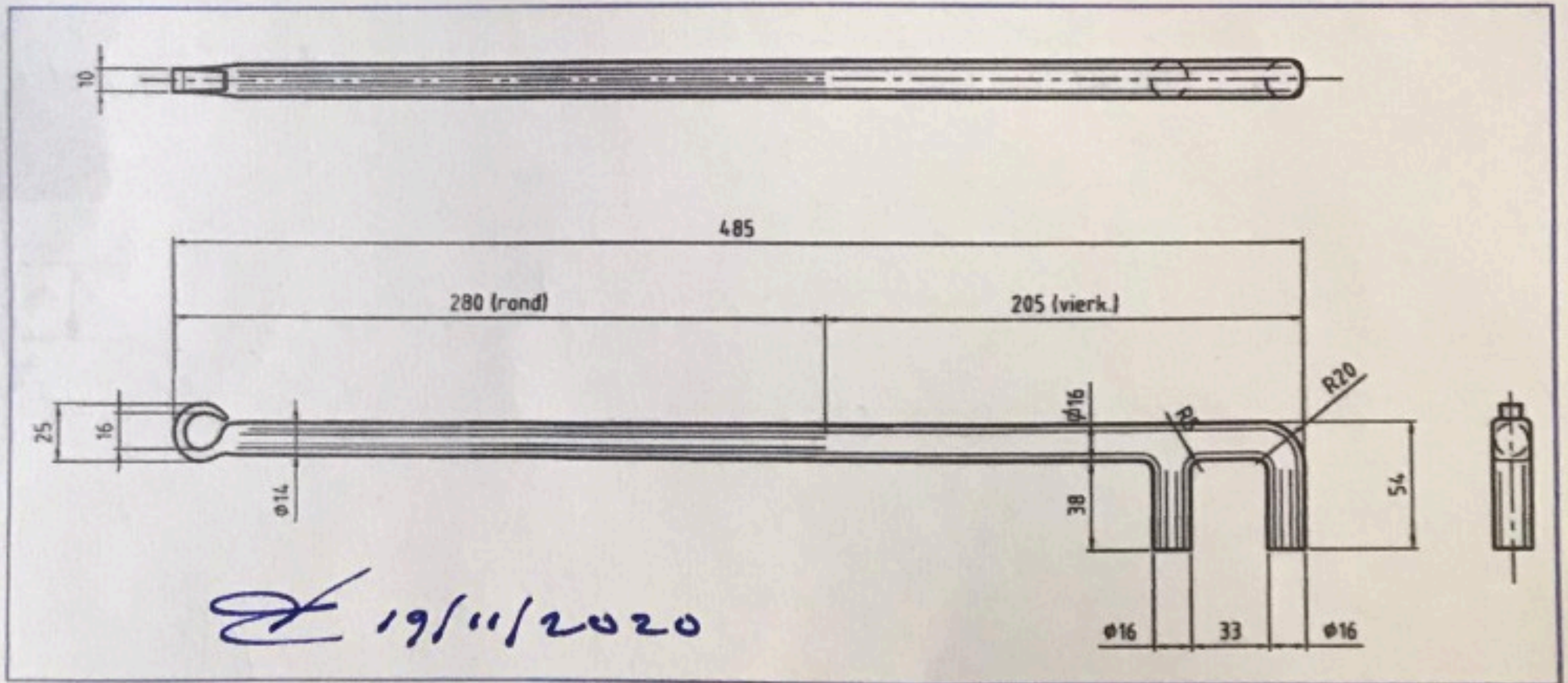




Bending fork - Forging and Material calculation

Paul Vos · Maren Kessel / The Netherlands
(IFGS e.V. / ASG vzw / metalcraftsnetwork.eu)

Drawing of the bending fork



Calculation of Material use

dimensions in mm

formula

dutch

uitgangsmateriaal (doorsnede) x lengte (L) = te bekomen (doorsnede) x gekende lengte

rond

rond

vierkant

vierkant

english

starting material (intersection) x length (L) = to become (intersection) x known length

round

round

square

square

Calculation: Step 1

calculate the content of the workpiece and add 10% because of the loss through burned material

$$((\text{round } 14 \times 280) + (\text{square } 16 \times 205) + (\text{round } 16 \times 38) + (\text{round } 16 \times 54)) \times 1,1 =$$

1	2	3	4
---	---	---	---

1	43.081		
---	--------	--	--

2	52.480		
---	--------	--	--

3	7.637		
---	-------	--	--

4	10.852		
---	--------	--	--

114.050	x 1,1	=	125.455	mm ³
---------	-------	---	---------	-----------------

Calculation: Step 2

starting material (intersection) x length (L) = to become (intersection) x known length

choose f.i. round 30 area of the cross-section formula: $\pi \times r \times r$ $3,14 \times 15 \times 15 = 706,5$

$$706,5 \times L = 125.455 \text{ -----> calculate with volume because you have two different cross-sections}$$

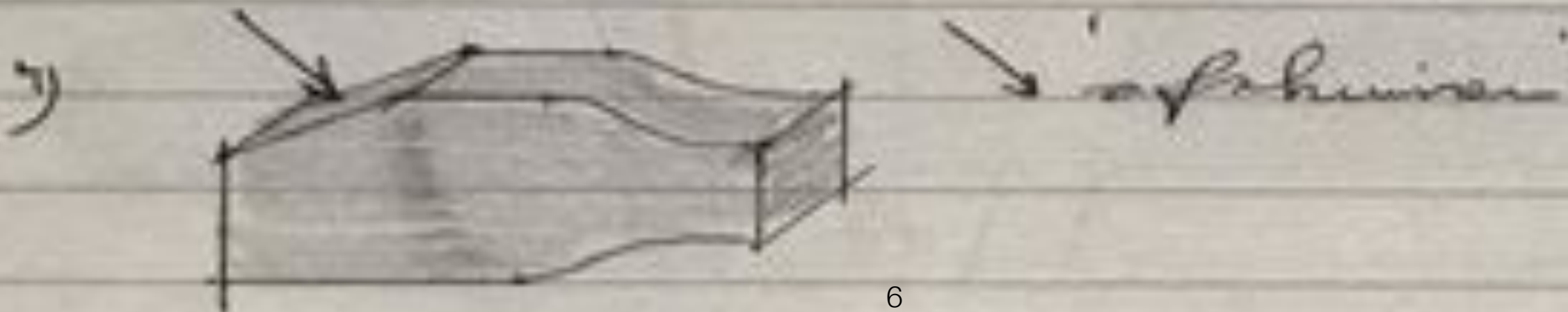
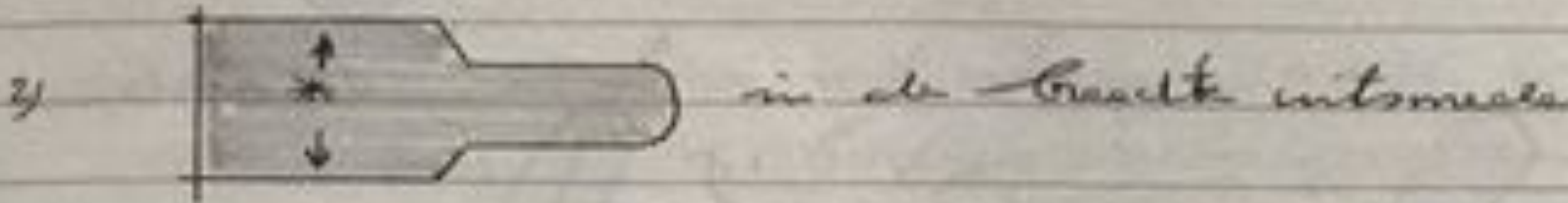
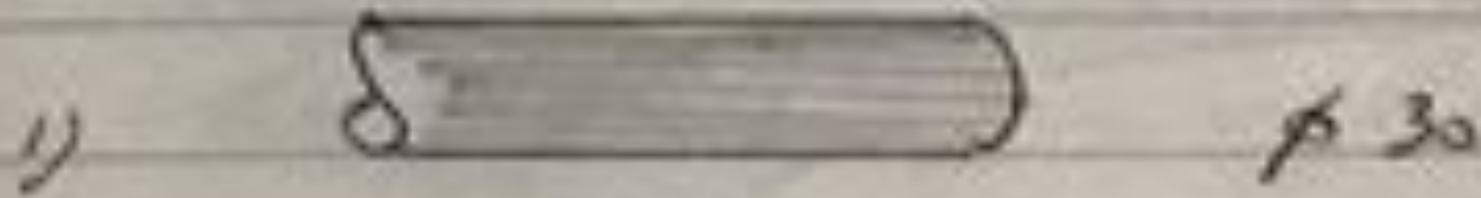
$$L = 125.455 / 706,5$$

$$L = 178$$

take L = 200

Verbleib 15 (rechnerisch)

diverse Studien / Prozessabfolge



5)



1/2 umgedreht

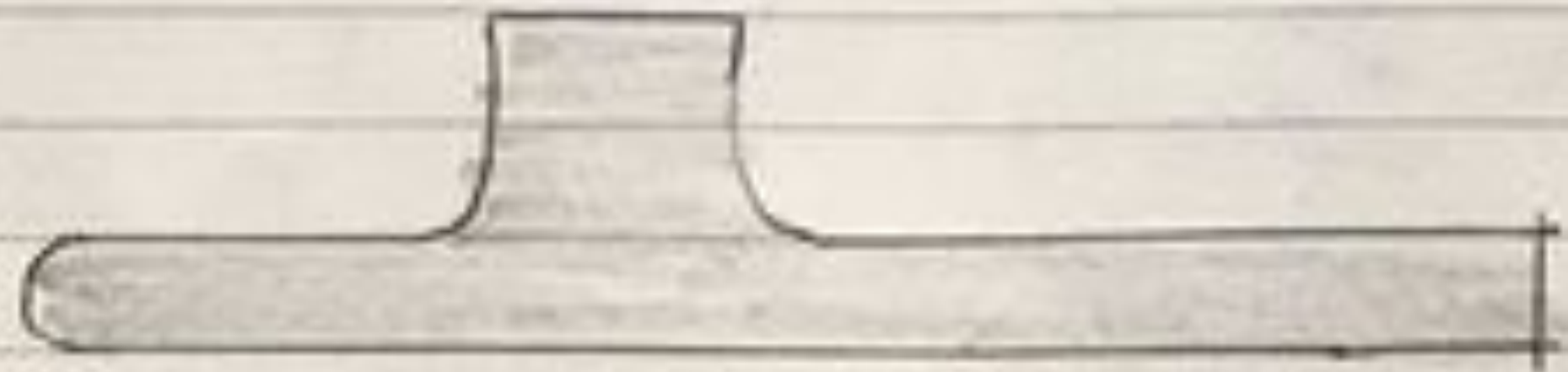
6)



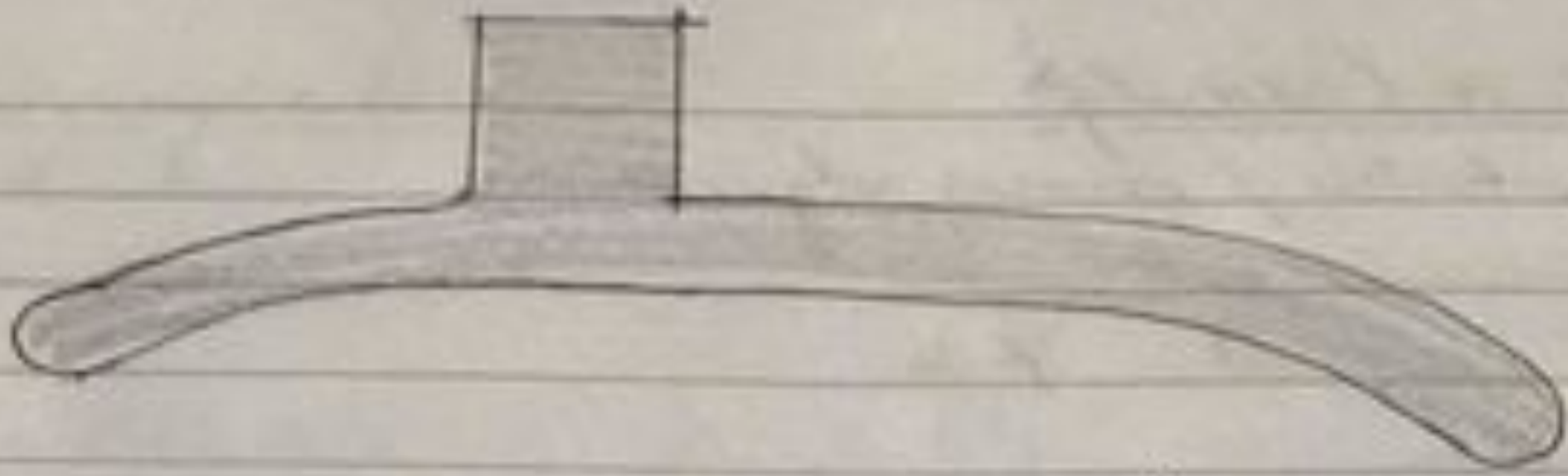
7)



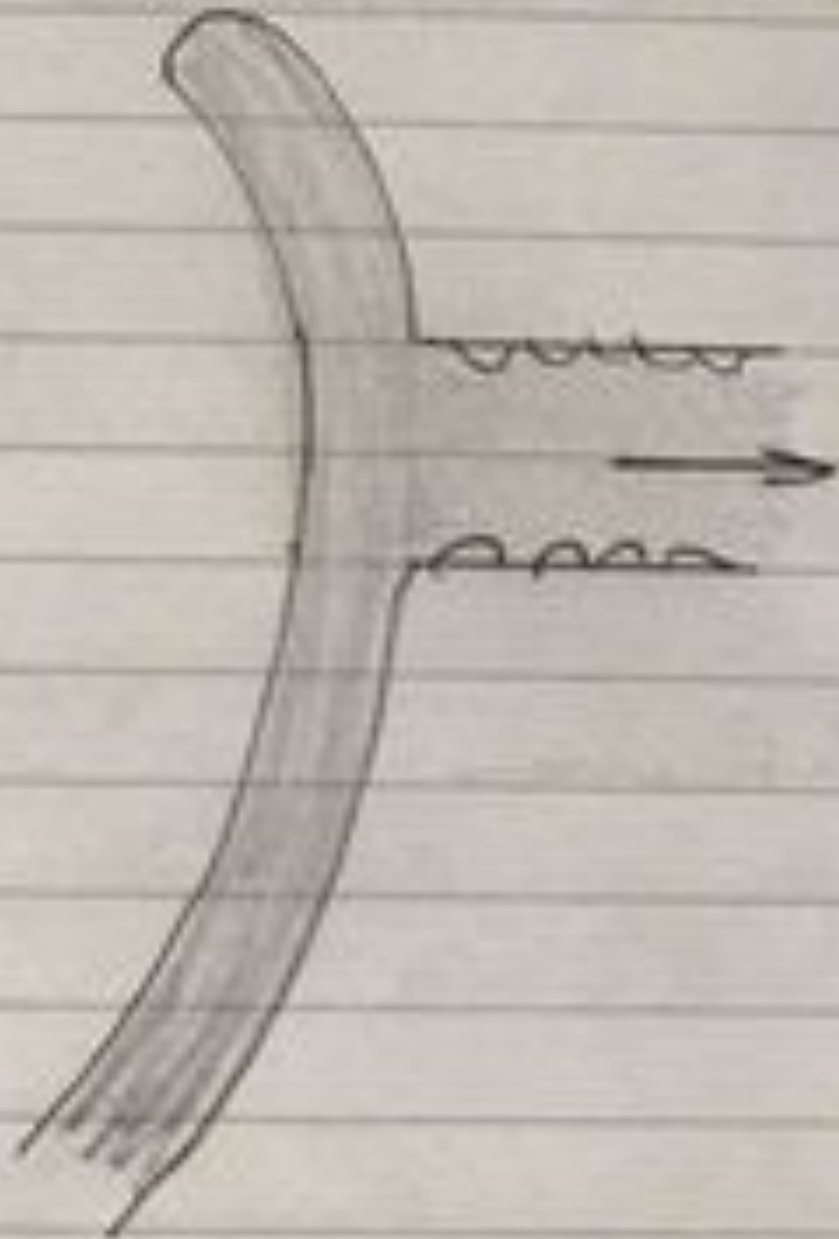
8)



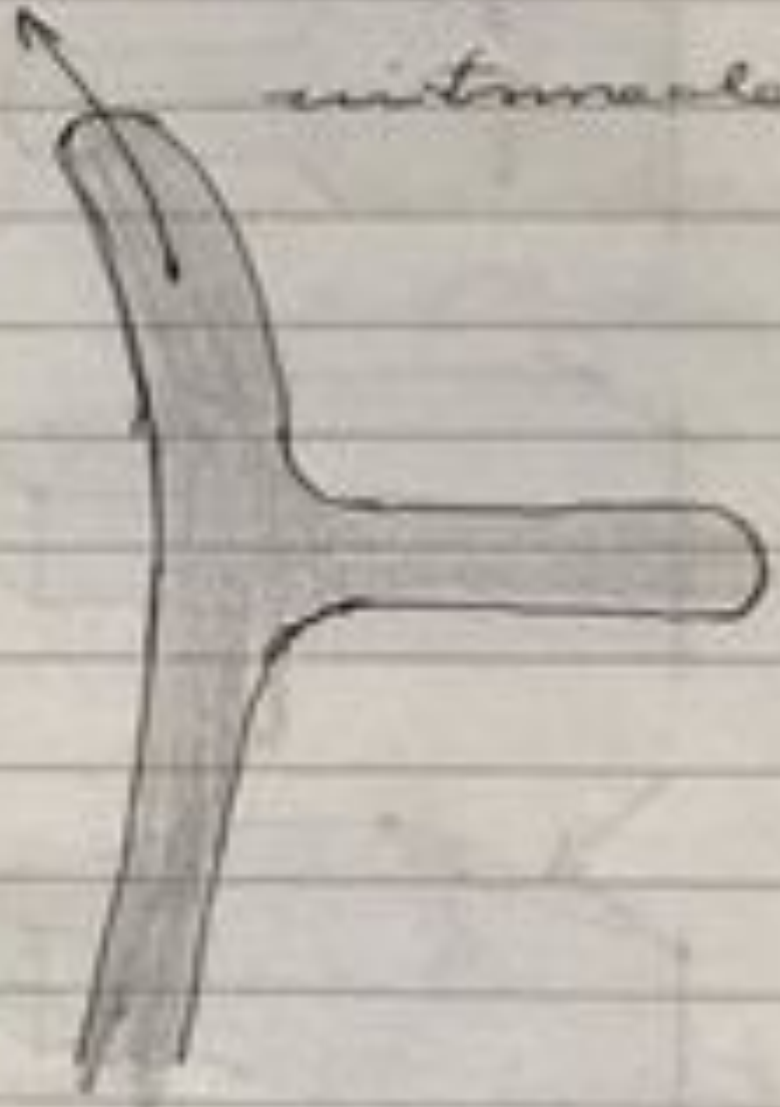
2)



10)



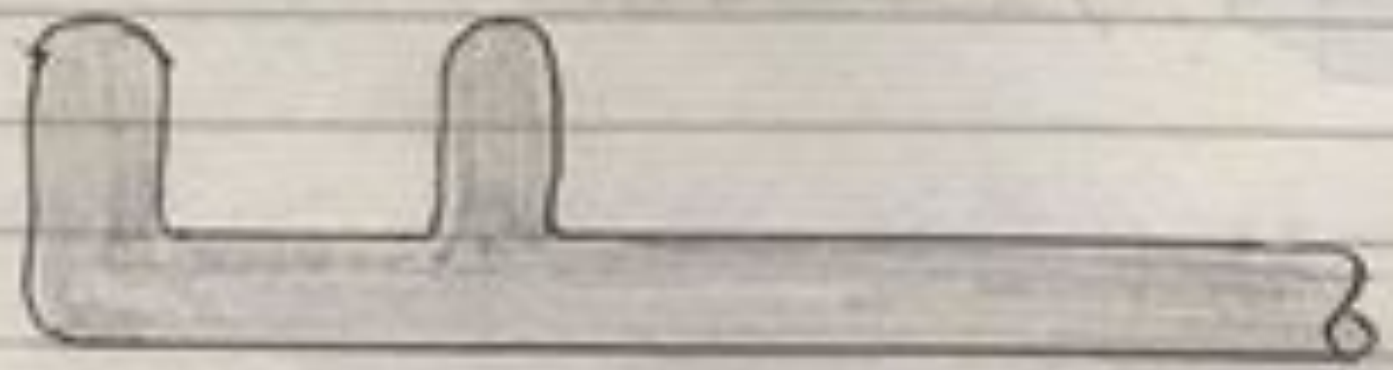
11)



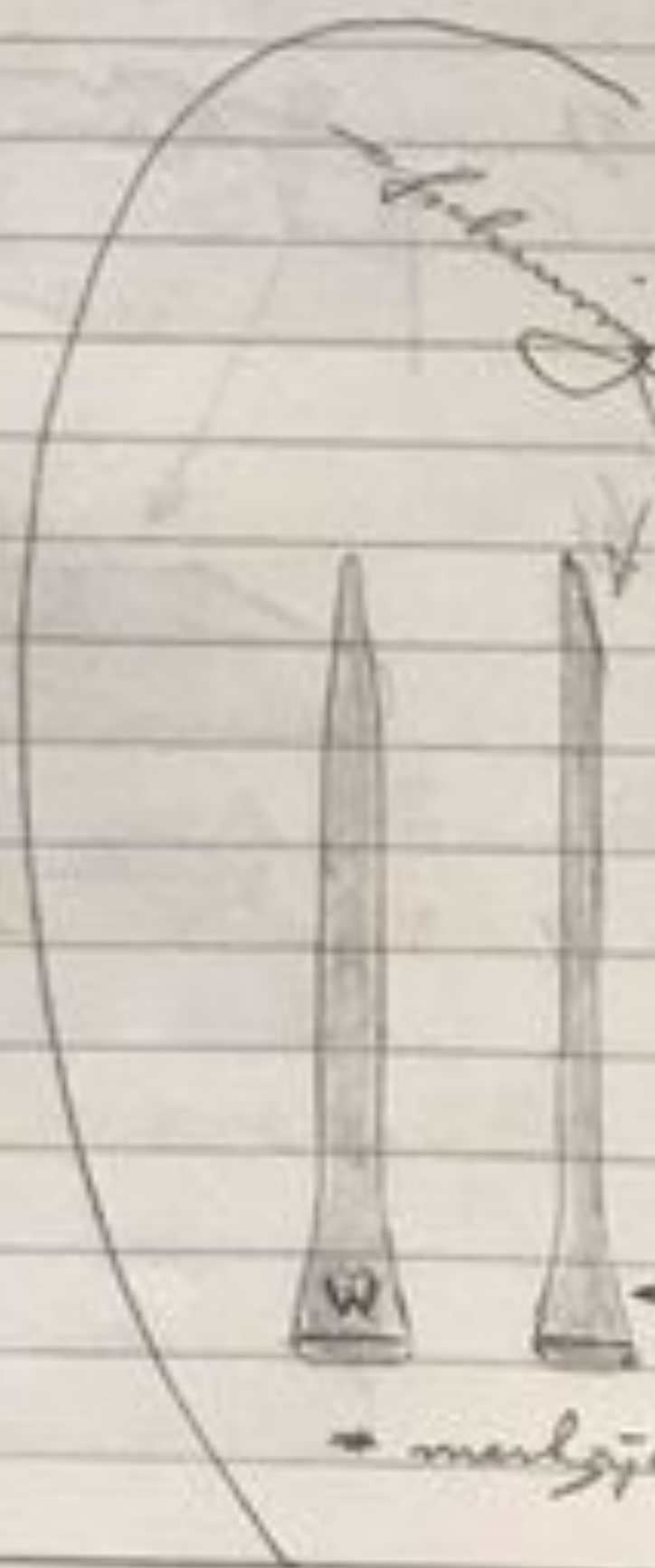
mitmacher



12)



12/3/2011



Handwritten text, possibly a name or label, written in cursive.

3

merbyde

Questions?