

UNITED STATES CAPITOL WASHINGTON DC *PICTURES*

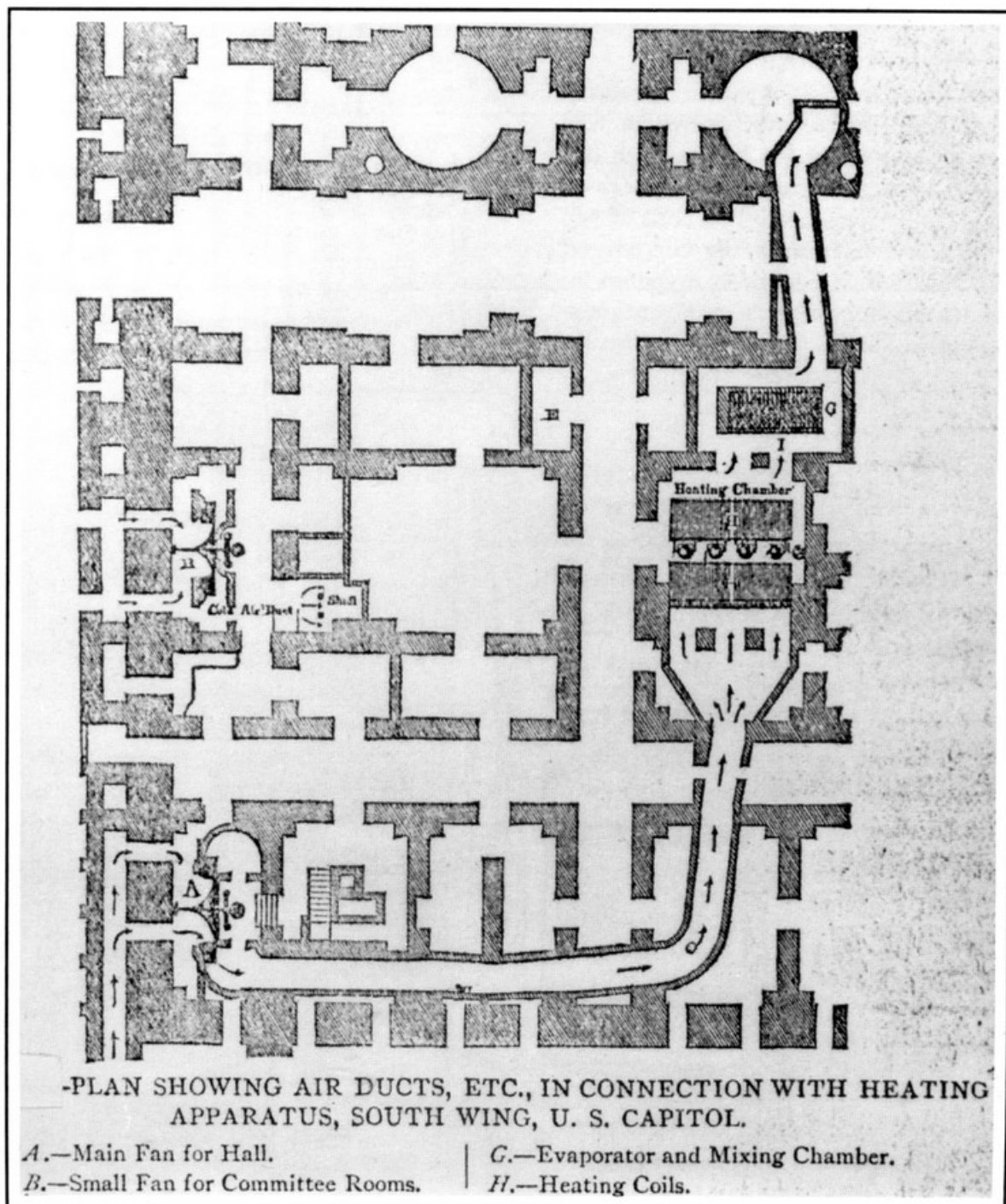


Figure 7-21 U.S. Capitol, plan showing air ducts, etc., in connection with heating apparatus, south wing (from J.S. Billings, 1886, p. 124).

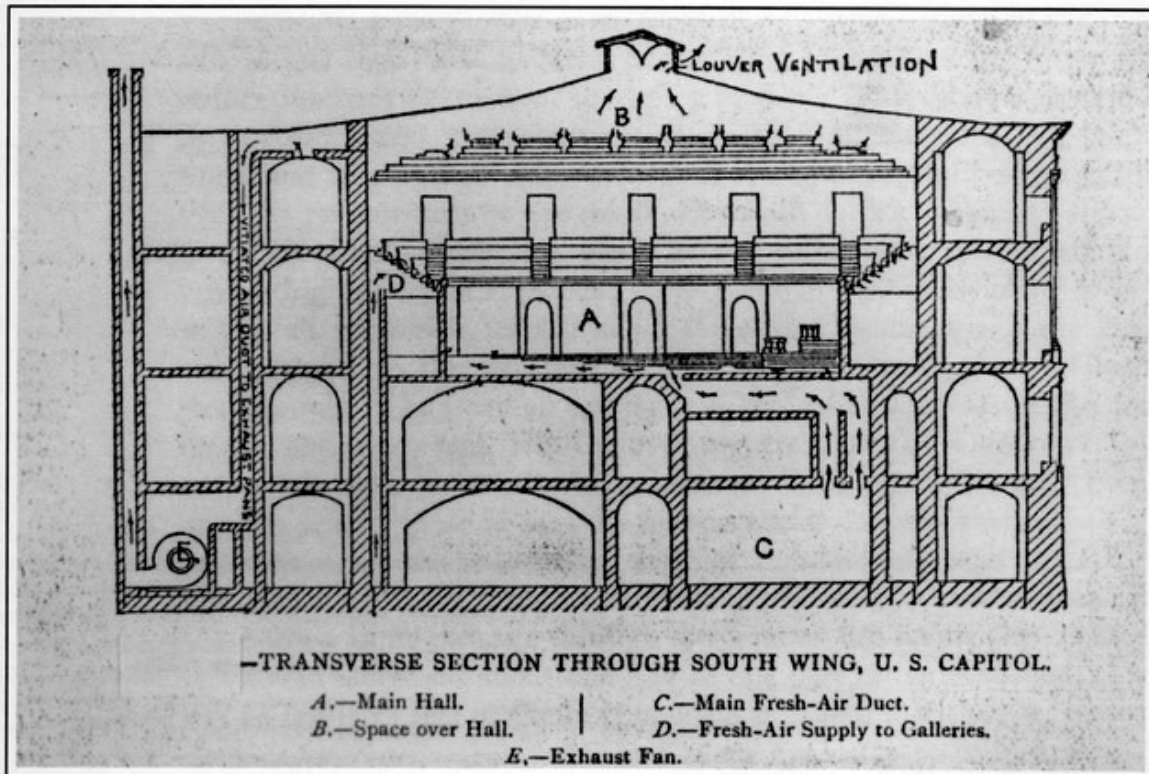


Figure 7-22 Transverse section through south wing, U.S. Capitol (from J.S. Billings, 1886, p. 125).

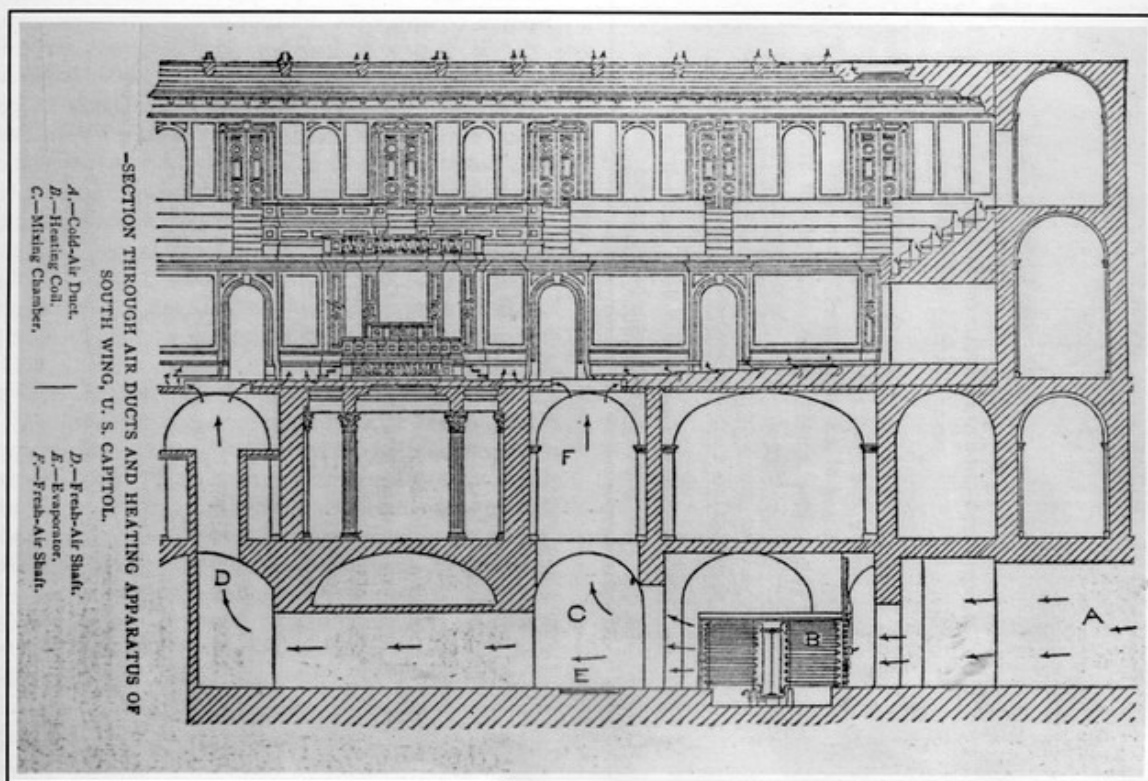


Figure 7-23 Section through air ducts and heating apparatus of south wing, U.S. Capitol (from J.S. Billings, 1886, p. 126).

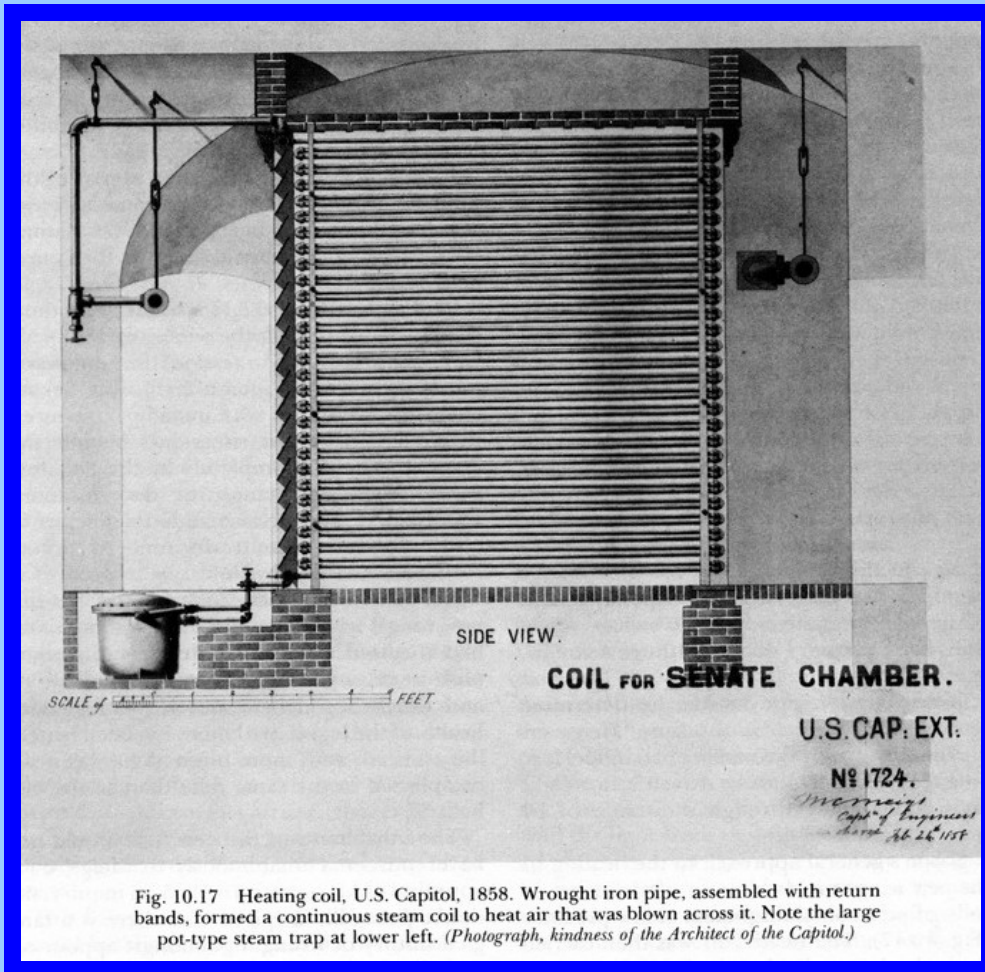


Fig. 10.17 Heating coil, U.S. Capitol, 1858. Wrought iron pipe, assembled with return bands, formed a continuous steam coil to heat air that was blown across it. Note the large pot-type steam trap at lower left. (Photograph, kindness of the Architect of the Capitol.)

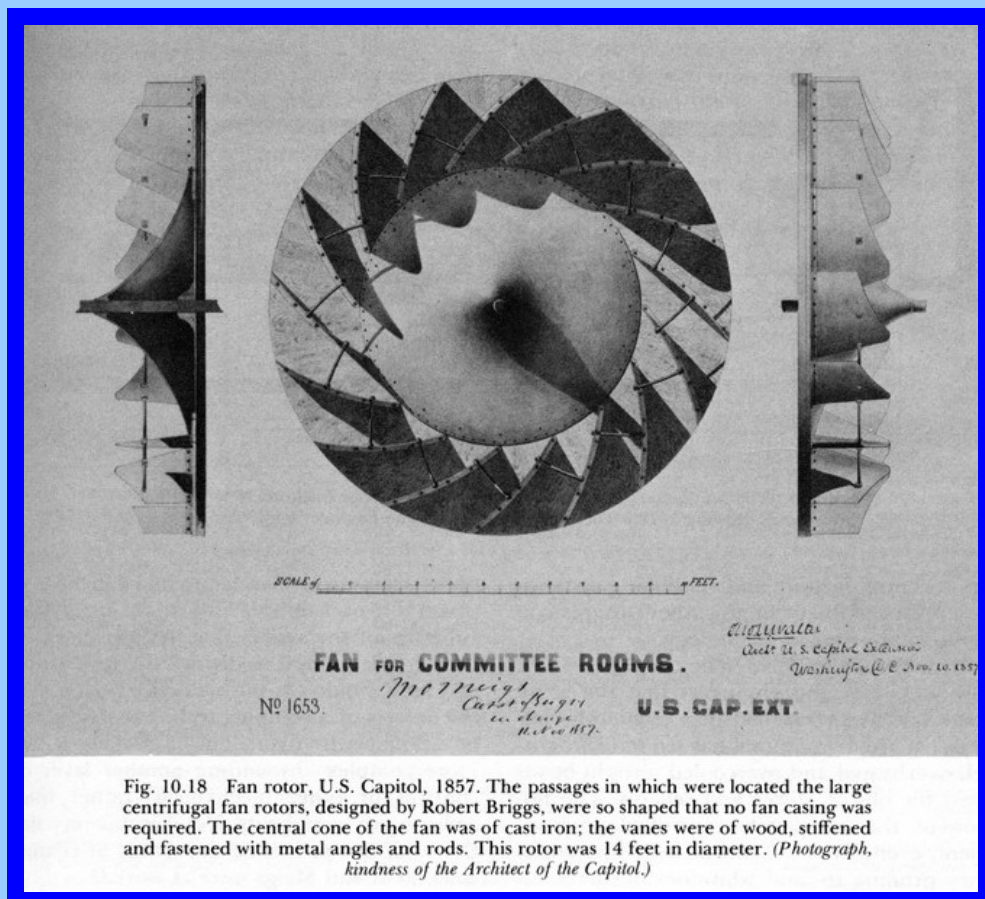


Fig. 10.18 Fan rotor, U.S. Capitol, 1857. The passages in which were located the large centrifugal fan rotors, designed by Robert Briggs, were so shaped that no fan casing was required. The central cone of the fan was of cast iron; the vanes were of wood, stiffened and fastened with metal angles and rods. This rotor was 14 feet in diameter. (Photograph, kindness of the Architect of the Capitol.)

Artificial Light and Artificial Air

On April 4, 1853, after construction of the wings was well under way, Captain Meigs was directed by the Secretary of War to restudy the arrangement for warming and ventilating the House and Senate chambers—as well as their acoustics. Six weeks later, after a visit to leading theaters and other notable places of assembly in the East, a drastic change in the floor plan of both wings was recommended. The two great halls were thereupon moved away from exterior walls with windows that could open, to become interior spaces lit only through glass ceilings and ventilated through air ducts. Four and a half years later Meigs, speaking of the new installations, reported: “This apparatus is one of the most extensive and complete in the world. Its arrangement and details have required a vast amount of study, of scientific and mechanical knowledge, and experience, in which I have been ably assisted by the manufacturers, Messrs. Nason & Dodge, and their agents.”

The halls were soon in use and in the summer of 1858, Speaker of the House James L. Orr complimented Meigs on the acoustics:

The ventilation is equally successful. The densest crowd in the galleries, during the most protracted sittings, breathed a fresh atmosphere, free from all heaviness or impurity.

The heating apparatus is so perfect that the engineer had only to be notified what temperature was desired, when in a few minutes it was supplied.

The arrangement for lighting the hall is admirable.

Not a burner is seen, and yet such a flood of softened light is poured down through the stained glass ceiling of the hall that it was difficult to distinguish when the day ended and the night commenced.

The hall and its fixtures are a splendid triumph of your professional skill, and will ever remain a proud monument to your genius.

But Congress was not all that pleased and as time went by, the euphoria diminished. As early as March, 1860, there was an abortive move in the Senate to move their chamber back to the outer walls with windows.

Four years later a great deal was heard in the House along the same lines. One congressman declared that “this is an unfit place to do business in, especially when the furnaces are going . . . it is impossible to stay in this House any length of time without going out to seek the fresh air . . . Members must breathe, they must have fresh air. Here the air is artificial and the light is artificial.” Mr. Trumbull later (July 23, 1866) thought that the Hall should be moved back to the exterior of the building. “What a relief it would have been during the late hot and oppressive weather . . . to have the benefit of windows upon the exterior . . . to look out upon the world and not to be shut up here like prisoners in a jail or school-boys in a school-room.”

The problem was studied and restudied for years afterward as new experts and new types of equipment were considered. These issues which arose here so early are almost universal today and very much alive.

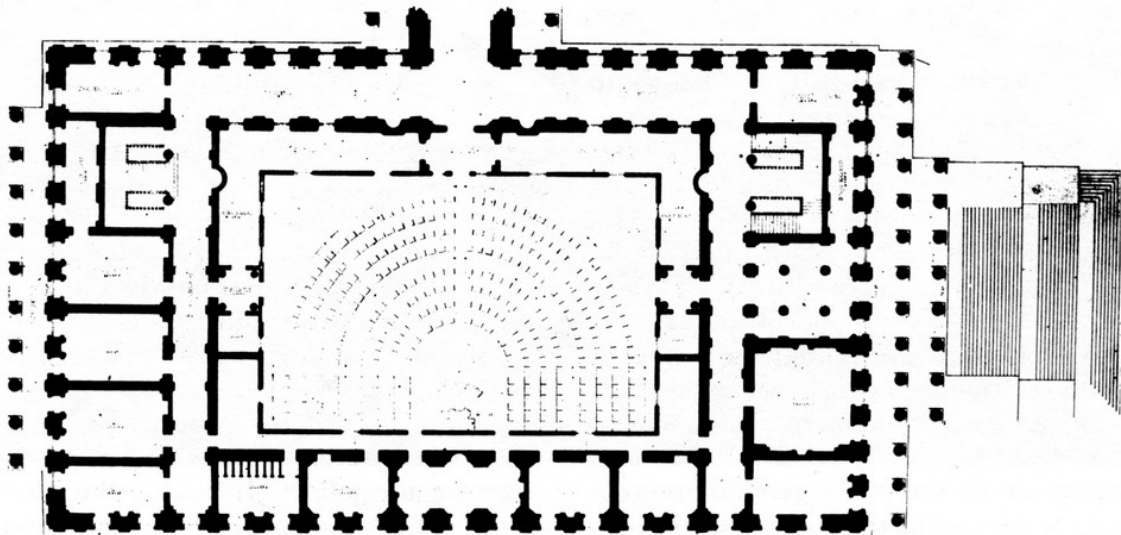


Fig. 12.25 “Plan of Principal Story, South Wing.” The new floor layout approved by the President on June 27, 1853, moved the Hall of Representatives to the middle of the wing.

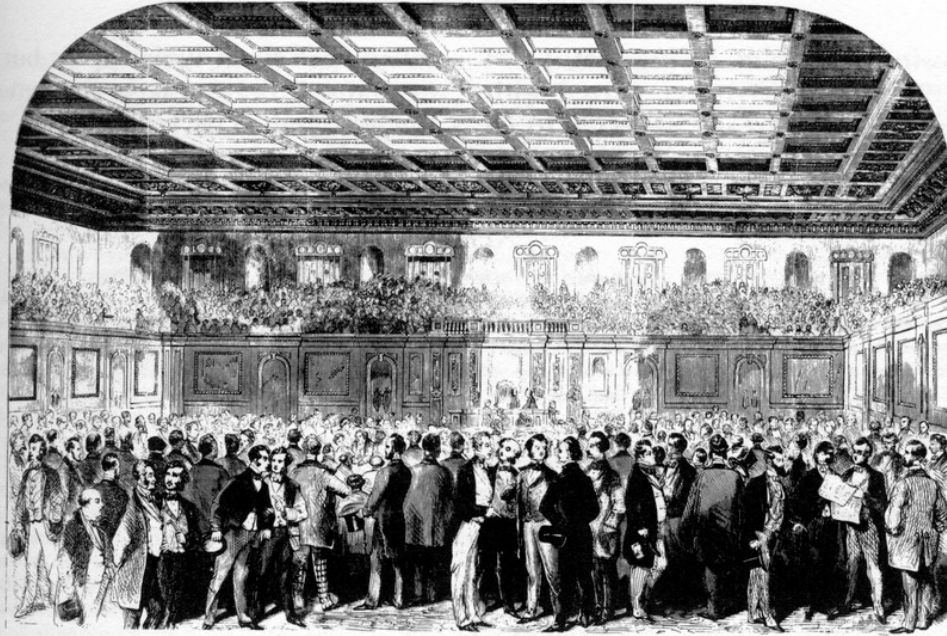


Fig. 12.26 The House of Representatives meeting in its new hall December 3, 1860.
Harper's Weekly for December 15, 1860.

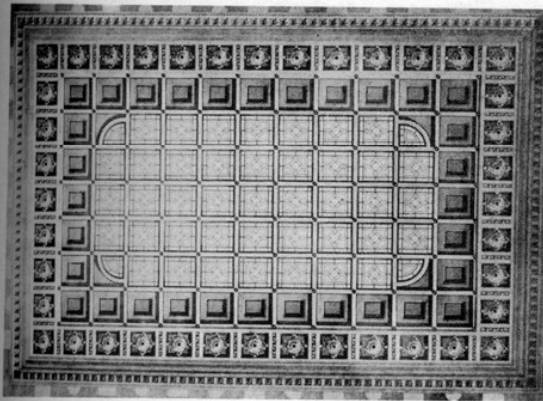


Fig. 12.27 Plan of ceiling dated March 28, 1856. The visible ceiling was of cast iron elements cast in New York and stained glass from Philadelphia. Drawing dated March 28, 1856.

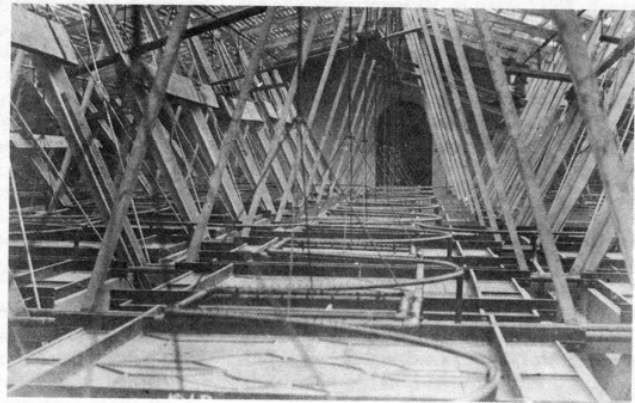


Fig. 12.28 Photograph dated Feb. 2, 1858. Between the glass ceiling and the skylight was a blazing inferno. Suspended gas pipes were arranged in curves with "the jets near enough together to light each other from a small perpetual burner."

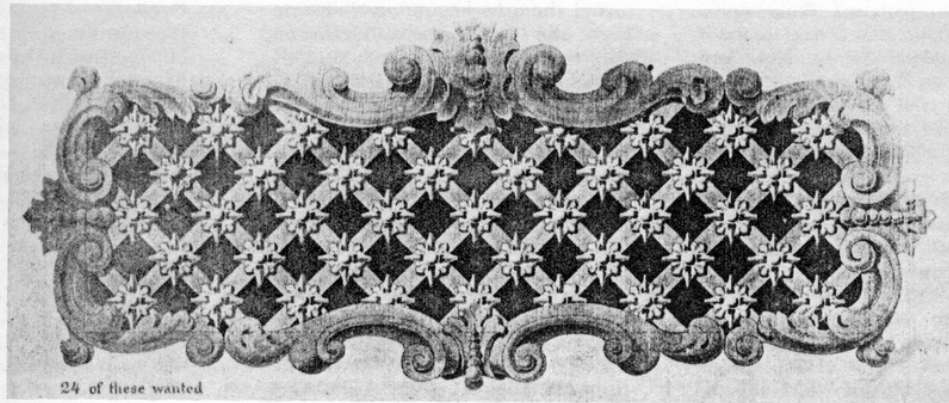
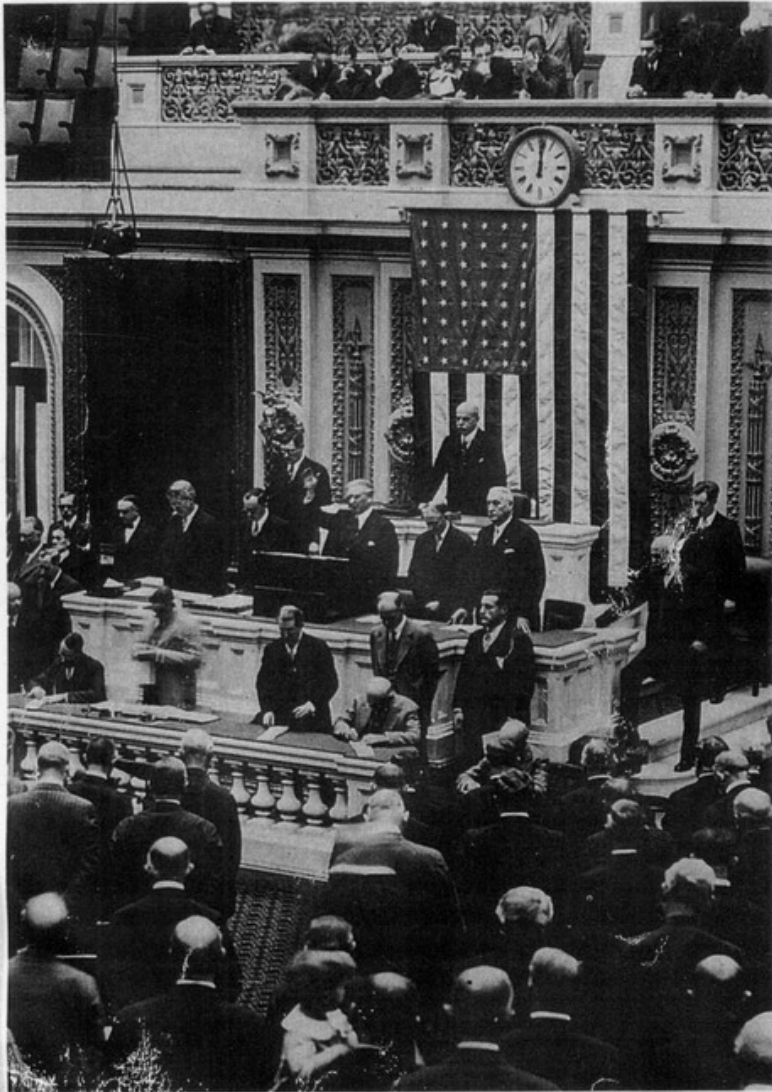
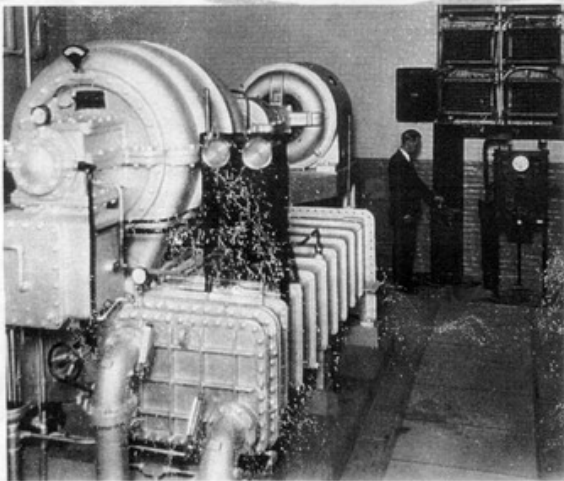


Fig. 12.29 Ornamental design for ventilating register.



A Carrier system was officially inaugurated on the opening of the Short Session of the U.S. House of Representatives in December, 1928.

*
Roof scene of Carrier equipment for the U.S. House of Representatives, 1929. By using ancient fireplace flues and wasted spaces in the attics and below the floors, Carrier apparatus distributed conditioned air from the unit in the basement through air ducts in the ceiling.



Carrier's centrifugal refrigeration unit in the Capitol basement.

