

of these fractional parts are heated to the kindling points, the entire heap bursts into flames.

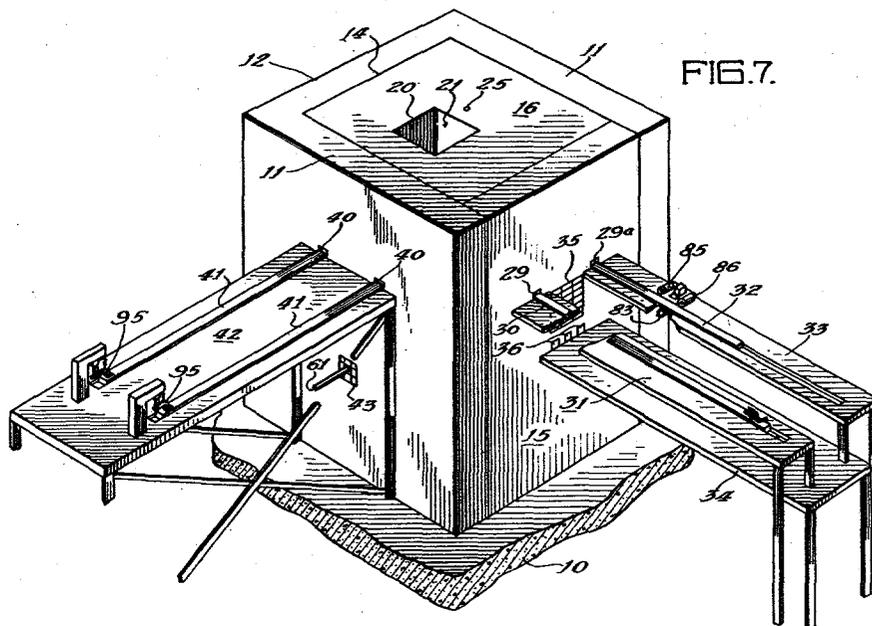
A similar process takes place in an atomic pile such as was constructed under the West Stands of Stagg Field at the University of Chicago in 1942.

The pile itself was constructed of uranium, a material that is embedded in a matrix of graphite. With sufficient uranium in the pile, the few neutrons emitted in a single fission that may accidentally occur strike neighboring atoms, which in turn undergo fission and produce more neutrons.

These bombard other atoms and so on at an increasing rate until the atomic "fire" is going full blast.

The atomic pile is controlled and prevented from burning itself to complete destruction by cadmium rods which absorb neutrons and stop the bombardment process. The same effect might be achieved by running a pipe of cold water through a rubbish heap; by keeping the temperature low the pipe would prevent the spontaneous burning.

The first atomic chain reaction experiment was designed to proceed at a slow rate. In this sense it differed from the atomic bomb, which was designed



Patent Number 2,708,656 was issued on May 18, 1955, to Enrico Fermi and Leo Szilard. The invention it covered included the first nuclear reactor, Chicago Pile No. 1 (CP-1). Although the patent was applied for in December 1944, it could not be issued until years later when all the secret information it contained had been declassified. This drawing was part of the patent application.