

# PROJECTE D'INNOVACIÓ

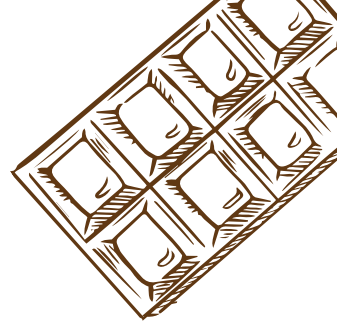
Projecte de Restauració d'una moledora de xocolata

*Rebuilding the Origins of our Chocolate*



Realitzat per l'alumnat del  
**CFGM de Manteniment Electromecànic**  
per a l'empresa **Chocolates CREO**

**CREO.**



# COCOA AND CHOCOLATE MIXER AND GRINDING MIXER:



It is a machine from 1900-1920, used to grind cocoa and chocolate.

## Operating instructions:

1

FIRST OF ALL, THE CHOCOLATE IS ADDED TO THE GRANITE BASE. THIS BASE ROTATES ABOUT A CENTRAL AXIS IN THE CENTER OF THE MACHINE, WHICH HAS TWO STONE WHEELS THAT GRIND AND REFINE THE CHOCOLATE OR COCOA BEANS. THESE STONES CAN BE ADJUSTED IN HEIGHT AND SPEED. WE CAN CHOOSE THE THICKNESS OF THE CHOCOLATE OR COCOA BY ADJUSTING THE STONE. IT ALL DEPENDS ON THE HEIGHT THE STONE IS RAISED.

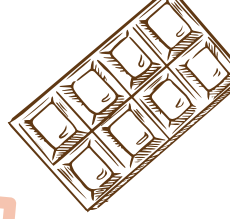
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THEN, THE CHOCOLATE IS MELTED WITH THE HELP OF ELECTRIC BRAZIERS THAT HEAT THE BASE STONE (THESE BRAZIERS ARE PLACED AT THE BOTTOM OF THE MACHINE THROUGH TWO DAMPERS ON THE OUTSIDE OF IT). THIS MAKES THE JOB EASIER. IF WE WORK WITH COCOA, THE HEAT HELPS TO GENERATE THE LIQUID COCOA. THE CHOCOLATE BECOMES SEMI-PASTY IN A MATTER OF TIME.

3

GRADUALLY, THE REMAINING INGREDIENTS ARE ADDED TO MAKE THE FINAL CHOCOLATE PRODUCT. THE MORE INGREDIENTS WE ADD, THE MORE THE MACHINE WORKS. THE HEIGHT OF THE STONES WILL DEPEND ON THE FINAL CHOCOLATE PRODUCT TO OBTAIN. IF WE WANT TO GET REFINED CHOCOLATE, THE STONES WILL HAVE TO BE LOWER TO GRIND THE SUGAR. IF WE WANT TO GET RUSTIC CHOCOLATE THE STONES SHOULD BE RAISED IN ORDER NOT TO BREAK THE SUGAR AND ONLY MIX THE CHOCOLATE. IF WE ARE PRODUCING COCOA, WE WILL STOP GRINDING WHEN IT MEETS THE RIGHT GRANULOMETRY, LESS THAN 25 MICRONS. ONCE THE CHOCOLATE IS MADE, WHEN WE GET A HOMOGENEOUS MIXTURE OF ALL THE INGREDIENTS, WE TAKE IT OUT OF THE MACHINE WITH THE HELP OF A SPADE.

# COCOA AND CHOCOLATE MIXER AND GRINDING MIXER:



Picture 1

This is the axis that allows all the movement of the machine base:



Picture 3

In this image you can see the stones, which are responsible for crushing and grinding all the chocolate. These are driven by bearings, which you can see in the next picture.



Picture 2

Here is a picture of the damper through which the embers are placed to produce heat:



Picture 4

In this photo you can see the bearings, which direct and command the stones. With the help of these bearings the stones can be regulated in height to get the expected thickness of the chocolate. These are the steering wheels that are seen at the top of the machine.

