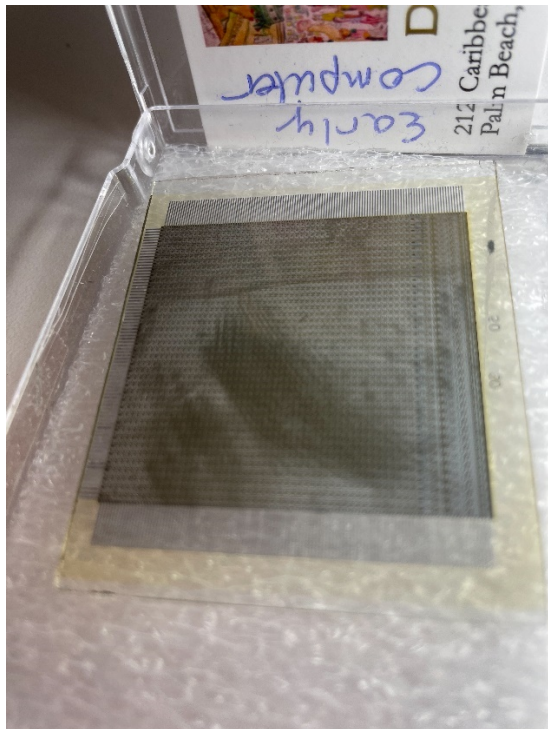


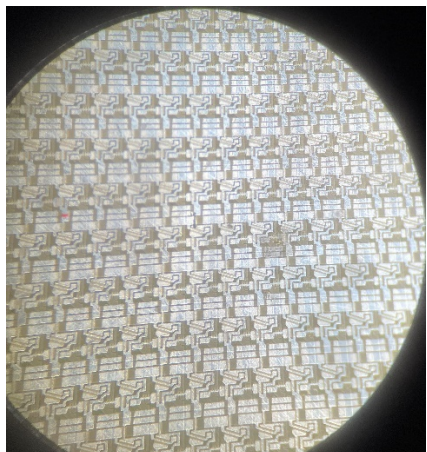
## Assessment of Buck Device, 6/15/23

After consulting the Dudley Buck papers, and looking at other cryotron devices in the collection of the Computer History Museum, my best guess would be that the Buck device, pictured below, is an array of thin-film cryotrons, quite possibly forming flip-flop circuits, created by depositions onto a glass plate.

The Buck device:



Detail of the Buck device:



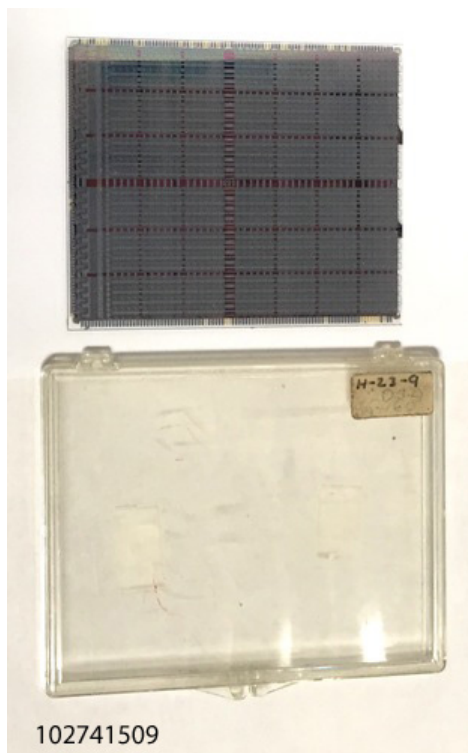
The provenance of the Buck device is that it was the possession of the late Herbert Teager, who stated that it was created by, and given to him, by Dudley Buck.

After consulting the Dudley Buck Papers, it appears that Buck first moved into thin-film cryotrons at the end of 1957. This would date the Buck device to 1958 or after, if I am correct that it is a thin-film cryotron array.

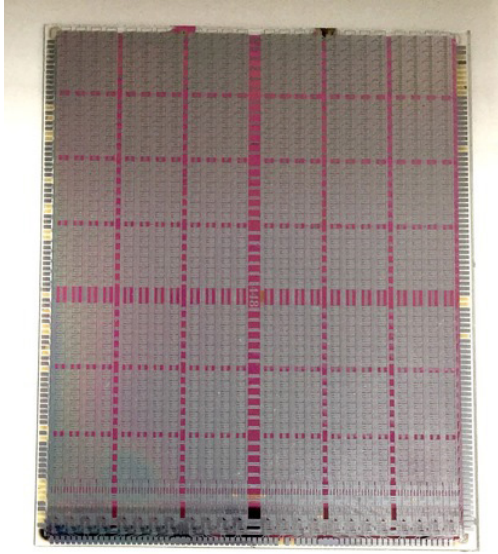
Al Slade, who collaborated with Dudley Buck in the second half of the 1950s, donated a thin-film cryotron array of flip-flop circuits to the Computer History Museum:

<https://www.computerhistory.org/collections/catalog/102741509> This array, deposited on a glass slide, dates to 1960 and is quite similar to the Buck device.

The Slade device:



Detail of the Slade device:



102741509

As the Slade device is more refined than the Buck device, I would guess that the Buck device is an earlier, more experimental device. Thus, I would guess that it dates from 1959. There is also the possibility that the Buck device was made in collaboration with Slade as part of their efforts together in this period.

If I am correct that the Buck device is a thin-film cryotron array, then these are evaporated metals deposited, most likely through a stencil or mask but possibly also through an etching process, on a glass plate.

If the date of 1959 is correct, then the Buck device is an example of an early integrated circuit, and part of the flurry of experimentation around microcircuitry in the 1950s and 1960s out of which the silicon integrated circuit also emerged.