

The method of constructing the wall by the Wagner system is shown in Fig. 4. Form boards marked "A" of a wedge shape, to be easily removed, are used to gauge the thickness of the wall and keep the slabs in line until the studs are poured and set, and these boards also serve to hold the concrete poured in to form the

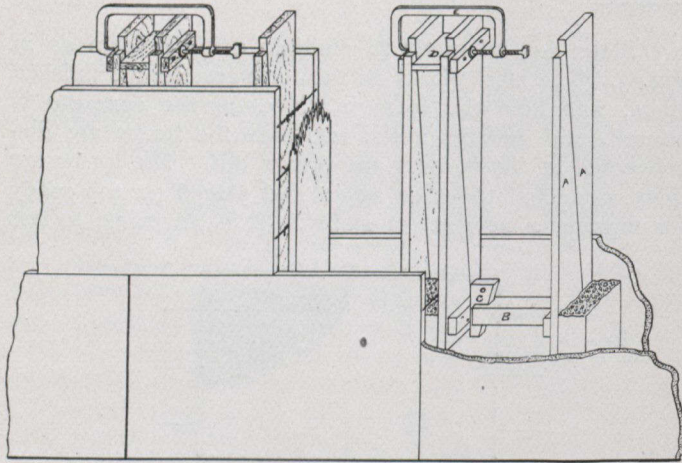


fig. 4

studs. Above the first course these form boards are clamped to the finished stud by means of struts "B" and wedges "C," and the tops are held in place by separating blocks "D" and clamps "E."

After the form boards are in place the horizontal joints are spread with mortar and the slabs are laid in place against the form boards and the projecting wires are connected across the wall, holding the slabs firmly in place. Concrete is then poured between the form boards and around the wires to form the studs. The studs are poured only to a point below the top wires, leaving the top part of the stud to be made continuous with the stud in the course above and thus tie the hori-

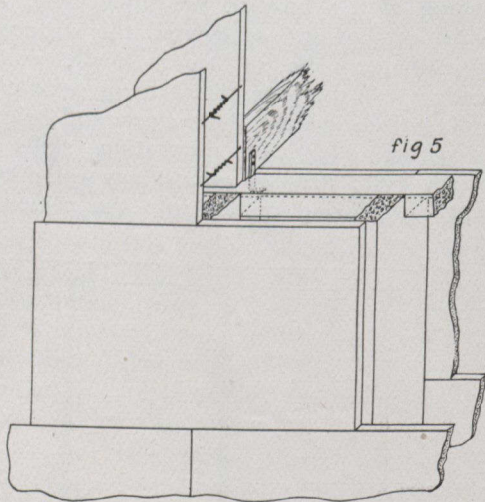


fig 5

zontal joints together. For special purposes vertical reinforcing rods may be placed in the studs.

When the studs are sufficiently set, the form boards are loosened and moved up, and another course of slabs are set and grouted.

The thickness of the wall, and the size of the studs, will, of course, depend on the kind of building and the loads to be carried. For very heavy loads the studs can be made very thick, or taking an extreme case, where a solid wall is desired the studs can be made to fill the whole space between the slabs. In this case the concrete would be poured to fill the bulk of the space, leav-

ing only a small space occupied by the form boards, which would be filled when pouring concrete in the course above, after raising the form boards.

Working in this way solid walls can be built without any outside form work whatever, and at the same time have a veneering of very hard close grained concrete of pleasing appearance.

No weight at all is carried on the slabs. The load of the joists is transferred to the studs by decreasing the thickness of the wall at each story and bolting angle or channel irons to the tops of the studs which project, or by joining the tops of the studs together with concrete to form a concrete beam as shown in Fig. 5.

Door and window frames are grouted in solid.

Patents have been applied for by the patentee, Mr. W. E. Wagner, 19 Gerrard Street East, Toronto.

A CONCRETE HOUSE BUILT BY A NEW METHOD.

Owing to the growth of our cities and the massing together of people, the demand for fireproof buildings has been steadily increasing. Engineers and builders realize that every owner wants his building to be fireproof, but up to the advent of concrete all methods of fireproof construction have been expensive and almost prohibitive except for the highest type of building where excessive rentals can be obtained. The more common methods of reinforced concrete construction are not extensively applied to residences. Some of the advantages claimed for this form of construction are given herewith.

The building invented by G. M. Graham is an entirely new combination of steel tubing, wire, malleable fittings and concrete. With the exception of piers, the concrete is not depended on to carry any of the load, but is used only as a stiffener or body to the building. The entire frame work can be erected before the concrete work is started, making it possible to inspect the position and quality of steel and to erect a building in a short time. No forms or centering are required. The walls and floors are hollow, which reduces the weight of the building to the minimum and affords perfect insulation. The strain on the floors is carried by wire in tension. The walls, floors and partitions form one integral mass, so that the building is vermin proof and indestructible. As every partition, floor and ceiling is interwoven with wire, it is impossible for cracks to develop. The building is absolutely fireproof and costs very little more than the present form of brick walls, wood floors and partitions, which are so highly inflammable. All steel and wire is encased in cement, which prevents corrosion or rust. The exterior is of cement mortar which permits of any finish or form of ornamentation desired.

The projectors of this construction have been working on it for several years. Tests have been made of the strength of each part of the structure and excellent results have been obtained. A floor slab fourteen feet square between supports and only three inches thick was loaded with six hundred pounds to the square foot and showed practically no deflection. Another slab was loaded until it deflected several inches and when the load was removed the slab went back to its original position.

The first building in which this construction was used has just been completed in Glencoe, Illinois, at the corner of Sheridan Road and Central Avenue. M. J. Moorehouse, No. 2117 Fisher Building, Chicago, was