A crash program to build ventilators

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Ongoing speculations about a crash program to mass produce ventilators quickly and cheaply.

1 The Bird Mark 7

The Bird Mark 7 Respirator (now it would be called a ventilator) was introduced in the 1950s, and quickly put the iron lung out of business.

In 2009 Barack Obama awarded its inventor Forrest Bird the National Medal of Technology and Innovation. The Bird Mark 7 is still in use in some places today (if only as a way to deliver aerosolized medication).

The relevant patents have presumably long since expired.

Bird Mark 7 patents

- [Patent 1]
- [Patent 2]

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Instead of trying to build a replica, we could try to mimic the way it functions. The Mark 7 is an impressively simple machine, without electrical parts, but its operation could be mimicked using electronic sensors, valves, or whatnot. I expect an imitation could be built from parts lying around the physics or engineering department.

2 High Frequency Oscillating Ventilator

An alternative ventilation technique imitates the panting of a dog: Effectively, quick shallow breaths allow simultaneous diffusion of $O_2$ into and $CO_2$ out of the lungs. Two models of HFOV are sold by CareFusion, the 3100A for infants and the 3100B for adults.

I do not know the status of the relevant patents. (Our dog contends any such patents should be invalid because of ‘prior art’.)