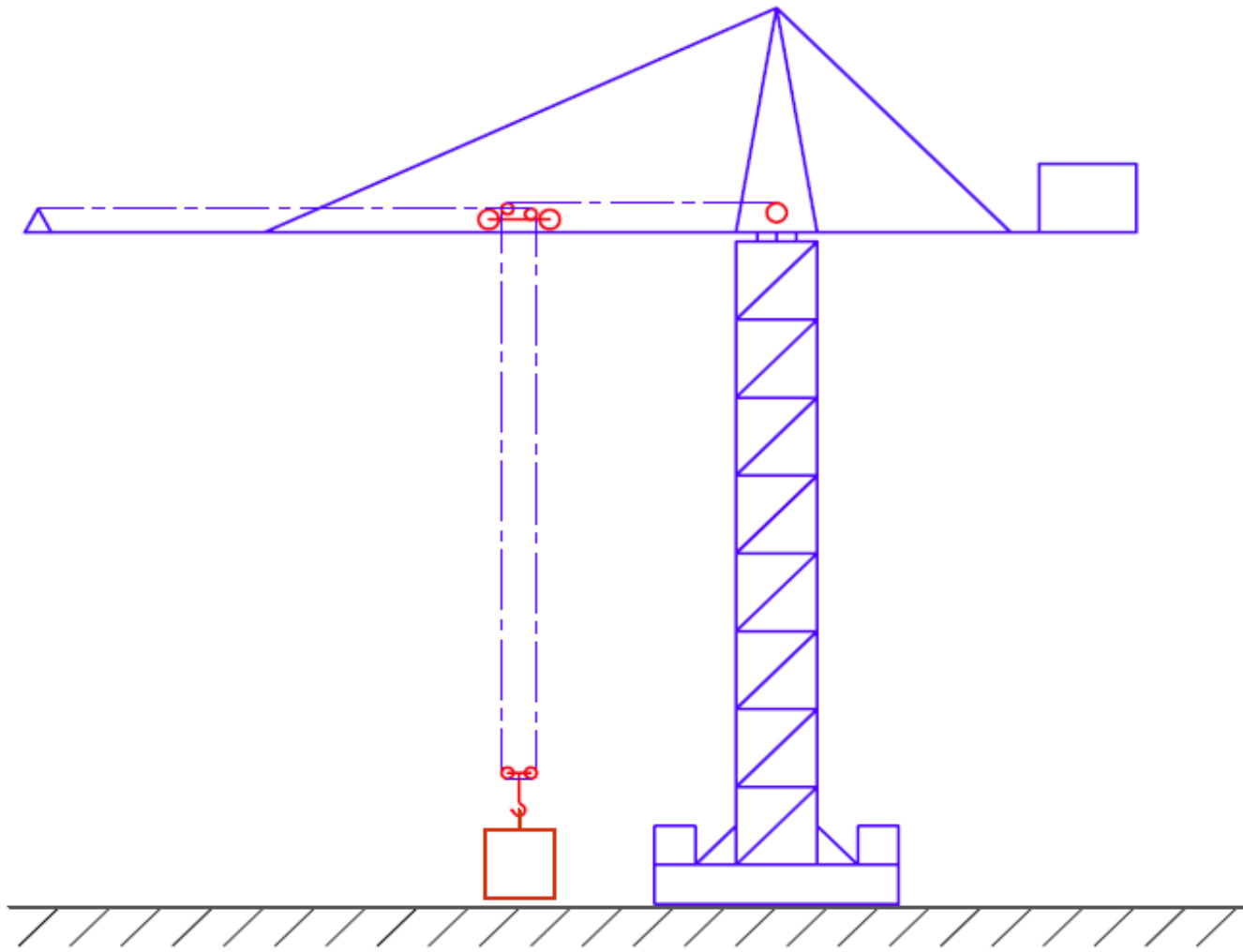
$$M_y = 0$$

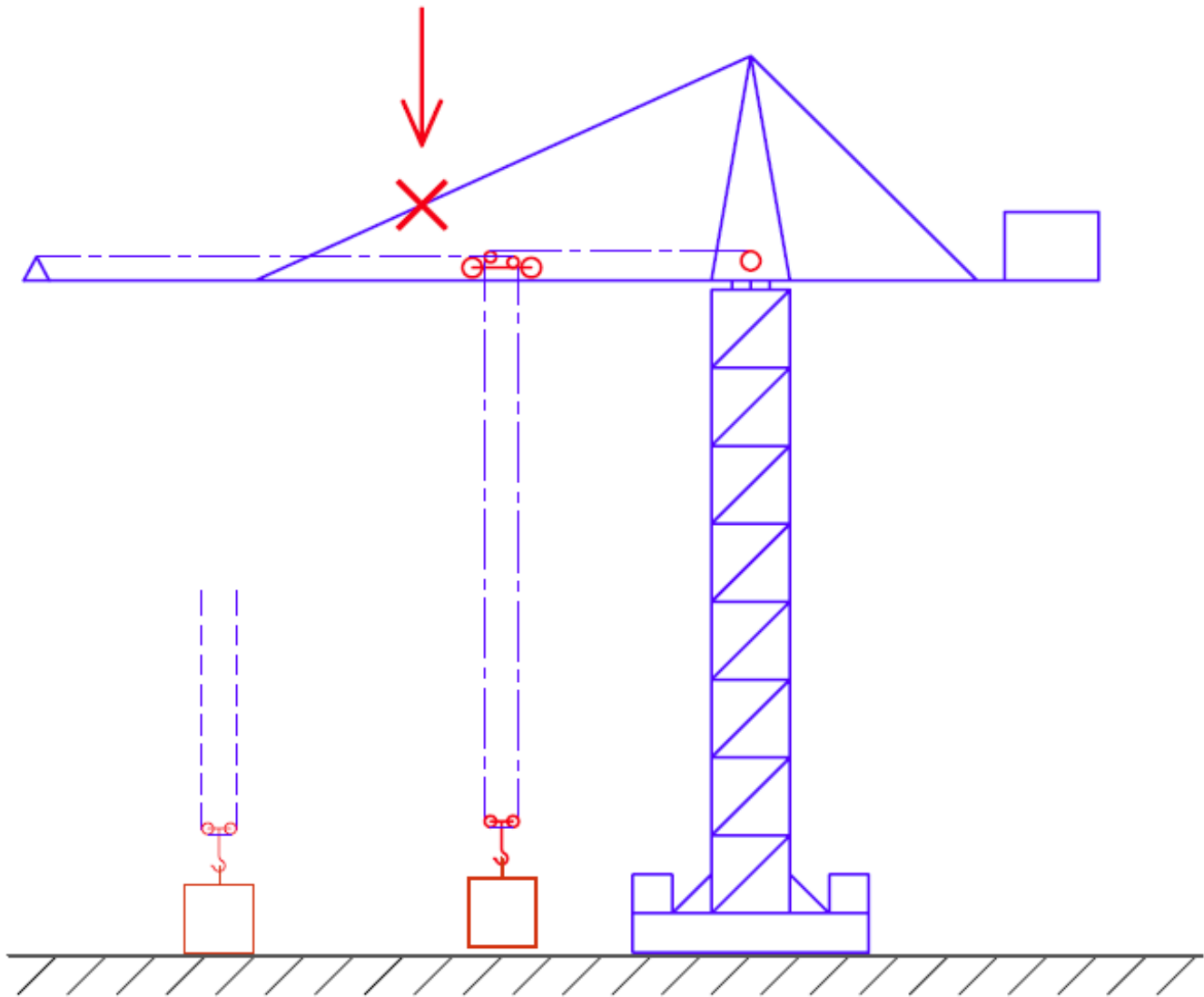
$$F_z = 0$$

$$M_z = 0$$







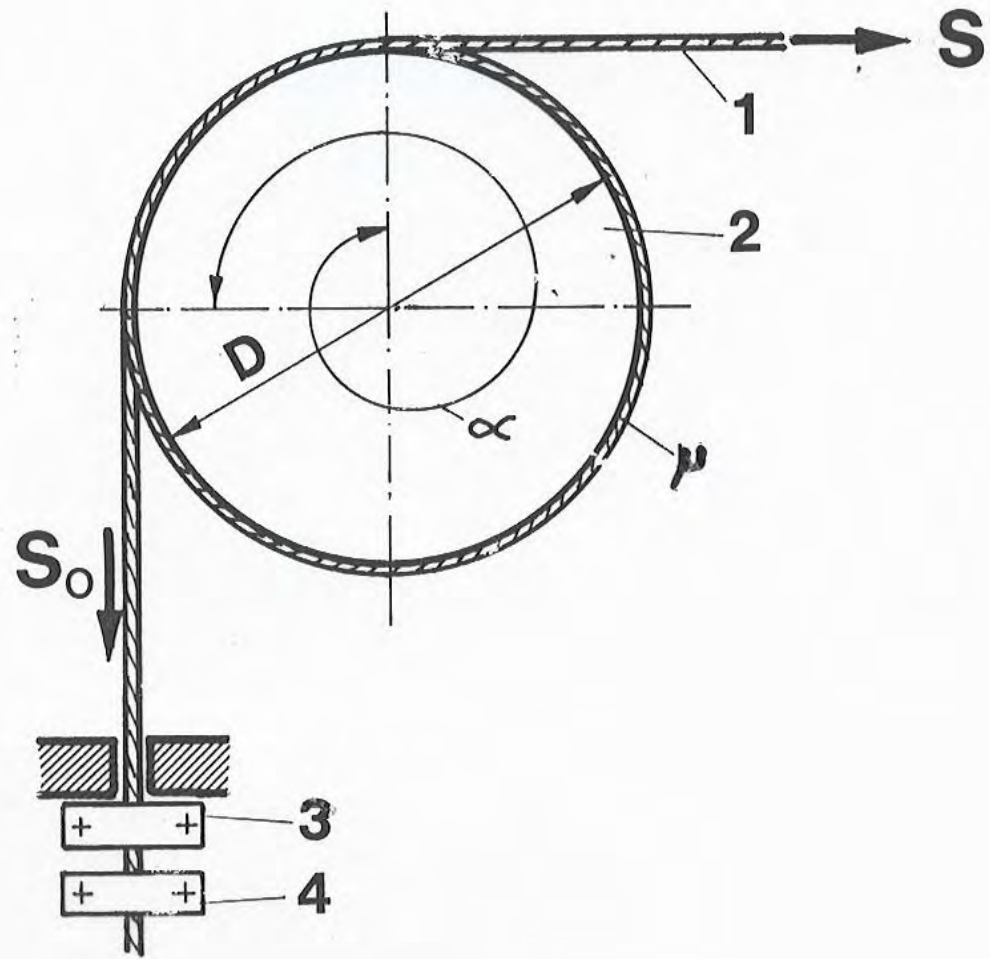


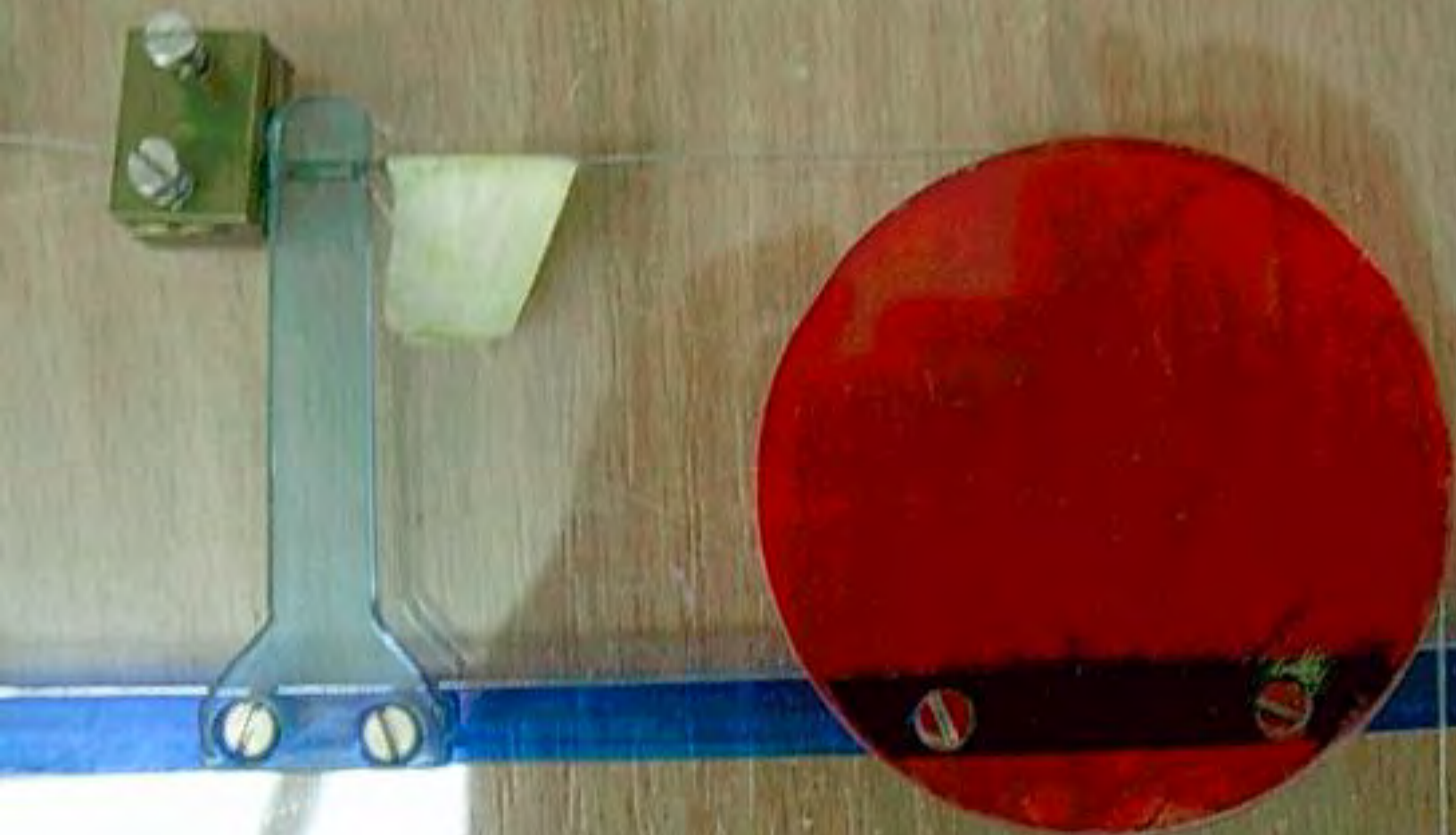
# HUMAN ERROR

USING WRONG CRITERIA

**TAKE YOUR KEY**  
DOOR IS ALWAYS LOCKED  
**DO NOT PRESS BUTTON**  
**WHEN LEAVING ROOM**  
FOR COMPLETE PRIVACY WHEN  
IN ROOM-PRESS BUTTON

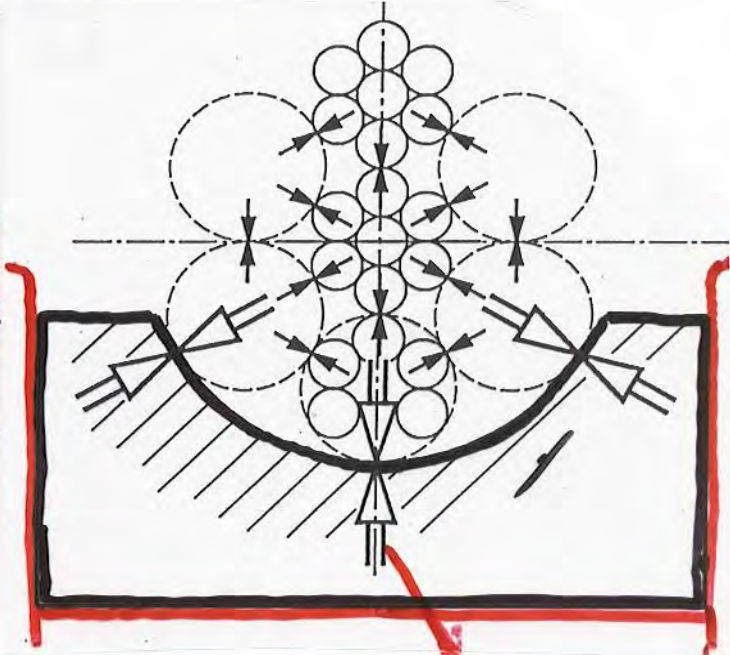
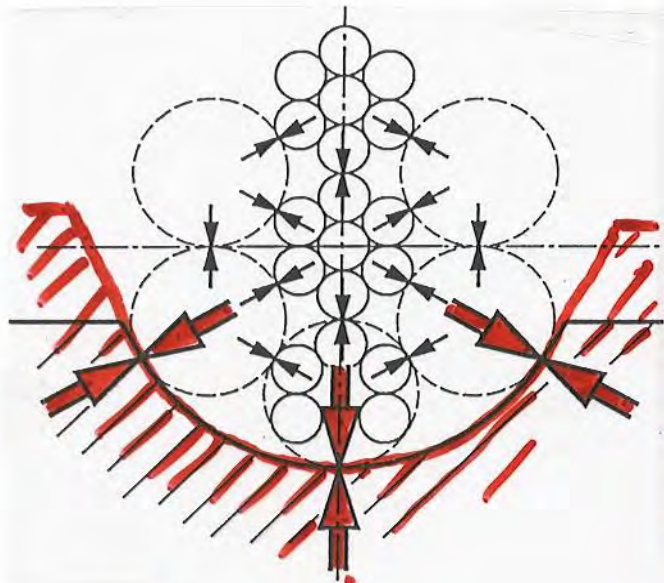






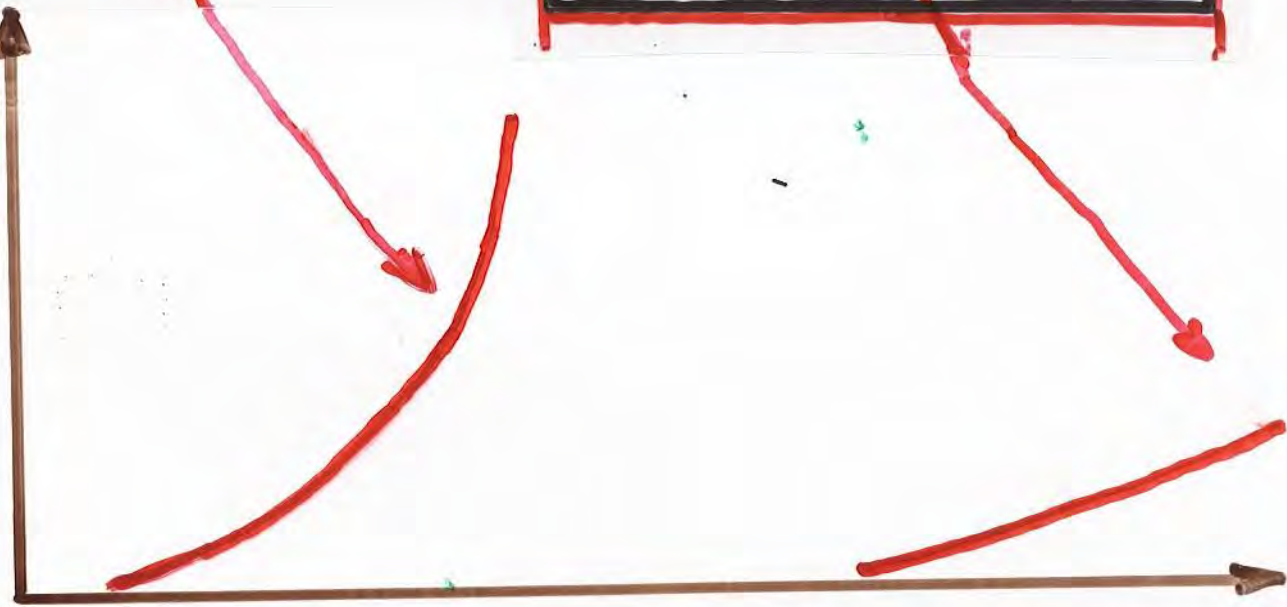
# HUMAN ERROR

THE WAY THE EQUIPMENT  
FUNCTIONS HAS NOT BEEN  
THOUGHT OUT PROPERLY

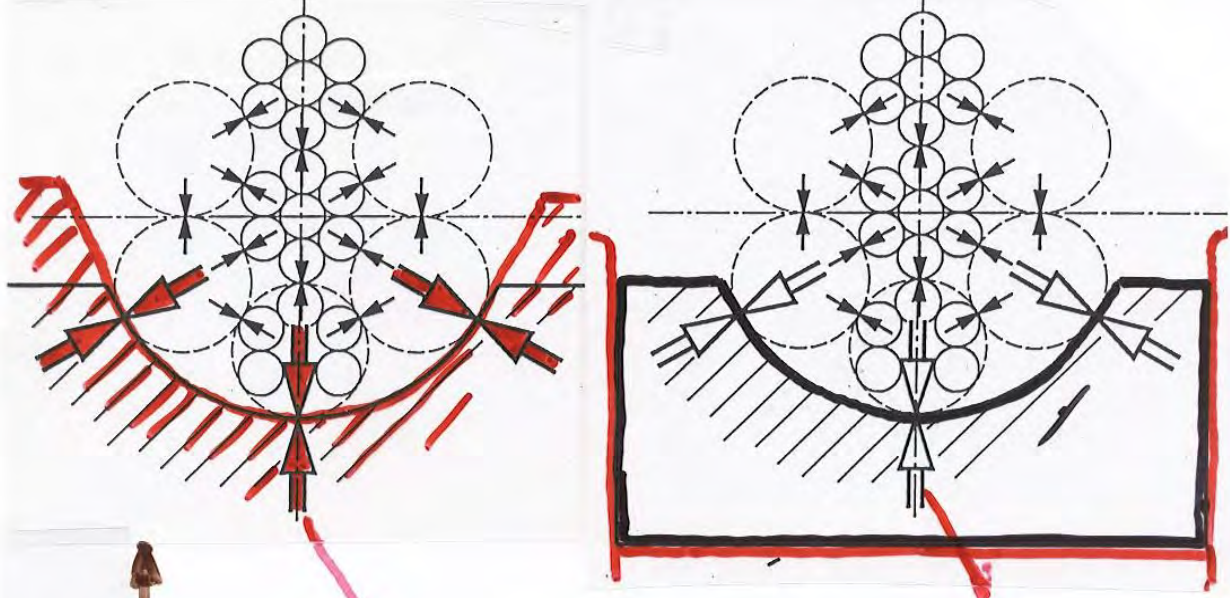


WIRE BREAKS

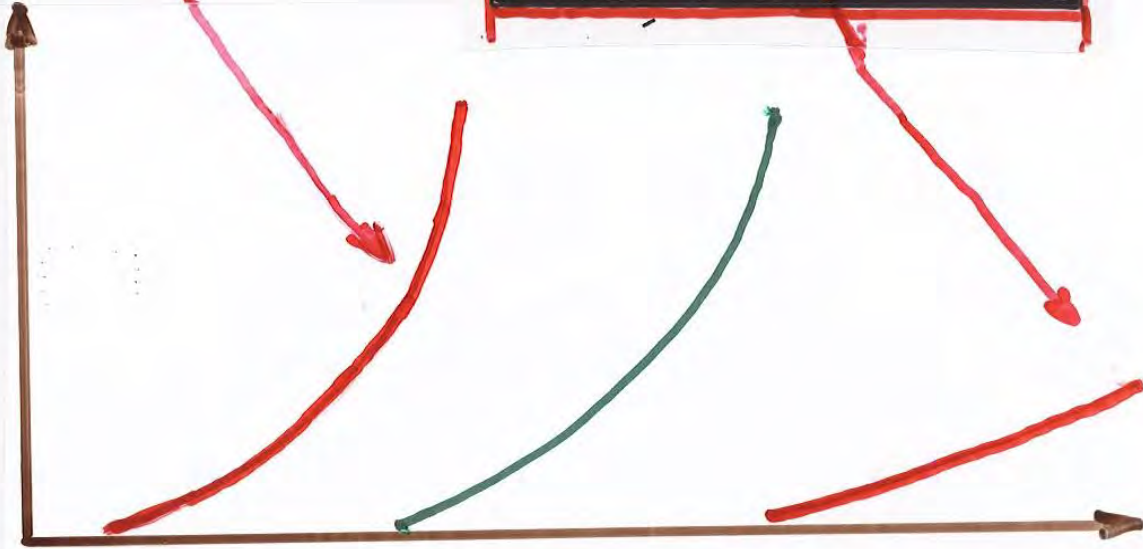
SERVICE TIME



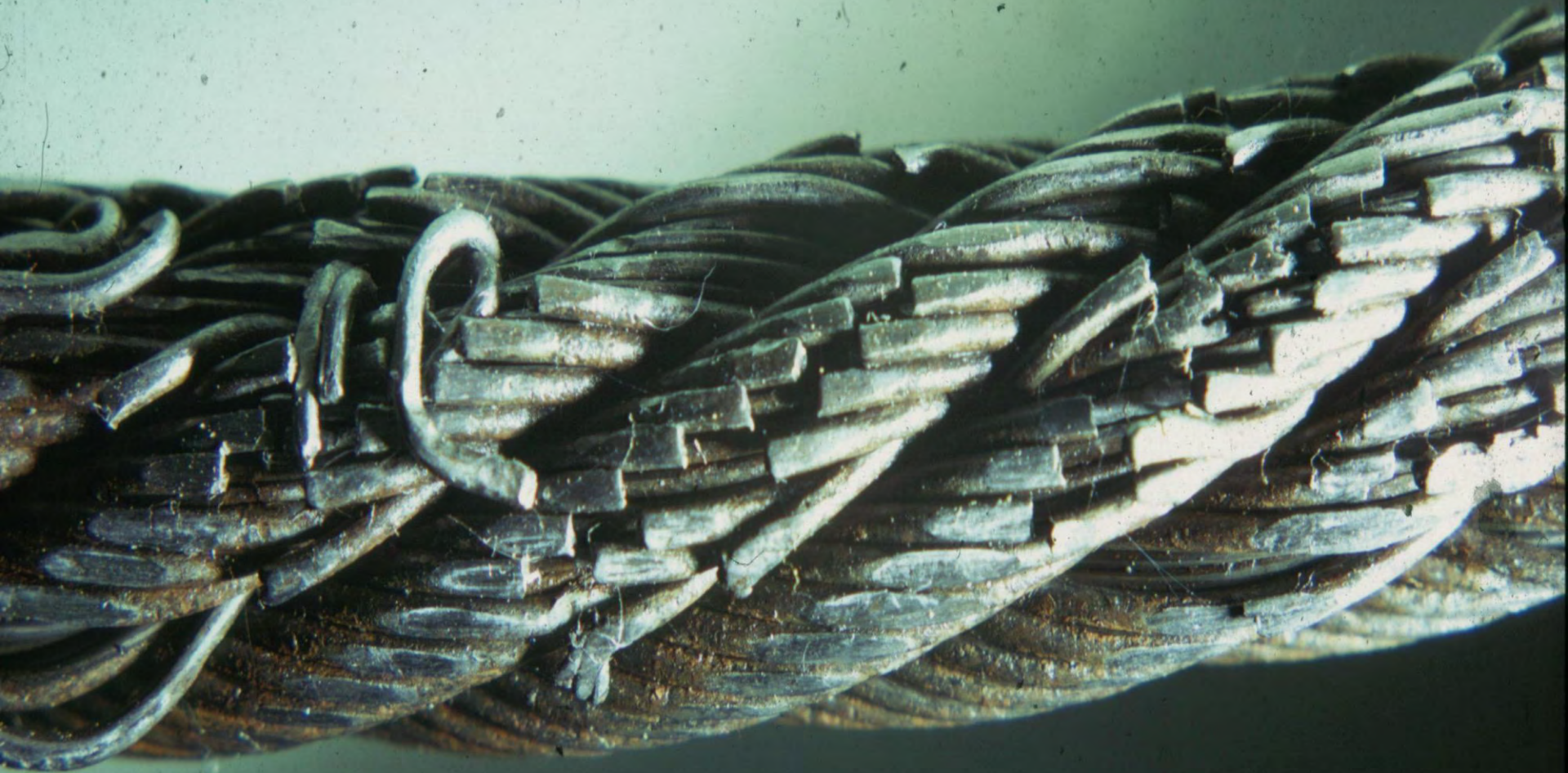




WIRE BREAKS



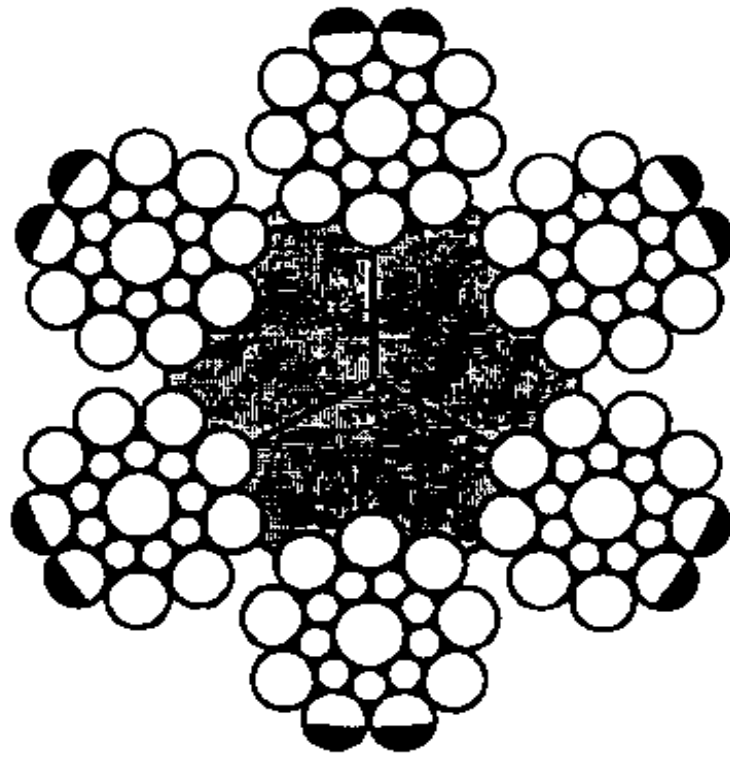
SERVICE TIME



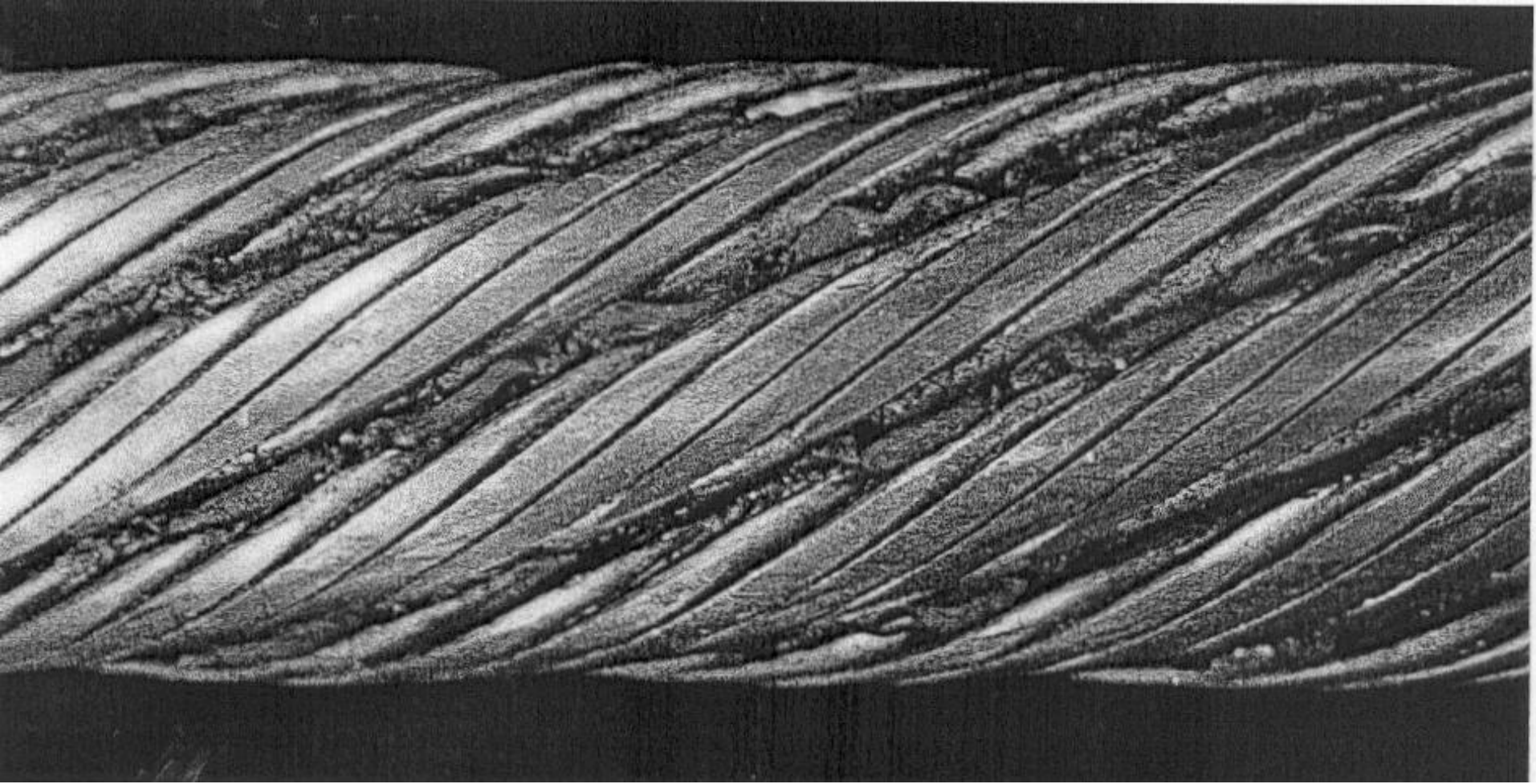


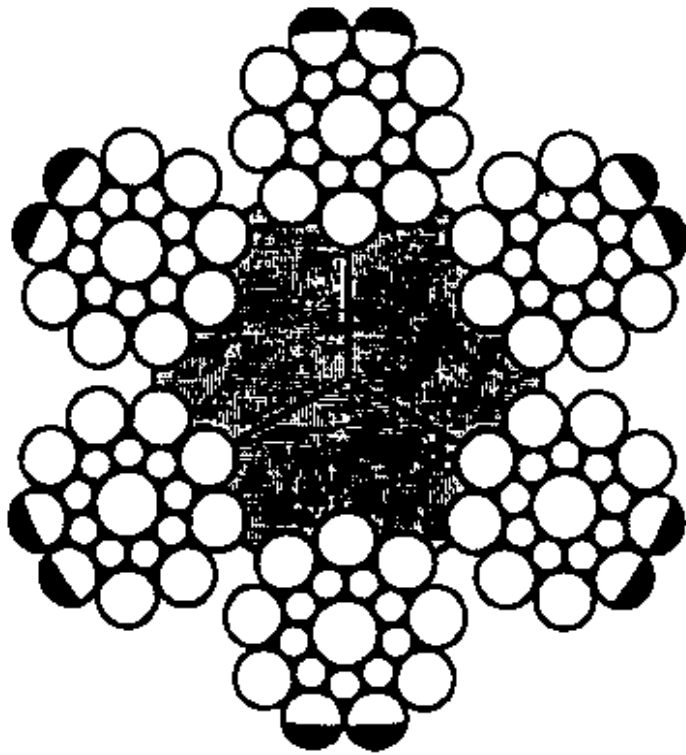
# HUMAN ERROR

"IMPROVE" ONE DETAIL  
WITHOUT THINKING OF  
ALL ITS CONSEQUENCES

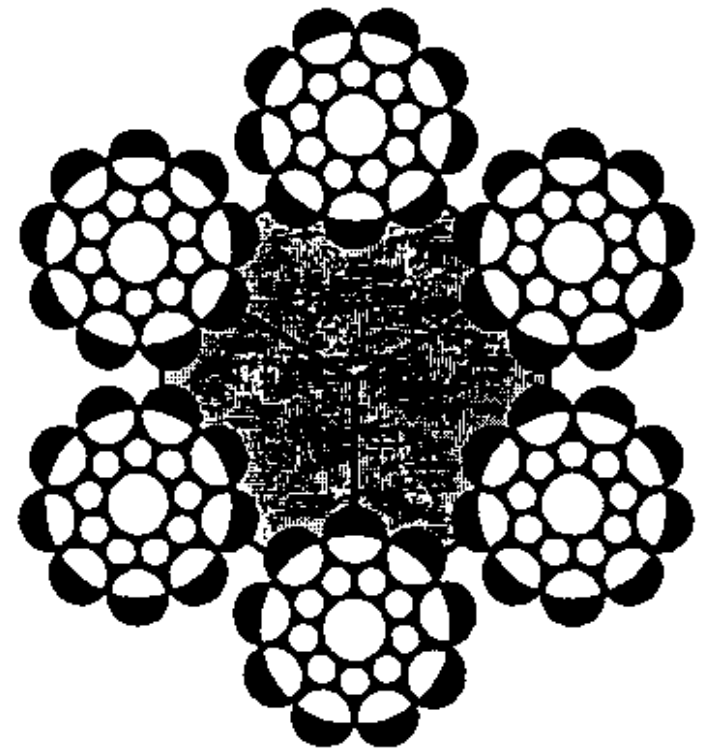


$$6 \times 2 \times 1/2 = 6$$





$$6 \times 2 \times 1/2 = 6$$



$$6 \times 9 \times 1/2 = 27$$

$$4.5 \times !!$$

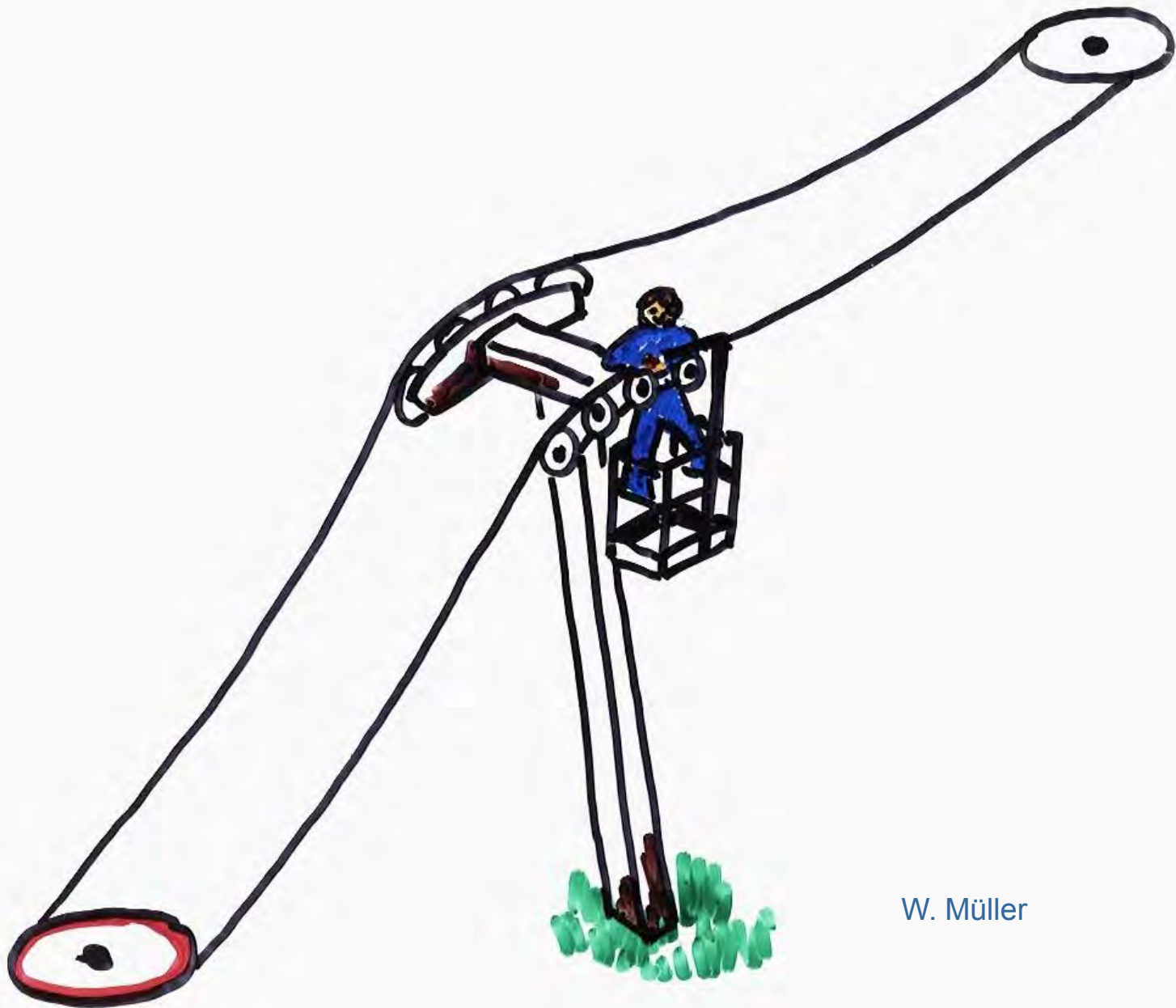
# HUMAN ERROR

CONSIDER

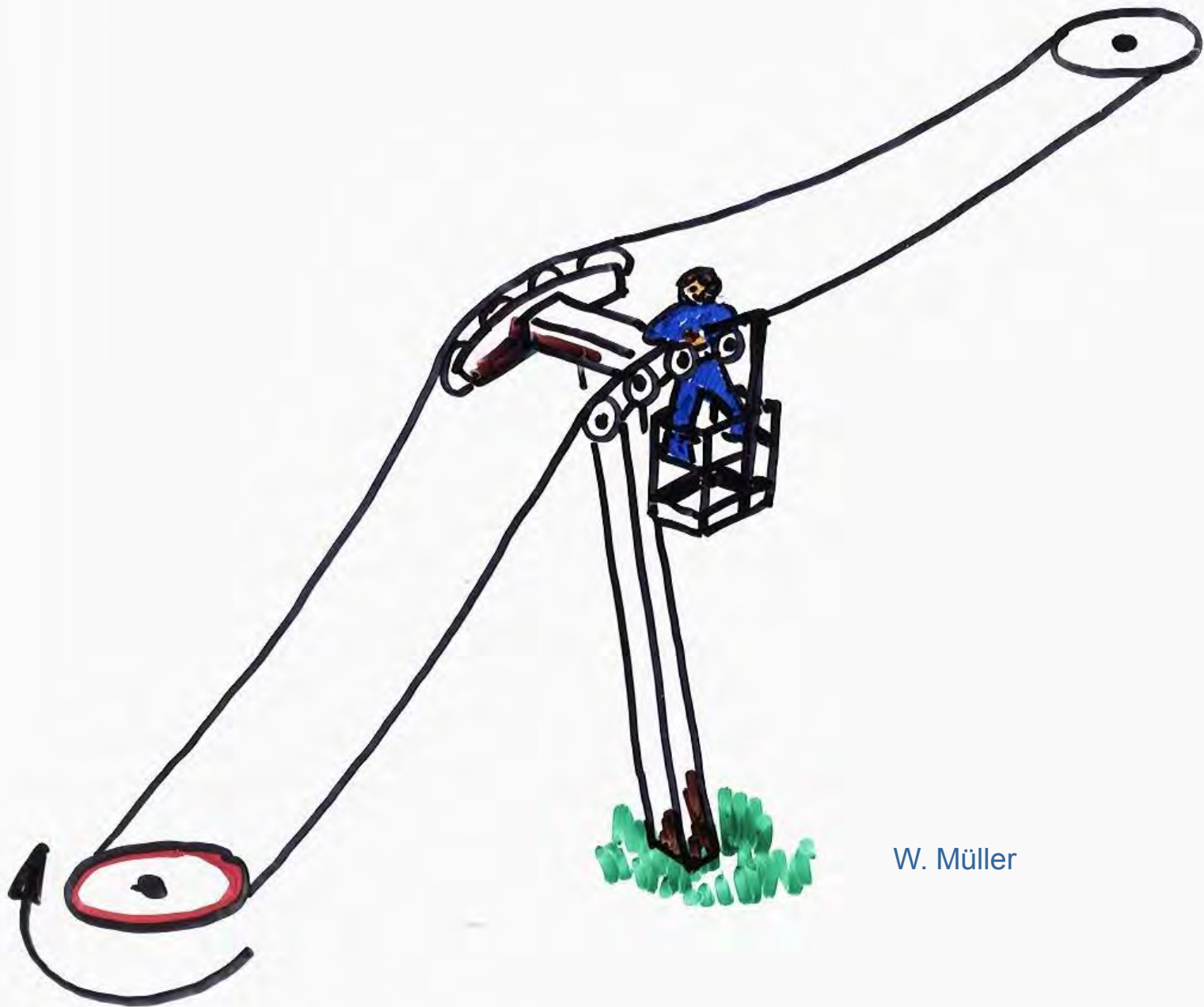
3-DIMENSIONAL PROBLEM

IN ONLY 2-DIMENSIONS





W. Müller



W. Müller

# HUMAN ERROR

INSUFFICIENT  
WRITTEN OR VERBAL  
COMMUNICATION

On a drawing:

These holes must be drilled on  
the first working day of the  
week!

Original in German:

Zu bohren bei der Montage!

That means:

To be drilled during assembly!

If you follow this instructions, your parts will wear out sufficiently fast.

Please contact our parts department for replacements.

# Trying to communicate:

Intended      not yet spoken

Spoken      not yet heard

Heard      not yet understood

Understood      not yet agreed

Agreed      not yet acted on

Acted on      not yet internalized  
for future use

# HUMAN ERROR

WE DO NOT  
PAY ATTENTION TO THE  
PRELIMINARY SYMPTOMS

WE DO NOT REALIZE THE  
MECHANISM OF CHANGE

# PRELIMINARY SYMPTOMS

Sound level

Temperature

Performance

Power consumption

Wear

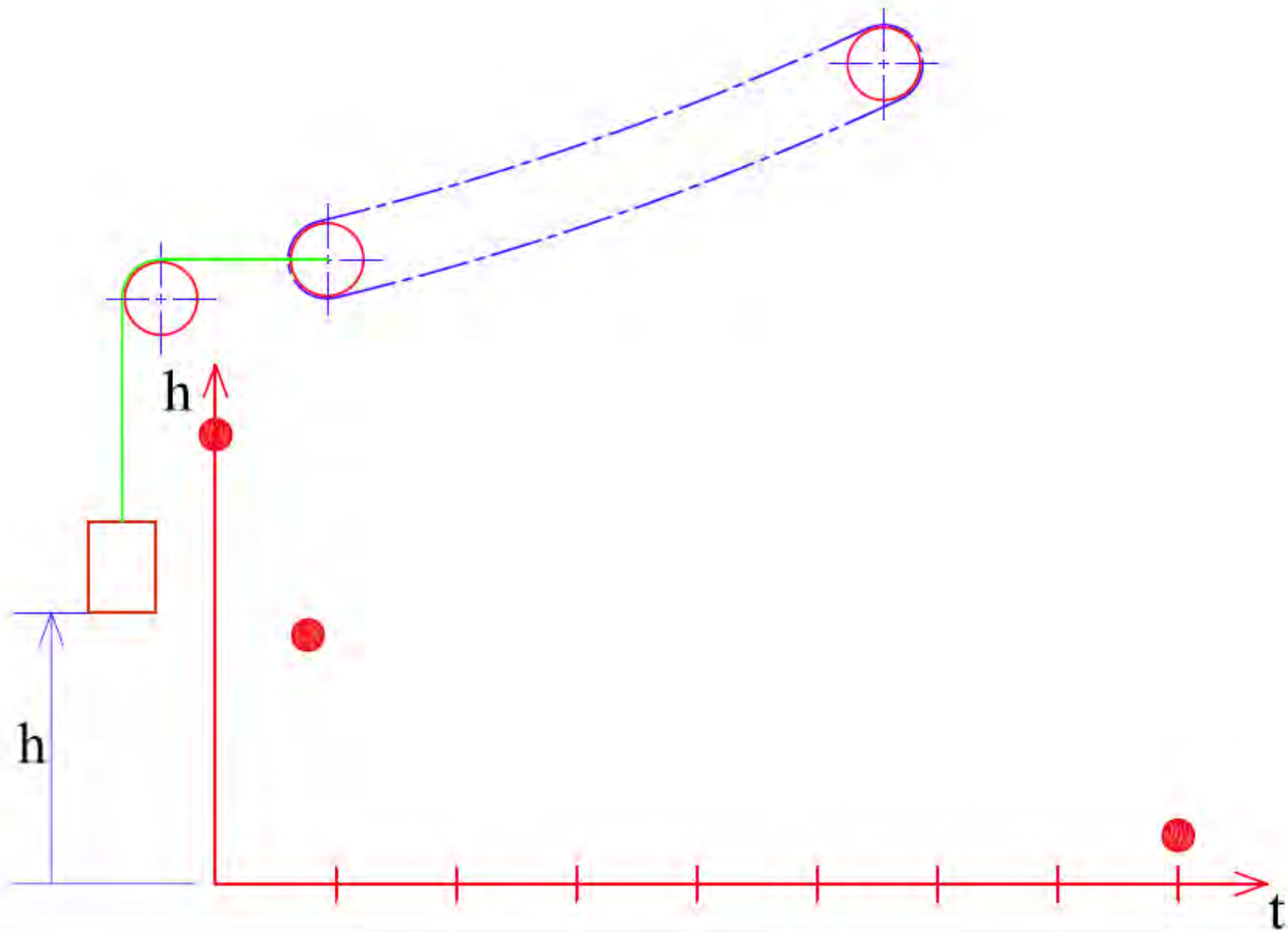
Oil Drops

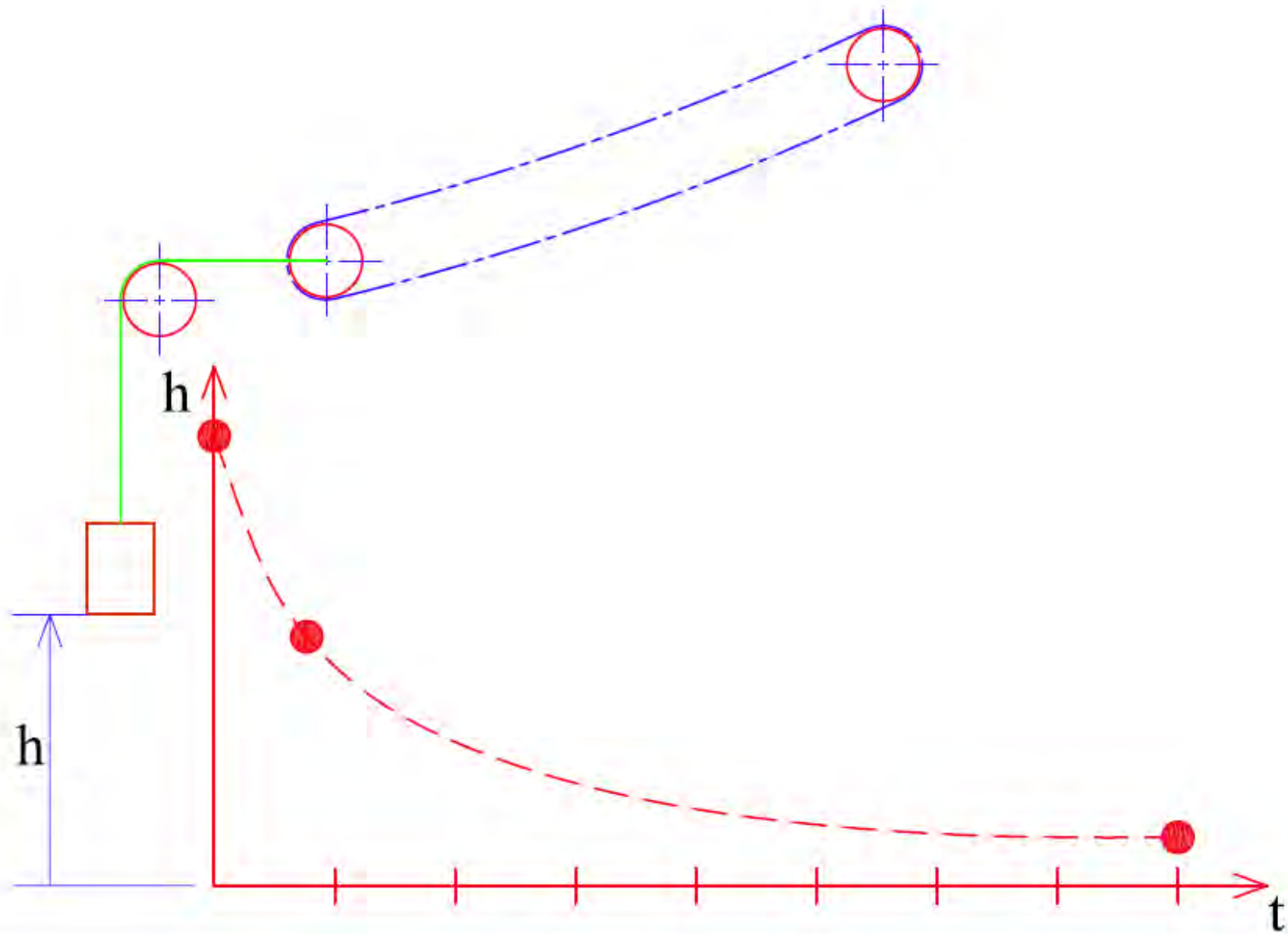
Slackening

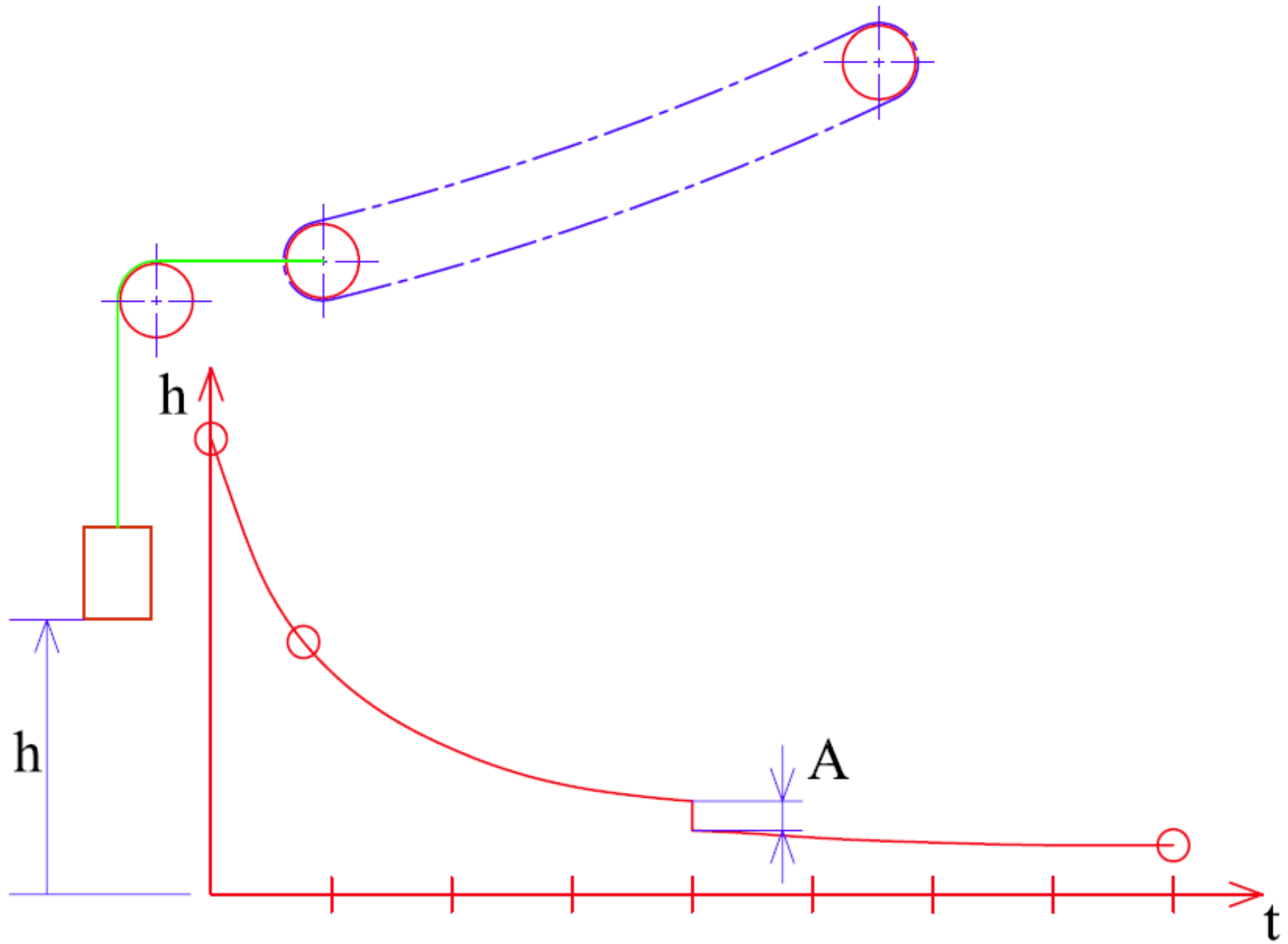
Vibration

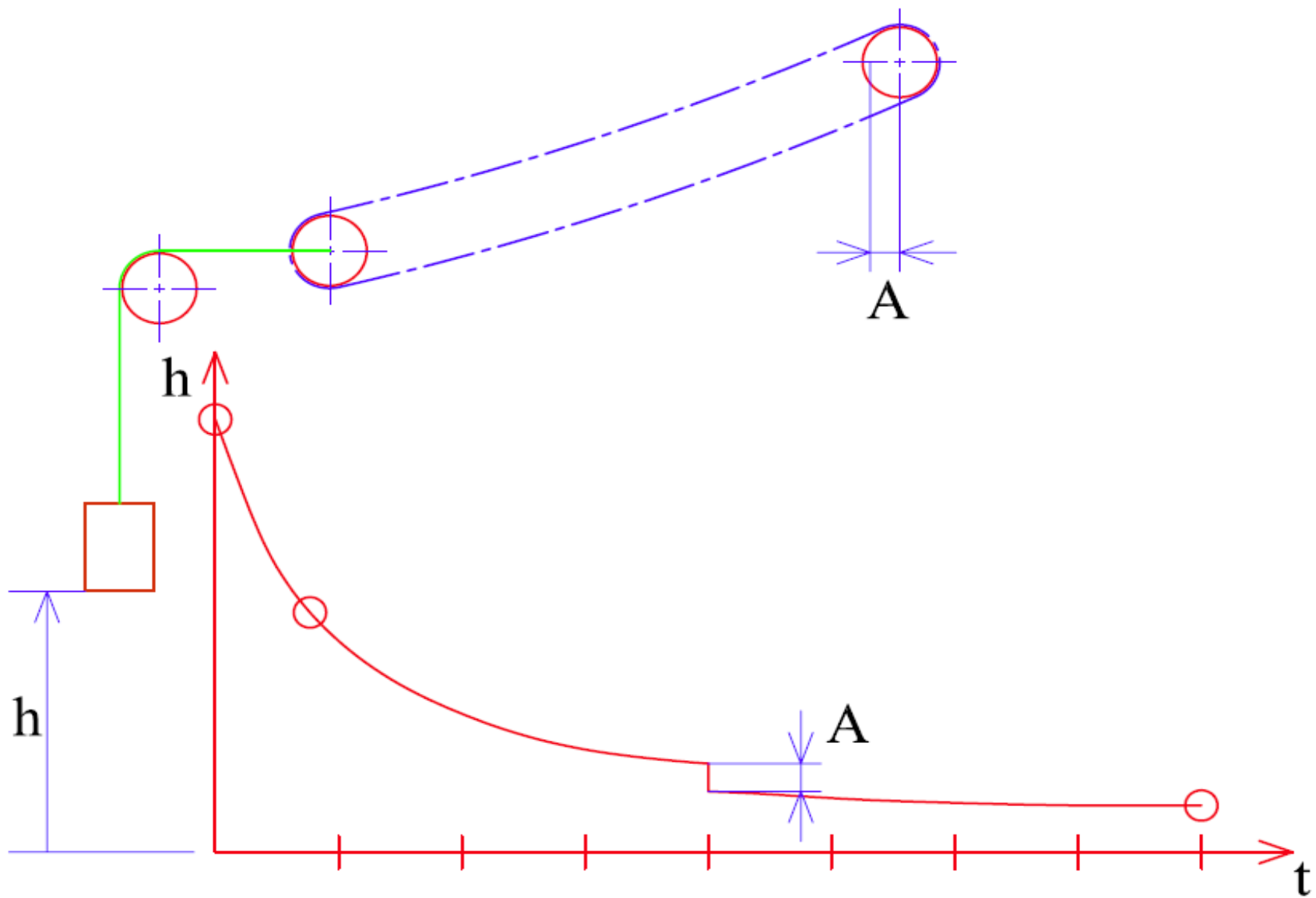
and others.....













W. Müller

