# Flip Clock

When I was a kid, I remember going to my grandma's house, sitting on a shag carpet, and watching the numbers flip on the clock radio on the night table in my father's old bedroom. Watching a clock is a weird thing to do, I think, but I guess I was a weird kid; clocks tend to provide us with information when we need it — we glance over to make sure we're not running late or to check how much time we have left to get ready, or occasionally watch the second hand crawl by during the last few minutes of a particularly insufferable lecture. But there was something mesmerizing about this particular clock, the way you had to watch it for all 60 seconds of a minute just to make sure you wouldn't miss the minute counter flip to the next number, or, god forbid, the wonderful moment when the hour counter and the minute counter flipped in synchrony. Much like watching the letter tiles flip all at the same time on the departures board at a train station or an airport **[SLIDE]**, something about this clock-watching experience felt a tiny bit magical, especially to a kid at his grandma's house with little else to do, and *plenty* of minutes left to watch flip by. The clock itself wasn't particularly beautiful **[SLIDE]** or especially large or interesting-looking, and the clock part wasn't even as prominent as the radio part — as though this were a radio with a clock slapped on it for good measure. But I remember thinking, as a kid, that this flip clock was powered probably by magic. Of course, it wasn't **[SLIDE]**, and much of what I'll talk about today is the way the mechanics inside the clock power its flipping effect. But I'm also interested in the way that the so-called "magic" quality of the clock has persisted through the age of LED clocks, tiny clocks on our computer screens, clocks when we click a button on our phones. First, here's a short clip of two flip clocks (with seconds) in action, to give you a feel for the display. **[SLIDE - click for movie 31s]**

**[SLIDE]** The average flip clock operates on a motor, which typically runs at 60 hertz, or 60 cycles per second. Using interlocking gears, the motor operates two separate wheels, each moving at a different speed. The slower wheel takes 24 hours to make a full rotation, while the faster wheel takes one hour to complete the rotation. The wheels move continuously (rather than tick-tick-tick like many analog clocks) and 60 ticks on the minute wheel — or rather, the hour-long wheel — cause one number to flip from a booklet of number tiles each time the hour wheel reaches a minute tick. The hour wheel works in a similar way, ticking off one number for each of the 24 ticks on the wheel. **[SLIDE]** Makers of these clocks were able to keep time because they knew that the motor operated at the standard rotation speed of 60 cycles per second, allowing them to set the sizes and speeds of the wheels accordingly. The number tiles themselves are held on a

ring, like a booklet, allowing the mechanism to tick off one “page” at a time.

Of course, the flip clock comes with a number of drawbacks and potential limitations. First of all, on a typical flip clock, the wheels operating the pages can only actually move forward. **[SLIDE]** This can make daylight savings time a bit tricky, when you’d just want to set the clock back one hour but instead have to advance it by 23 hours. Not the end of the world, but somewhat inconvenient, especially compared to an analog clock. Another challenge for flip clock manufacturers is to ensure that on the hour, for example between 10:59 and 11:00, the minutes and the hour tick and flip at precisely the same moment. To achieve this, the clock uses a spring between the two wheels and a metal tab holding back the next hour page to build pressure as the hour approaches. I could try to explain this in better detail, but I’ll leave that up to Mackey from the aptly-named flipclockfans.com who does a great job of that at the end of this clip. **[SLIDE - click for movie 3m55s]**

What I find to be most interesting about this clock is the way we read it and interact with it. In many ways, the flip clock is kind of a direct precursor to the digital clock. **[SLIDE]** When we look at the clock, all we see are the numbers that directly correspond to the way we pronounce the time — unlike on an analog clock, we don’t need to measure how far the hands are from noon or multiply by 5 or any of that nonsense that stands between us, the user, and knowing exactly what time it is at a glance. There’s nothing for us to decode when we look at a flip clock. The information is just *there*. The display presented to us by the machine — a similar machine to the one inside a traditional analog clock — is concise, clear, and instantly readable. So when the first flip clocks appeared in the 1940s, they were somewhat revolutionary, particularly in their reproducibility and relative portability. Of course they’re not *too* portable **[SLIDE]**, but someone could buy one at a store for a relatively small amount of money and carry it home without a problem. **[SLIDE]**

As a kid, of course, I was aware of and surrounded by digital LED clocks, but I never watched one tick by the way that I watched the flip clock. In our digital age, I find that we are increasingly fascinated by complicated mechanical functions that perform seemingly simple tasks, like automatically flipping through pages to keep time. Because of this fascination, combined, I imagine, with a sense of nostalgia, there have been a number of modern attempts to digitally recreate the feeling of a flip clock. **[SLIDE - click for movie]** One such attempt is a watchface designed for the Android Wear watch platform, which you can see here. Oddly, the digital recreation, which does not suffer from an issue of asynchrony between hours and

minutes, seems to go out of its way to make sure that each digit changes separately. This watchface brings the effect of the desk clock to a tiny screen on your wrist, of course doing so a bit more successfully than this attempt **[SLIDE].**

**[SLIDE]** Another flip clock representation serves as a popular screensaver for mac and pc users, using large cards to display the time while the computer is idle. You can see the line separating the half-pages of each number, and the animated flip each time the minutes change.

One developer created a JavaScript flip clock library for web designers and coders to include in their websites, either as clocks or as countdowns. **[SLIDE]** Here's what that looks like. **[flipclockjs demo]**

I'd like for us to take some time just to watch this digital replica, and when you're ready, share your thoughts on it. Does it do a good job recreating the flip clock experience? Is that even a necessary goal? What purpose does digitally recreating an analog experience serve? Could this animation do a better job? Does this clock make you feel anything, or is it like any other ordinary digital clock?

And with that **[reenter]** we come back to the original radio flip clock in my grandma's house. To me at least, it seems that the flip clock occupies an important and possibly unique space between the tangible, mechanical world — motor, gears, springs, ticks, pages — and the digital world, where what you see is what you get, no interpretation required.


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AM 3 15
FM 88 92 96 100 104 108 MHz
AM 53 65 80 100 130 160 x10kHz

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| LONDON | 1205 | BOARDING |
| PARIS | 1210 | BOARDING |
| SYDNEY | 1210 | ON TIME |
| HONG KONG | 1215 | BOARDING |
| FRANKFURT | 1220 | ON TIME |
| | 1325 | ON TIME |


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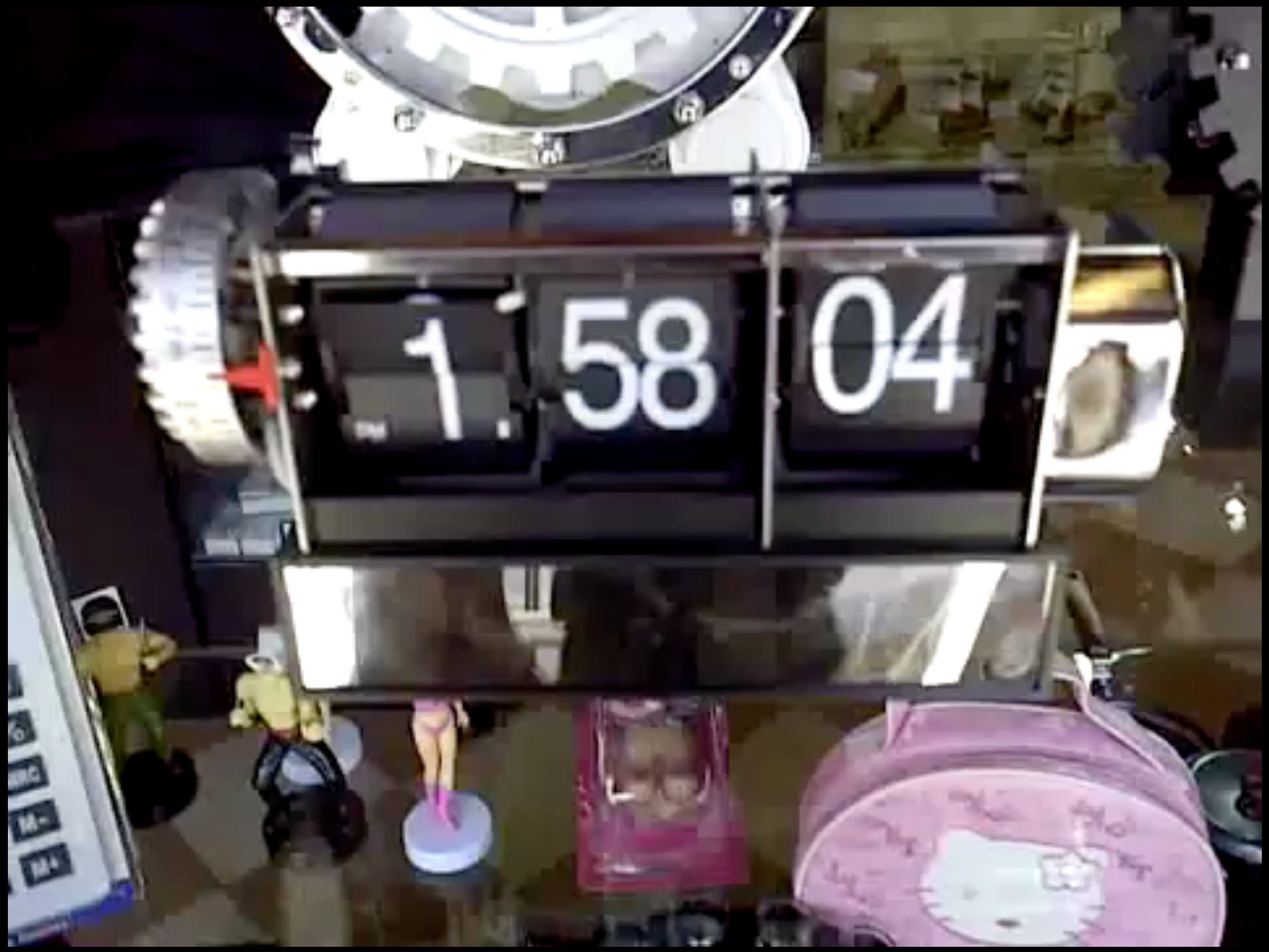
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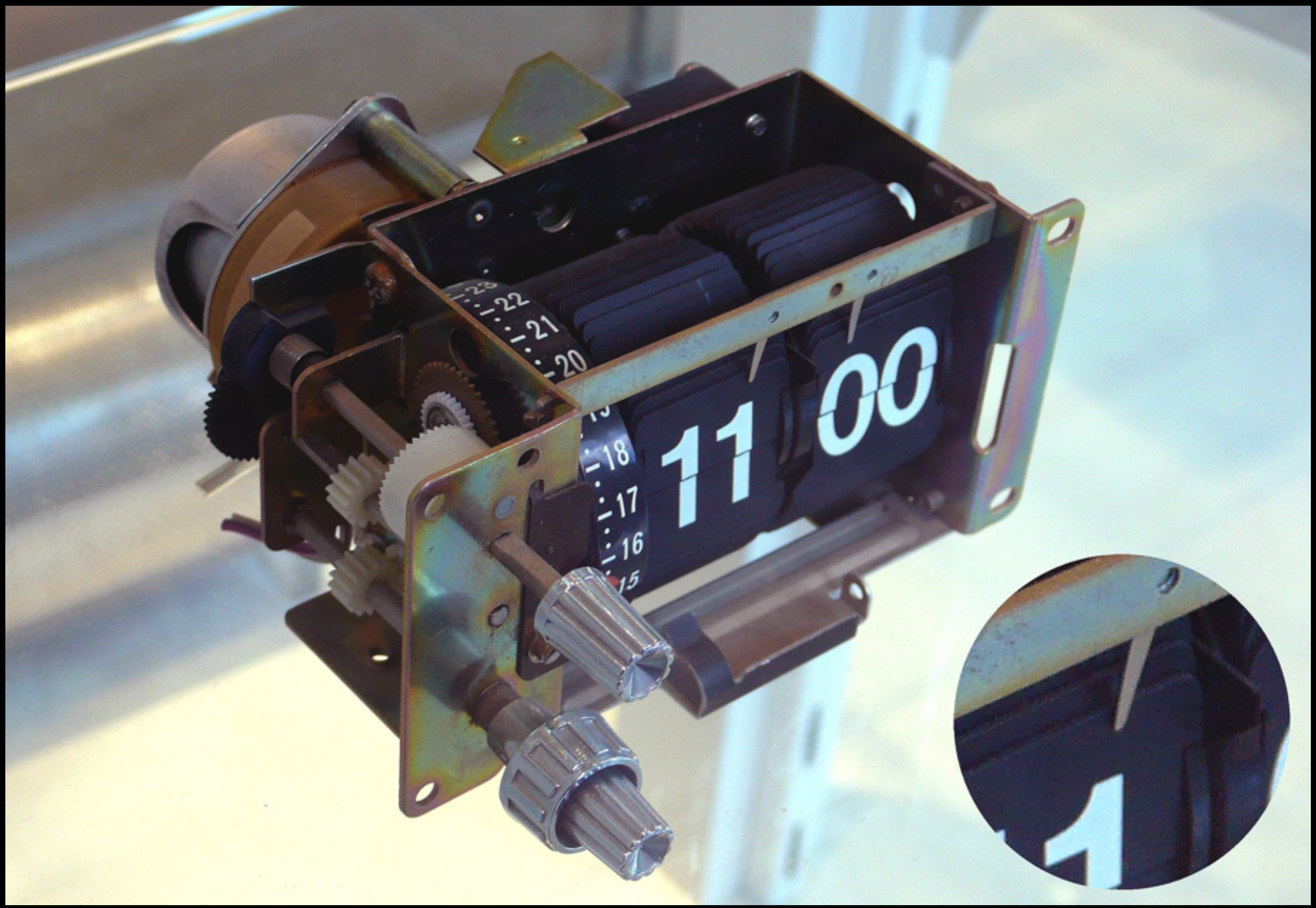
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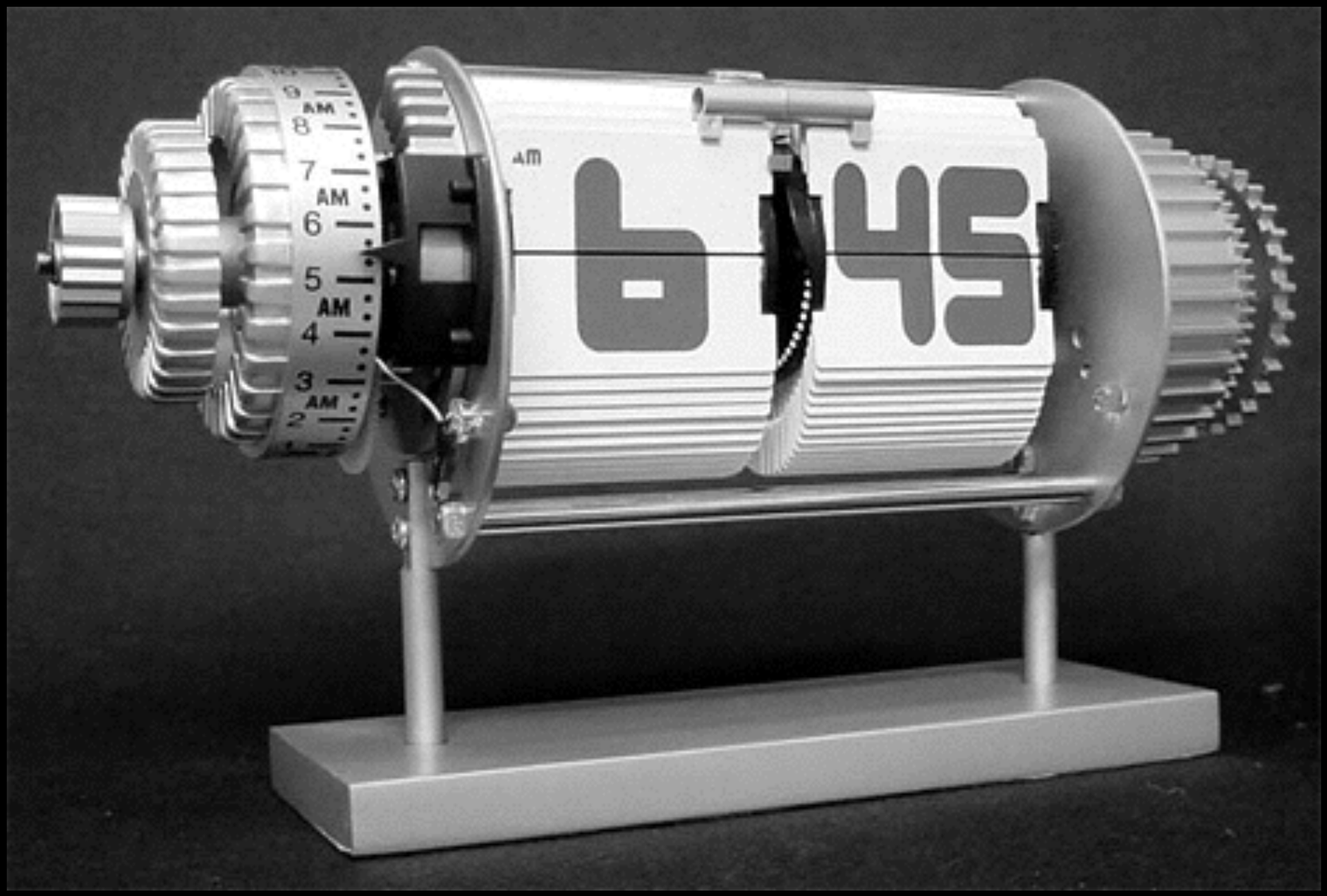
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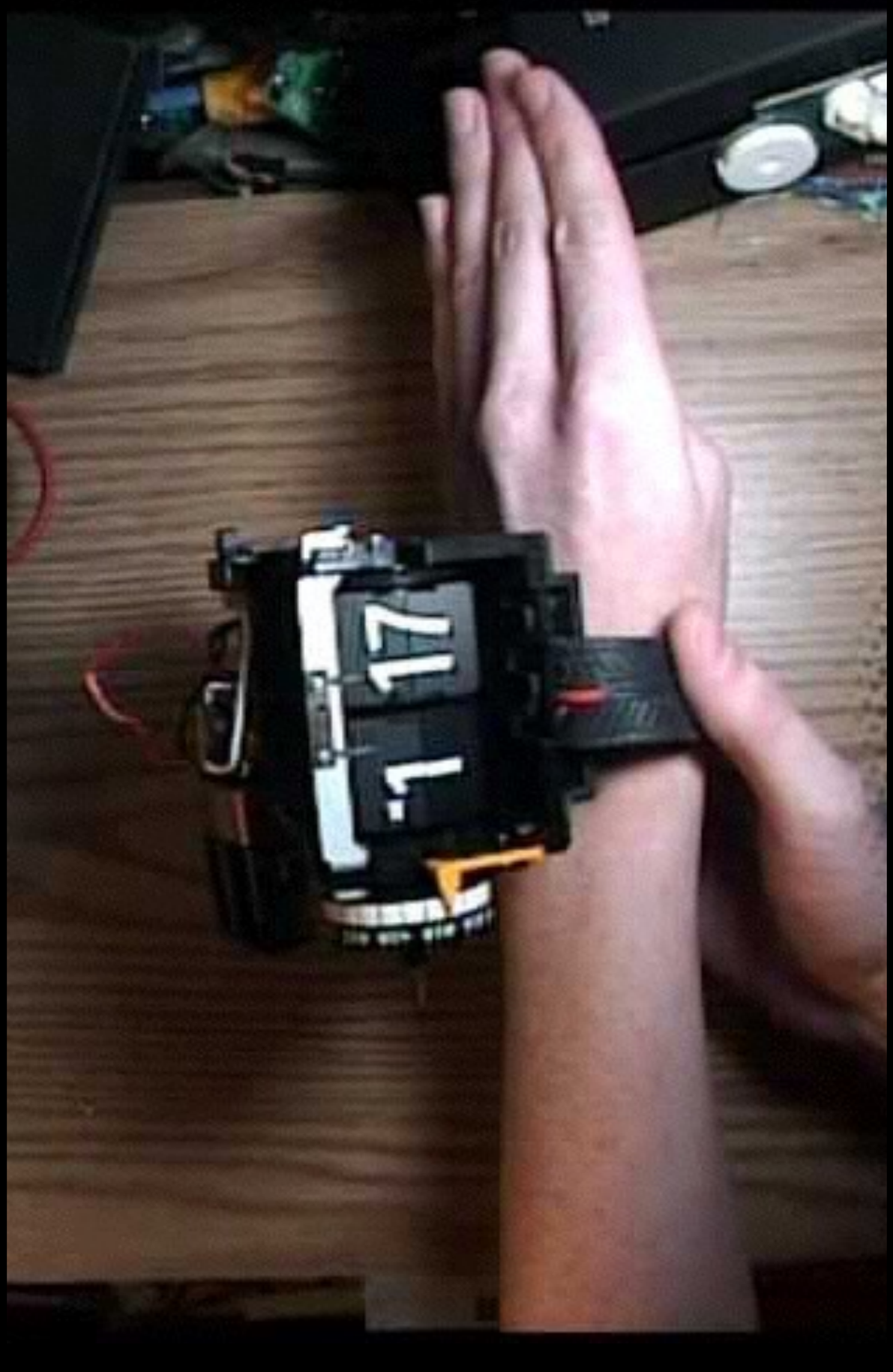


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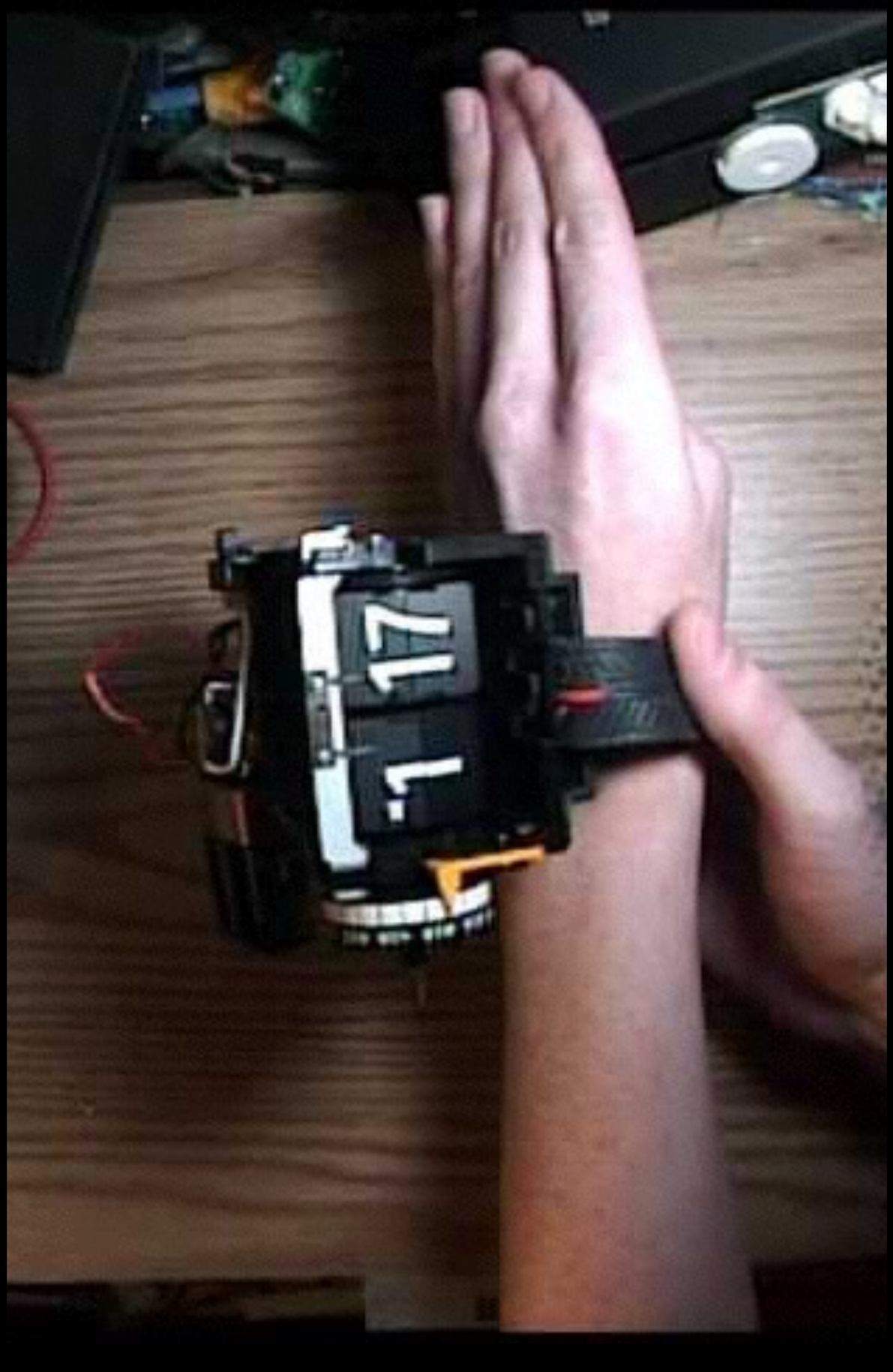

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fliqlo.com/#about-screensaver

**fliqlo** the flip clock screensaver

for Mac/Windows

**Features**

- Scalable to any size
- Switchable 12/24-hour clock (without le
- Support for OS X Yosemite and Retina

**System Requirements**

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- for Windows: 95/98/Me/NT4/2000/XP/V

**Price**

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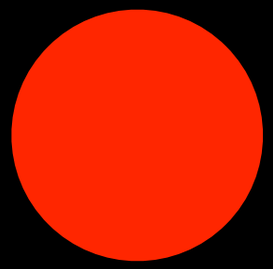
PM 12 22

Screen Saver Options...

Start after: 1 Minute | Show with clock | Hot Corners... | ?

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