

Aug. 6, 1929.

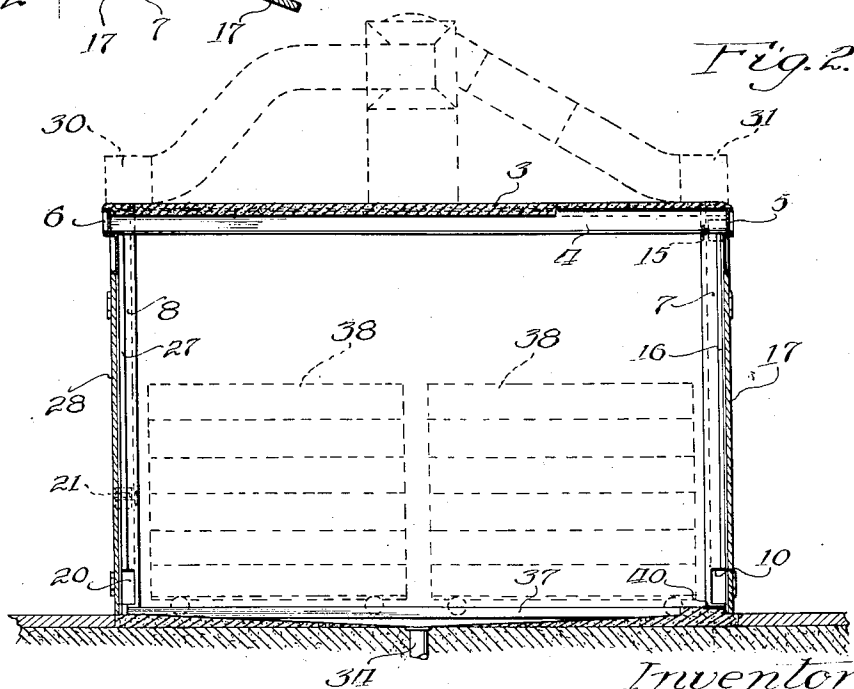
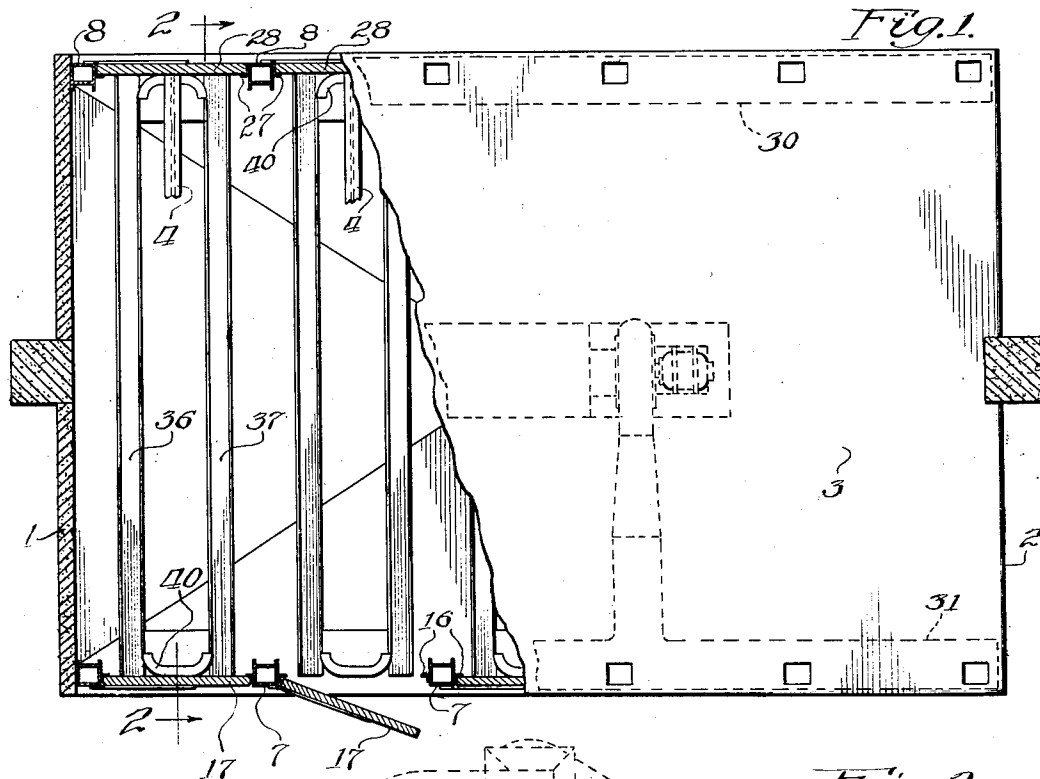
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CONDITIONING ROOM CONSTRUCTION

Filed June 3, 1927

2 Sheets-Sheet 1



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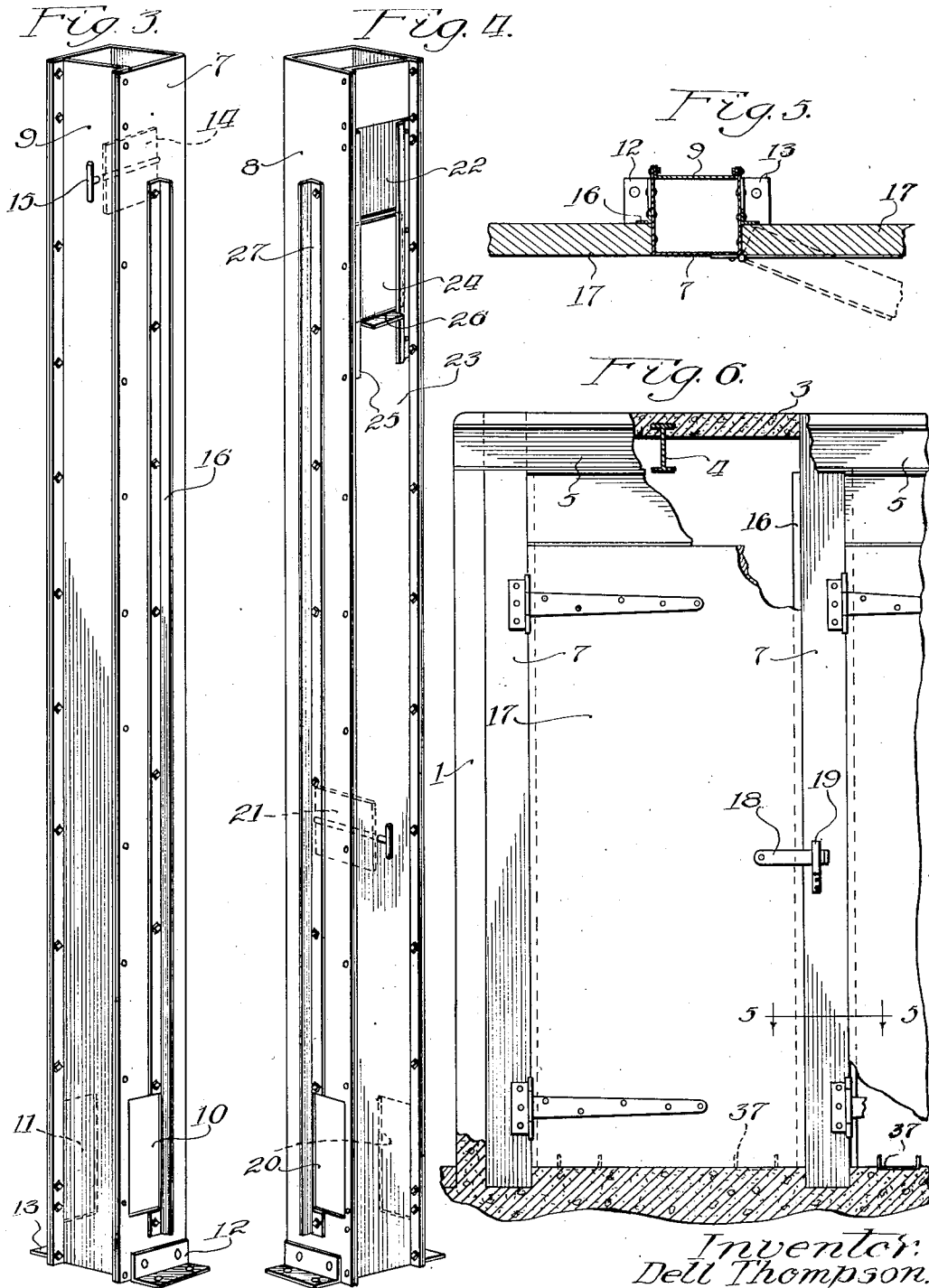
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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CONDITIONING-ROOM CONSTRUCTION.

Application filed June 3, 1927. Serial No. 196,247.

The main objects of this invention are to provide a conditioning room in which the inlet and outlet air conduits form the door posts or mullions and are an integral part of the supporting structure of the room and in which the air ducts are of heavy and solid construction and located so that they will not protrude beyond the inner walls of the room to provide a conditioning room that is particularly suited for use in bakeries and the like as a proof-box in which bread dough is placed to raise preparatory to baking; and to provide a conditioning room having an improved system of air distribution which tends to counteract the heat losses and air disturbances due to door leakage and faulty insulation.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which:—

Figure 1 is a top plan view of the conditioning room, a portion of the top being broken away to show the interior construction, and an air conditioning and circulating unit for the room being diagrammatically illustrated in dotted lines.

Fig. 2 is a section taken on line 2—2 of Fig. 1, showing proof-box trucks and an air conditioning and circulating unit in dotted lines.

Fig. 3 is an enlarged view in perspective of one of the inlet conduit mullions.

Fig. 4 is an enlarged view in perspective of one of the air outlet conduit mullions.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 6.

Fig. 6 is an enlarged front elevation of a portion of the room, parts thereof being broken away to illustrate the construction.

Heretofore in the construction of conditioning rooms of this character, it has been customary to form the inlet and outlet air conduits of light weight sheet metal construction and place these conduits on the interior walls of the room in such manner that they protrude from the walls, the consequence being that very often the trucks which carry the goods into and out of the room bump into the conduits and thus mutilate them or loosen them from the wall.

Other constructions have been made in which the air conduits were formed in the usual manner but were imbedded in the walls of the room. As it is customary to construct walls of this kind of a room from concrete

or the like so as to be of fire-proof construction, the conduits so placed and built into the walls were not readily removable or replaceable when rusted out or otherwise rendered unserviceable.

The particular room herein illustrated is designed for use as a proof-room for bakeries. In the construction shown in the drawings, the conditioning room comprises a rectangular box-like structure having end walls 1 and 2 formed preferably of concrete or other fireproof material, a top 3 of the same material supported on a series of I-beams 4 which in turn are secured to and supported by channel shaped headers 5 and 6 at opposite sides of the room. The headers 5 and 6 are secured to a series of inlet and outlet door stanchions or mullions 7 and 8 respectively which are disposed along the opposite sides of the room.

The mullions 7 are in the form of heavy channel irons, the side walls and the web of which are all substantially of the same dimension so that it is substantially square in cross section. The open face of the mullion 7 is closed by a shallow channel member 9, the side walls of which are bolted or otherwise suitably secured to the side walls of the mullion adjacent the outer longitudinal edges of the side walls thereof and form an inlet air duct for the proof-room. The side walls of the mullions 7 have outlet openings 10 and 11 formed therein at a point adjacent the lower ends thereof.

Small angle irons 12 and 13 are riveted or otherwise suitably attached to the lower end of each of the mullions 7 for providing attachment to the floor of the proof-room. The passage of air through the mullion conduit is regulated by a manually operable damper 14 located near the upper end of the mullion and having a protruding handle 15 for controlling its position.

Each of the mullions 7, with the exception of the ones located at the extreme ends of the room is provided with an angle iron 16 attached longitudinally to the medial portion of each of its side walls to form door-stops for doors 17 which are hinged to the mullions. The mullion on the extreme right end of the room as viewed in Fig. 1 is provided with only one angle iron 16 fastened to the side wall thereof for acting as a door-check for the door hinged on the next adjacent mullion. A latch 18 is pivoted on each of

the doors 17 and is adapted to coact with a hook 19 fastened on the next adjacent mullion for holding the doors in closed position.

The mullions 8 are of practically the same construction as the mullions 7, being provided with openings 20 adjacent their lower ends, and a manually operable damper control 21 located approximately midway thereof. These mullions, however, are each provided with an additional rectangular opening 22 formed in the front closure channel member 23 adjacent the upper end thereof. A panel 24, mounted to slide in guideways 25, is provided for regulating the size of the opening 22. This has a handle in the form of a flange 26 bent out at right angles to the panel.

The side walls of the mullions 8 are provided with channel irons 27 for the same purpose as those on the mullions 7, a series of outlet doors 28 being hinged to the mullions, each door when closed coacting with the door-stop on the next succeeding mullion.

An air conditioning unit is shown in dotted outline mounted on the top side of the ceiling 3 of the room. The intake 30 of this air conditioner communicates with the upper ends of the outlet mullions 8 and the discharge 31 of said conditioner communicates with the upper ends of the mullions 7.

The floor of the conditioning room is preferably sloped from the four sides to the center and is provided with a drain pipe 34 to facilitate washing and cleansing of the room.

Disposed crosswise in the room and in registry with each of the inlet and outlet door is a pair of flat shallow channel bars 36 and 37, mounted with their side flanges extending upwardly, to form a pair of tracks for guiding the wheels of the proof-room trucks 38 shown in dotted outline in Fig. 2. The adjacent side walls or the channels 36 and 37 are cut away for short distances at each end thereof and a curved guide member 40 is disposed therebetween in position to engage the wheels of the proof-box trucks and guide them into the channels.

In the operation of the device, the unitary air conditioner discharges heated and conditioned air into the upper ends of the conduit mullions 7, the amount passing through each mullion being regulated by the dampers 15. The conditioned air passes down through the mullion and out through the openings 10 and 11 adjacent the floor of the proof-room. Air is withdrawn from the room by the suction of the unitary air conditioner which communicates with the upper end of each of the mullions 8. The amount of air withdrawn from adjacent the ceiling of the

room is regulated by the sliding panels 24 and the amount drawn from near the floor of the room is regulated by the manually operable dampers 21.

The conduit mullions or stanchions for the doors being an integral part of the conditioning room structure and being relied upon as a main part of the supporting structure for the ceiling of the room, they are necessarily of heavy and rigid construction. This heavy and rigid construction is very desirable as heretofore in the construction of the rooms the air ducts were made of relatively light galvanized sheet iron which easily rusted out. A proof-room constructed in this manner will give service for a great length of time. Since the front panels are removable, the interior of the conduits can be cleansed, repainted at suitable intervals of time without difficulty.

By utilizing the door mullions as air conduits, the warm conditioned air is discharged at the bottom of and close to the doors and thereby counteracts the heat losses due to leakage around the doors or lack of insulation of the doors.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims:

I claim:

1. In a conditioning room, an air conduit forming a door mullion, said conduit mullion having an opening therein communicating with the interior of said room, and a door mounted on the said conduit mullion.

2. In a conditioning room, a series of air inlet conduits forming door mullions on one side of the room, said conduit mullions each having an opening communicating with the interior of the room, a series of air outlet conduits forming door mullions on another side of the room, and doors mounted on said air conduit mullions.

3. In a conditioning room, a plurality of air inlet conduits forming door mullions on one side of the room and having air inlets at the lower ends thereof communicating with the interior of the room, a plurality of air outlet conduits forming door mullions on the opposite side of the room and having an air outlet at the lower ends thereof communicating with the interior of the room, means for regulating the flow of air through said conduits, and doors mounted on said air conduit mullions.

Signed at Chicago this 28th day of May, 1927.

DELL THOMPSON.