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Ingram Bros Master Clock

RESTORATION OF AN AUSTRALIAN
DESIGNED AND PRODUCED CLOCK
FROM THE 1950'S



A close-up photograph of the left door of an open wooden clock case. The door is lined with a blue material, and a complex mechanical assembly is mounted on it. This assembly includes a vertical metal rod, a small motor at the bottom, and various gears and levers. Two black circular components, possibly buttons or sensors, are also visible on the blue panel.

Ingrams clock as found

RESTORATION OF AN AUSTRALIAN DESIGNED
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Ingrams Slave Many produced

RESTORATION OF AN AUSTRALIAN DESIGNED
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A collection of mechanical parts for a clock restoration, laid out on a white surface. The parts include a long brass plate with four holes at the top, a large square brass plate with a textured surface and several holes on the left, a thin metal strip, a small metal bracket, a large brass gear, a smaller brass gear, a metal gear, a large metal gear, a coil of copper wire, and a small metal component. The text "Ingrams Slave" is overlaid on the left side, and "low cost to produce" is overlaid on the bottom left.

Ingrams Slave

low cost to produce

RESTORATION OF AN AUSTRALIAN DESIGNED
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Ingrams clock Coil Resistances

RESTORATION OF AN AUSTRALIAN DESIGN
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A close-up photograph of a mechanical clock movement, specifically the gear train, mounted on a large, rectangular brass plate. The plate has a prominent circular pattern from a lathe. Two large, interlocking brass gears are the central focus. A green-painted metal frame or bridge is positioned above the gears, with various adjustment screws and pins. To the left, a cylindrical component, possibly a winding stem or part of the escapement, is visible. The overall appearance is that of a vintage, hand-crafted mechanical device.

Ingrams Slave Partially assembled

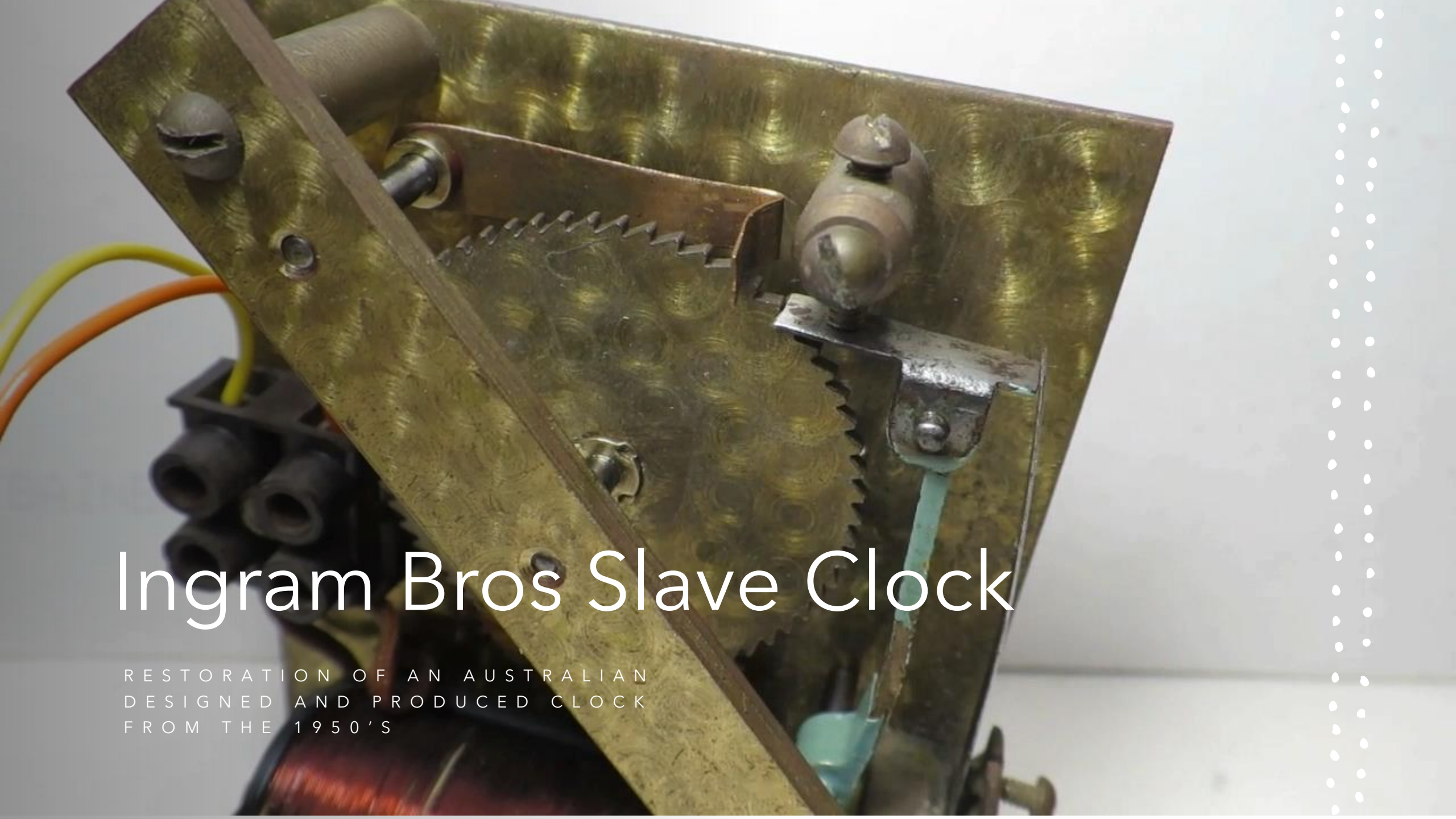
RESTORATION OF AN AUSTRALIAN DESIGNED
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Ingrams Slave Complete

RESTORATION OF AN AUSTRALIAN DESIGNED
AND PRODUCED CLOCK FROM THE 1950'S



A close-up photograph of a mechanical clock movement, specifically a slave clock. The main body is made of polished brass. A large, curved gear is visible, with a smaller gear meshing with it. A pendulum bob, which is a small metal sphere, is attached to a metal arm. The background is a plain, light-colored surface. The text "Ingram Bros Slave Clock" is overlaid in white, serif font. Below it, in a smaller, white, sans-serif font, is the text "RESTORATION OF AN AUSTRALIAN DESIGNED AND PRODUCED CLOCK FROM THE 1950'S".

Ingram Bros Slave Clock

RESTORATION OF AN AUSTRALIAN
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Ingram Bros Slave Clock

RESTORATION OF AN AUSTRALIAN
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A close-up photograph of a mechanical assembly, likely a clock's toggle and drive mechanism. The image shows brass-colored metal rods and plates, a red string or wire, and a black plastic component. The background is a blue textured surface. The text "Ingram Bros Hipp Toggle and drive" is overlaid in white.

Ingram Bros Hipp Toggle and drive

RESTORATION OF AN AUSTRALIAN
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Bad Hipp Toggle engagement

RESTORATION OF AN AUSTRALIAN
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Hipp Toggle Details

RESTORATION OF AN AUSTRALIAN DESIGN
AND PRODUCED CLOCK FROM THE 1920s





Hipp Toggle cleaned and reground

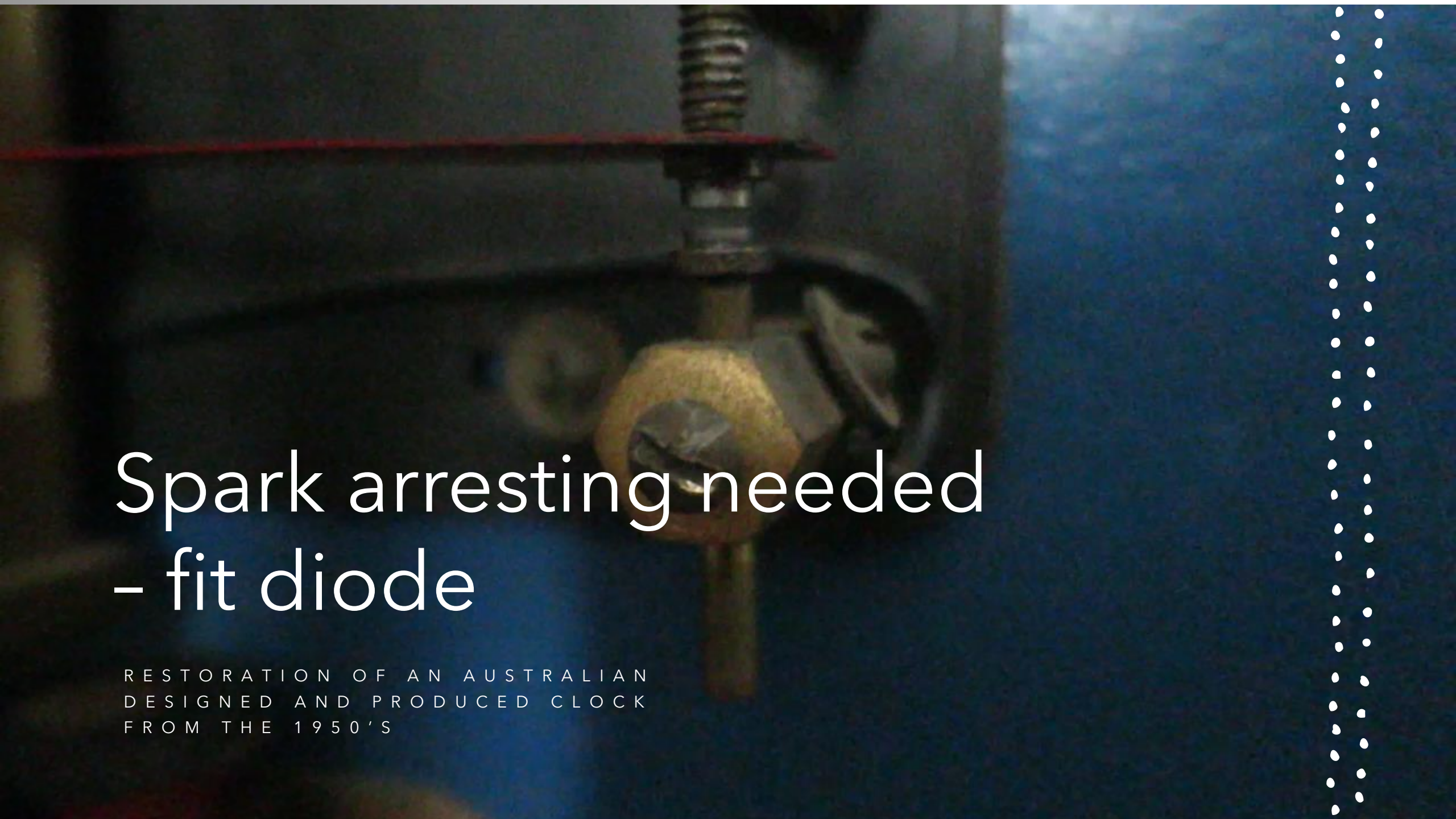
RESTORATION OF AN AUSTRALIAN DESIGNED
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A close-up photograph of a mechanical assembly, likely part of a clock movement. A thin red wire is stretched horizontally across the frame. To the right, a brass-colored metal component with a threaded rod and a hexagonal nut is visible. A black cable is also connected to this assembly. The background is a blue, textured surface. The text 'Synchronisation of hippo toggle and solenoid' is overlaid in white.

Synchronisation of hippo toggle and solenoid

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A close-up photograph of a mechanical clock movement. A brass-colored component, likely a diode or spark arrester, is visible in the center. A red wire is positioned horizontally across the top of the frame. The background is dark and out of focus.

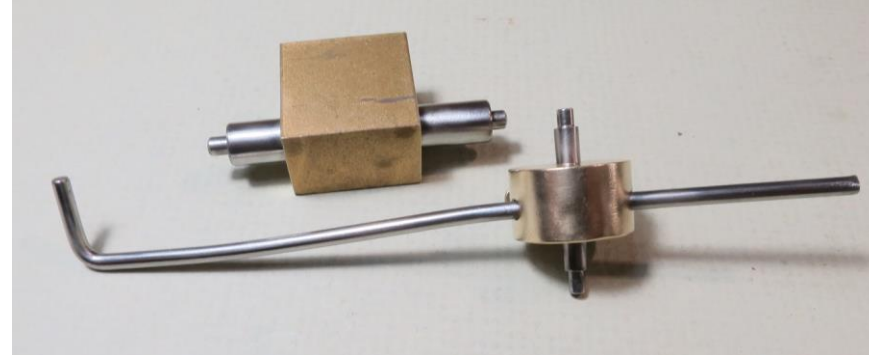
Spark arresting needed – fit diode

RESTORATION OF AN AUSTRALIAN
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A close-up photograph of a clock's internal mechanism. A large, triangular blue plate is the central focus, secured with several brass screws. A vertical brass rod passes through the center of the plate. At the top, a horizontal brass bar is attached to the rod. Below the plate, a brass component with a gear-like structure is visible. To the right, a dark, circular, polished metal part is mounted on the blue plate. The background is a dark, textured surface, possibly the clock's case.

Slave Countwheel System

RESTORATION OF AN AUSTRALIAN
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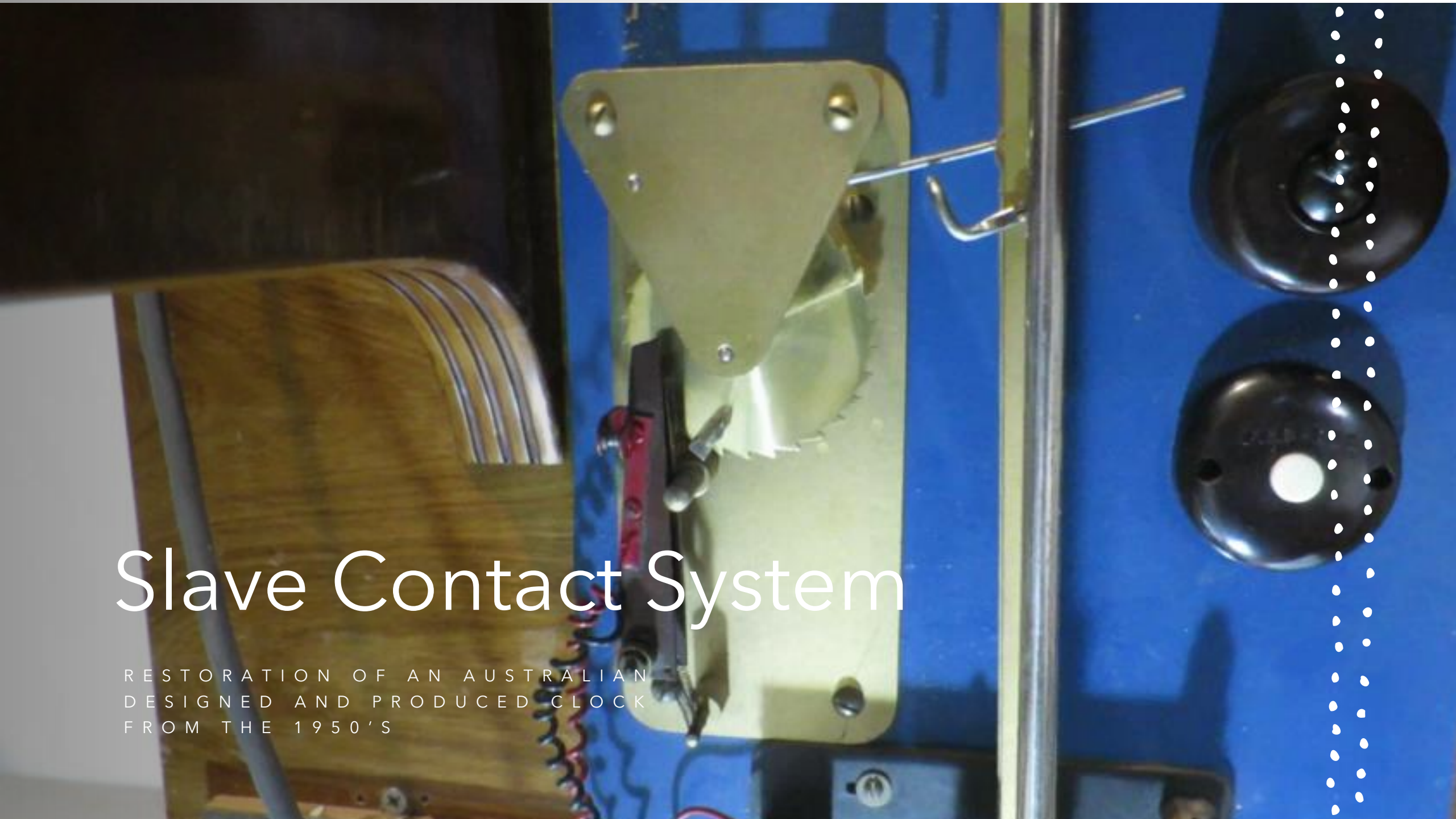
Countwheel components

RESTORATION OF AN AUSTRALIAN
AND PRODUCED CLOCK FROM THE 1



Slave Contact System

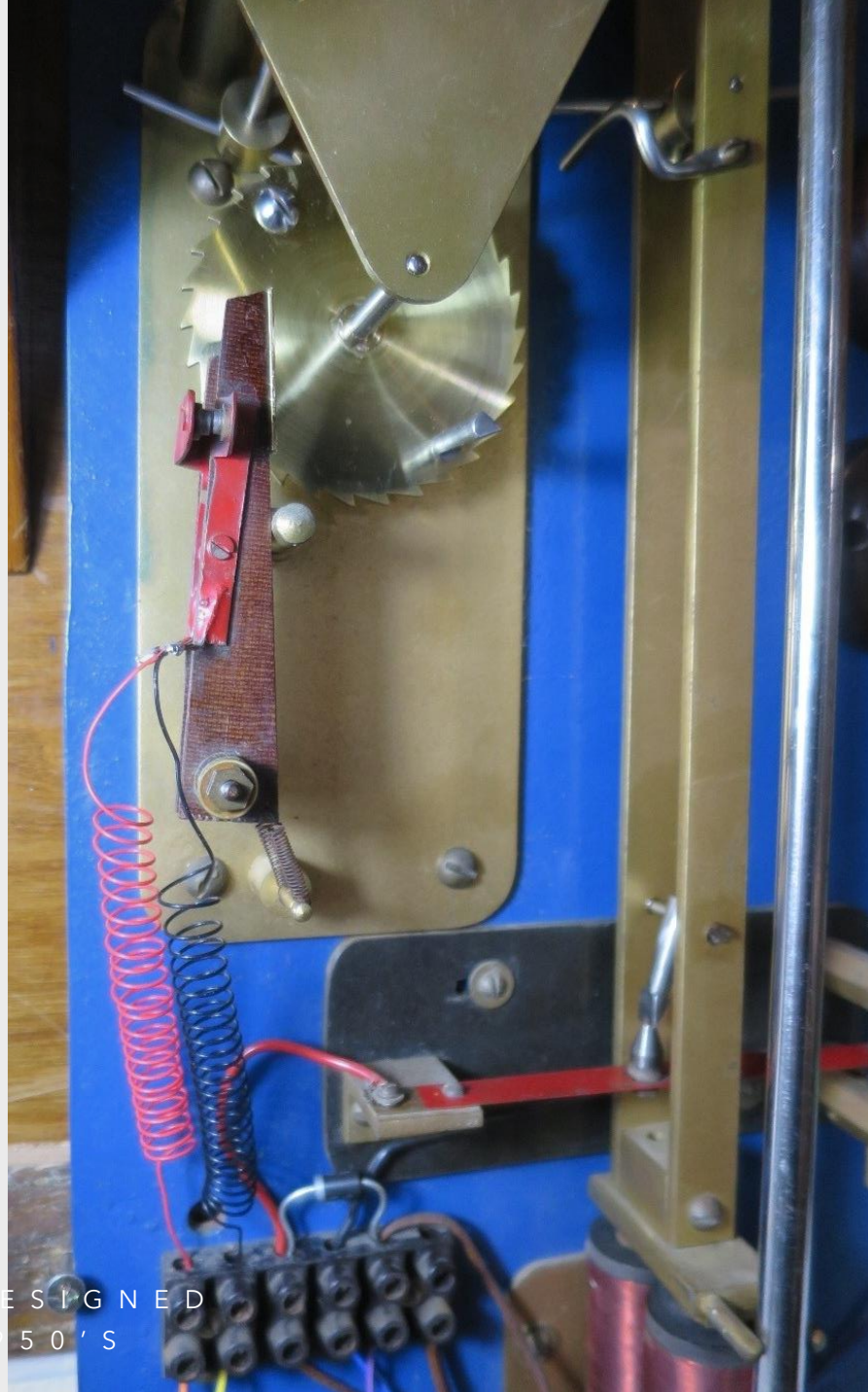
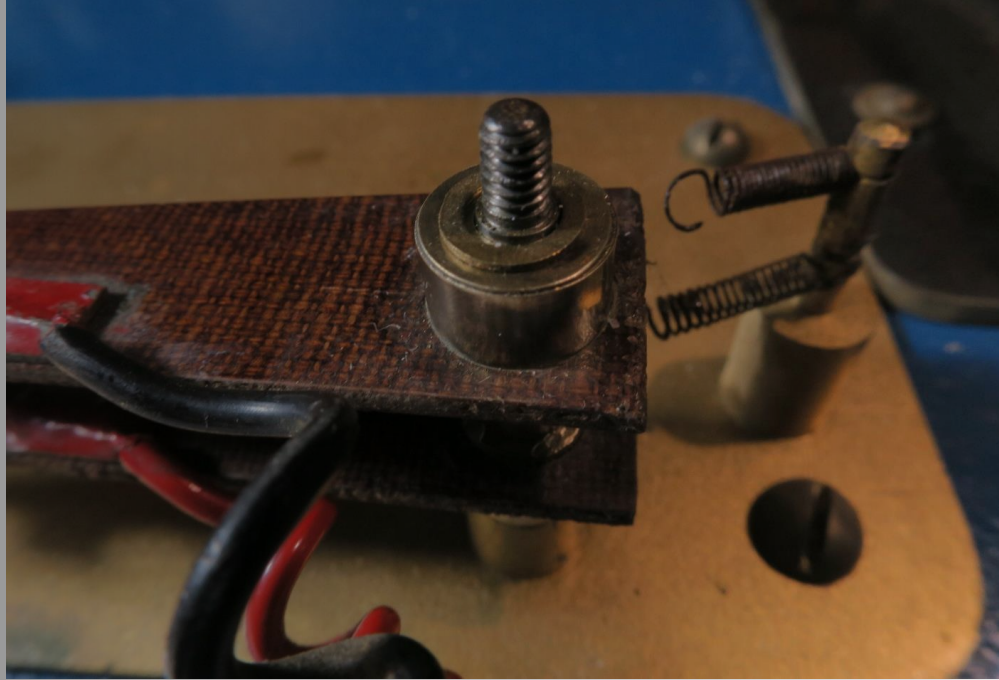
RESTORATION OF AN AUSTRALIAN
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A close-up photograph of a mechanical clock movement. A red gear is visible at the top, and a metal plate with various screws and a coiled wire is in the center. The background is a blue surface.

Slave Contacts Operating

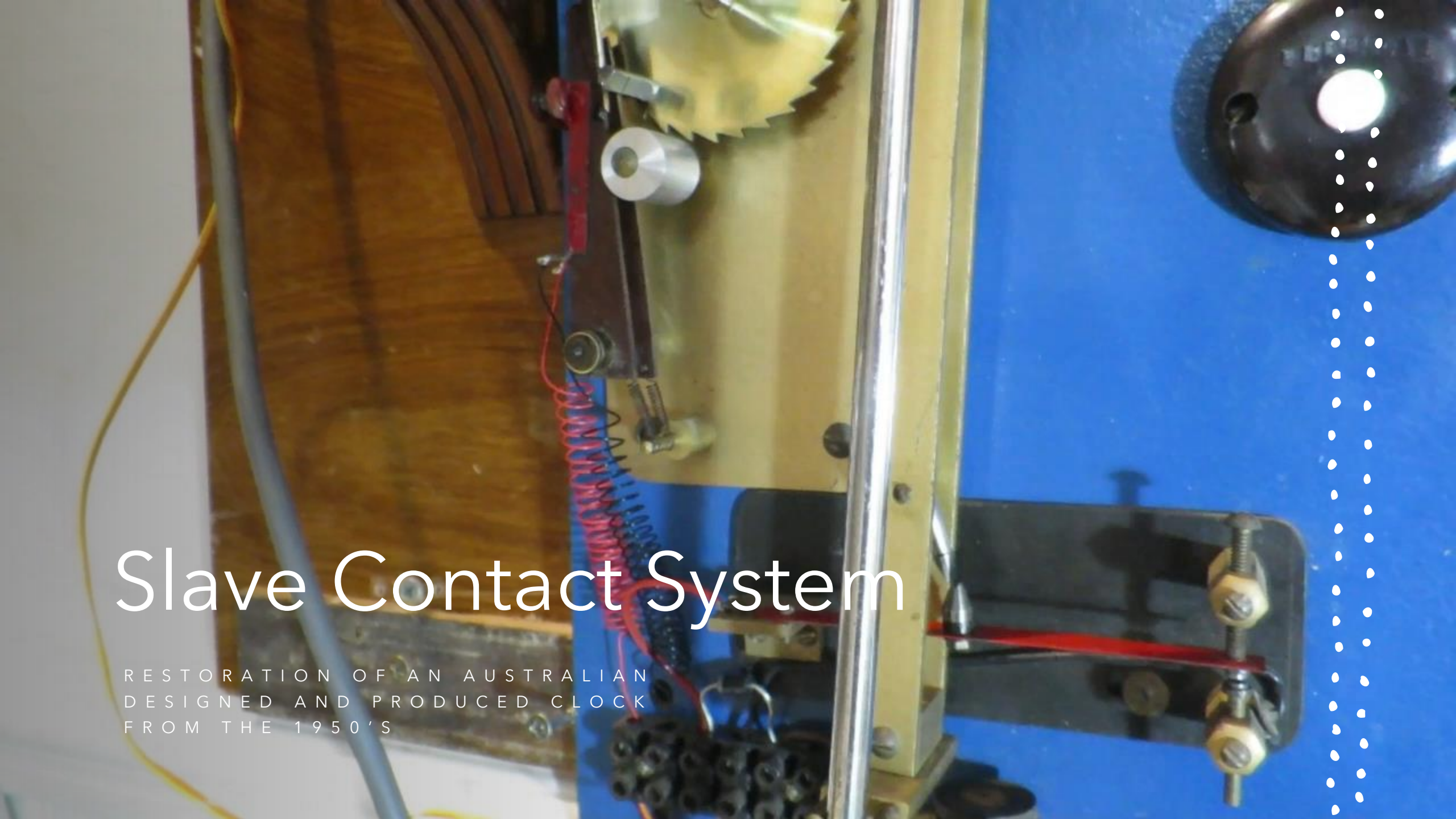
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Slave contacts

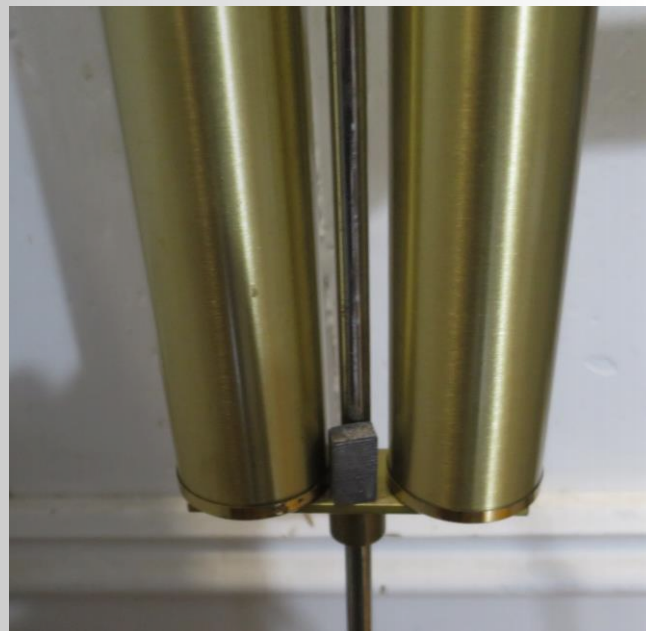
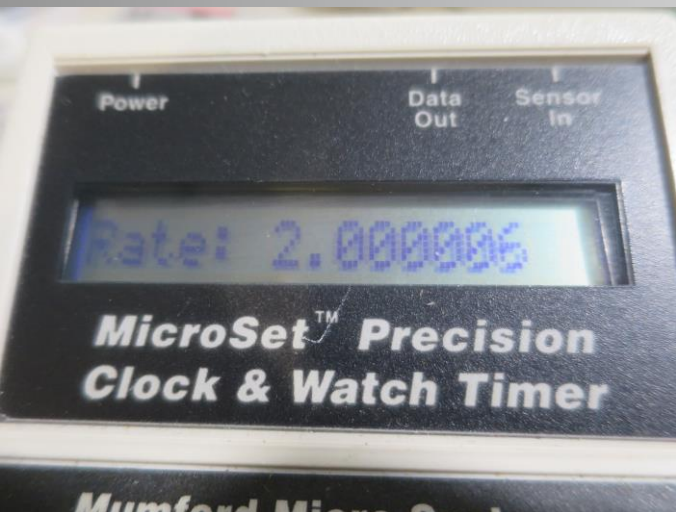
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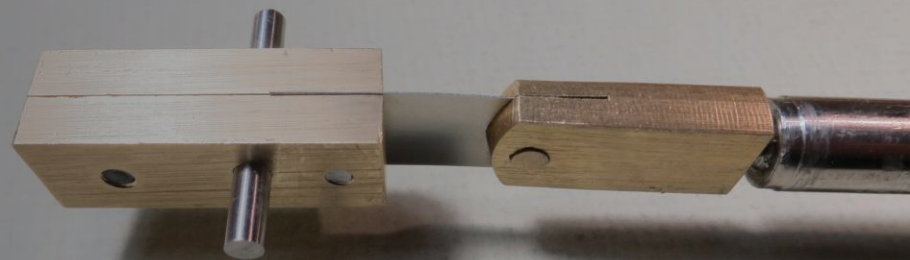


Slave Contact System

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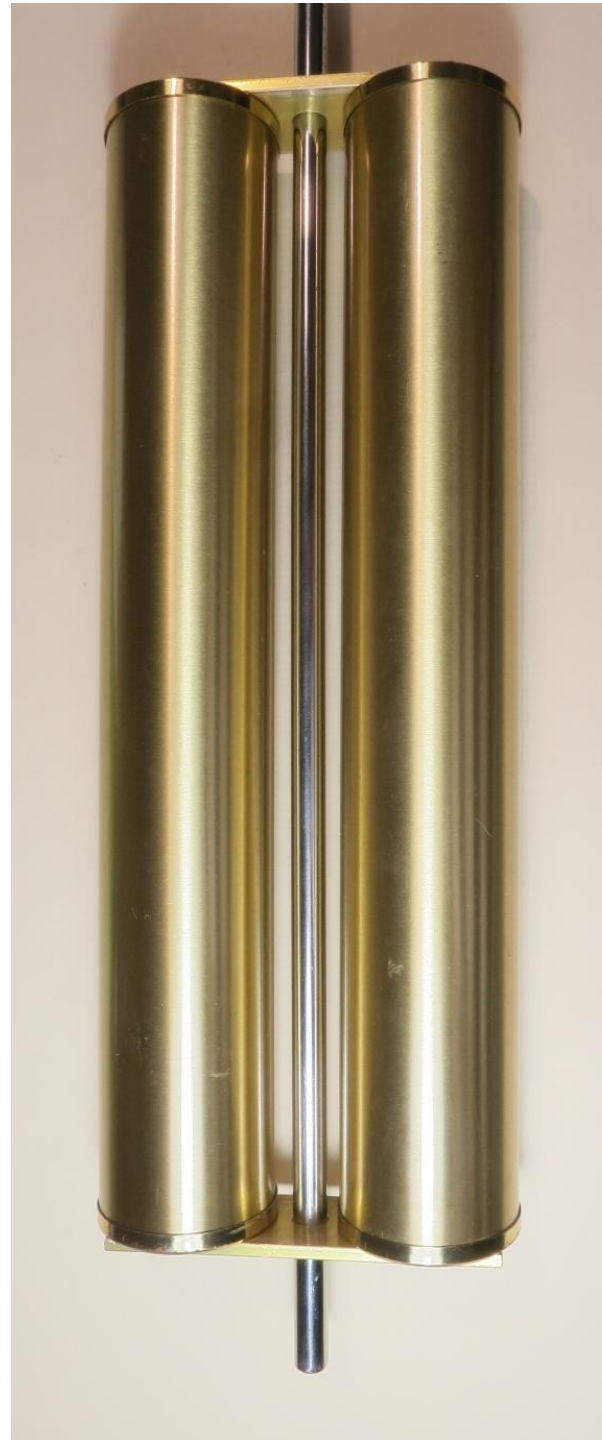


Pendulum

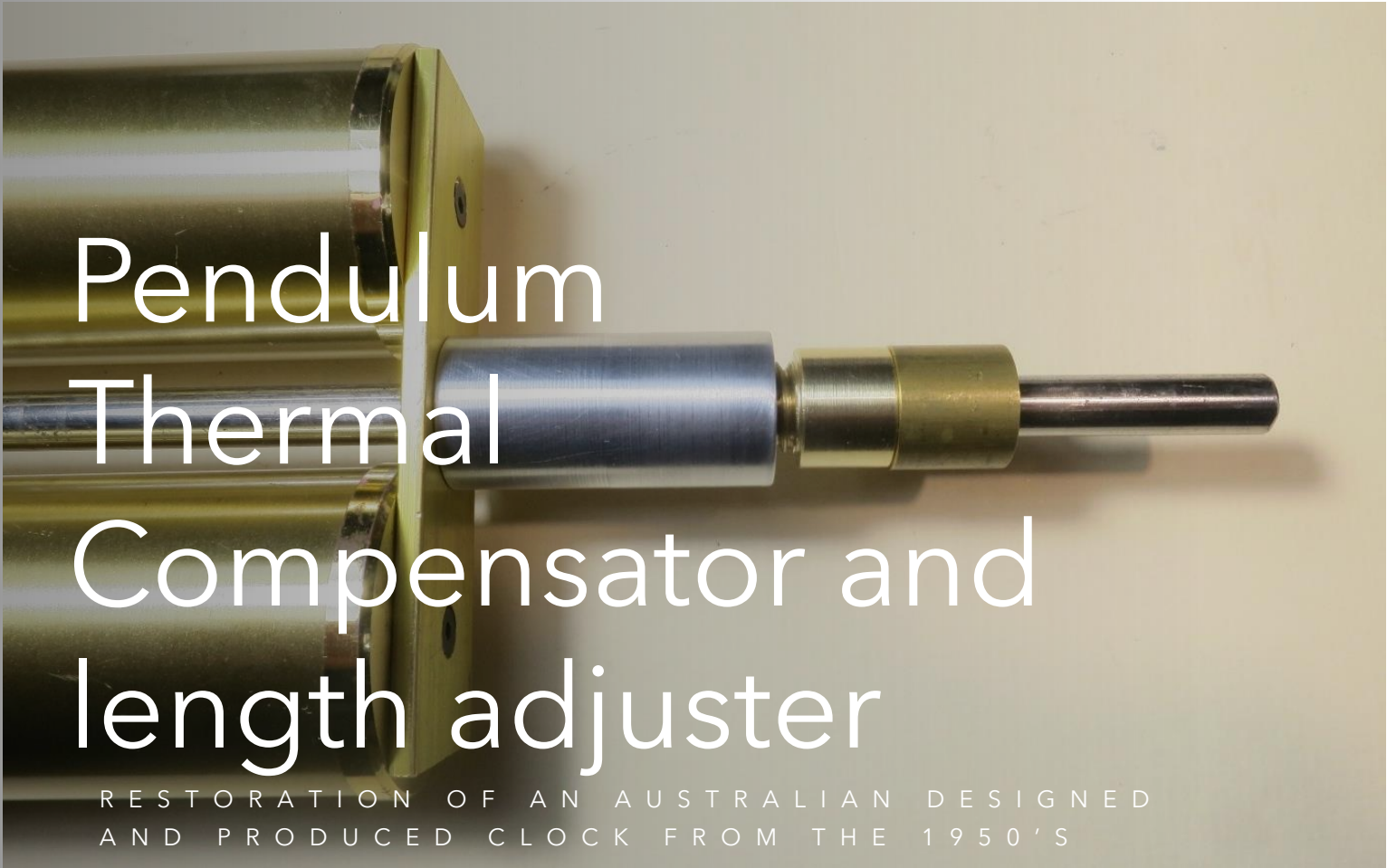


Invar rod

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Ingrams clock pendulum 60x200 and weight is about 4.5kg				
		length	CTE deg c	exp per c
Ingrams pendulum calcs				
Brass Top block to pivot		20	20.5	4.10
SS suspension spring		20	17.3	3.46
Brass bottom Block		30	20.5	6.15
Al compsatn at bottom of weight		-57	23.3	-13.28
Invar Rod		1140	1.0	11.40
CI weight		-115	10.4	-11.96
Sum				-0.13





Walnut Case Restoration

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Completed clock

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