

May 8, 1923.

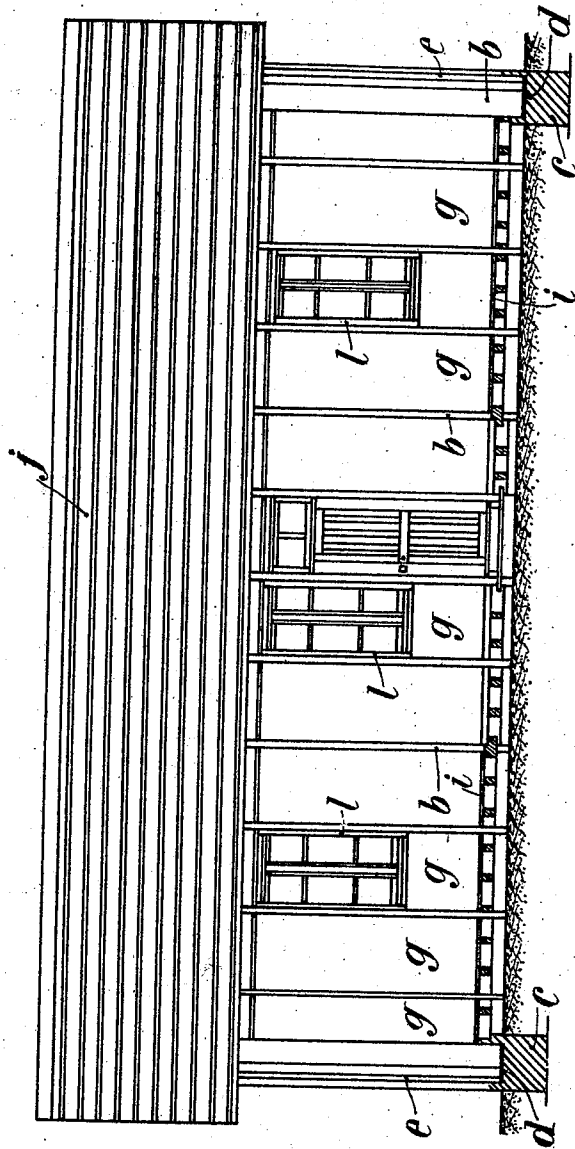
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E. FEUILLETTE
HOUSE CONSTRUCTION

Filed June 6, 1921

4 Sheets-Sheet 1

Fig. 1.



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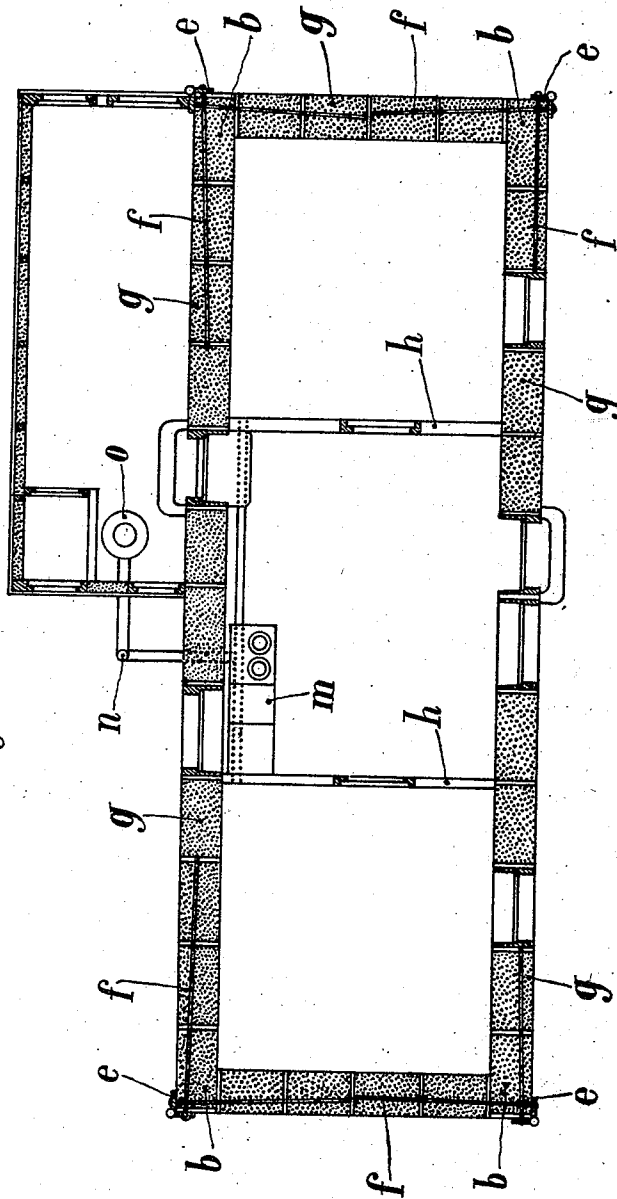
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Fig. 2



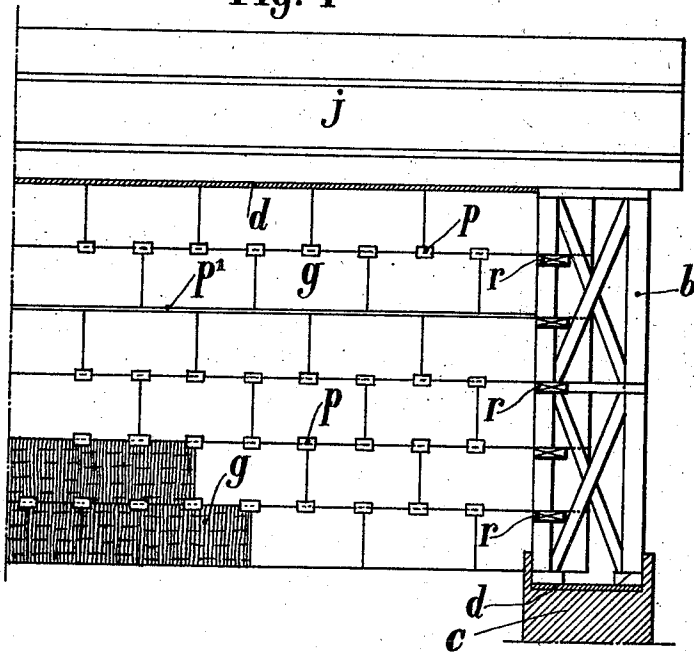
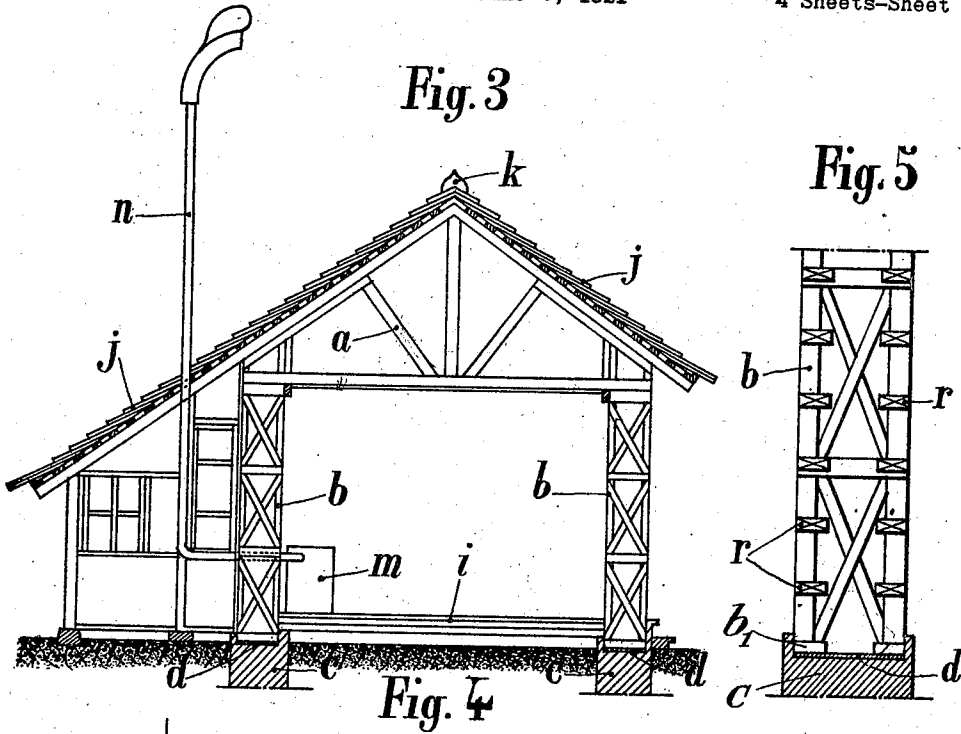
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Fig. 6

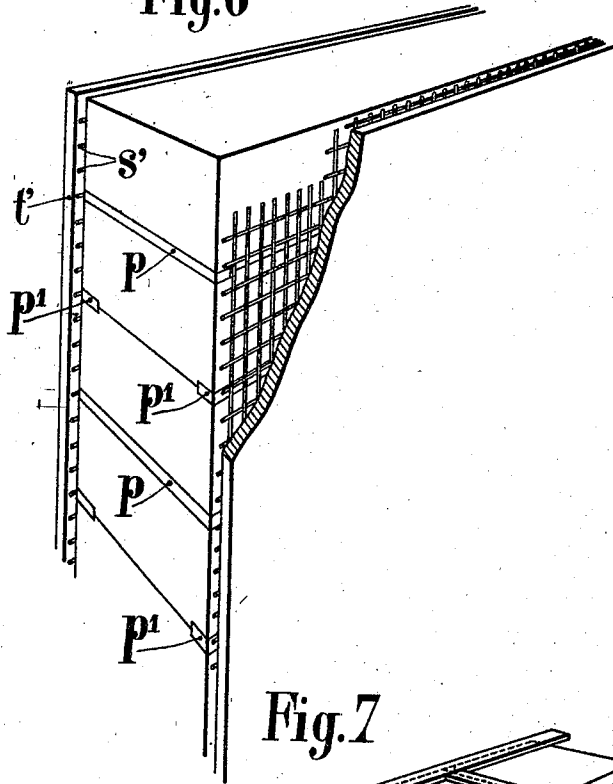
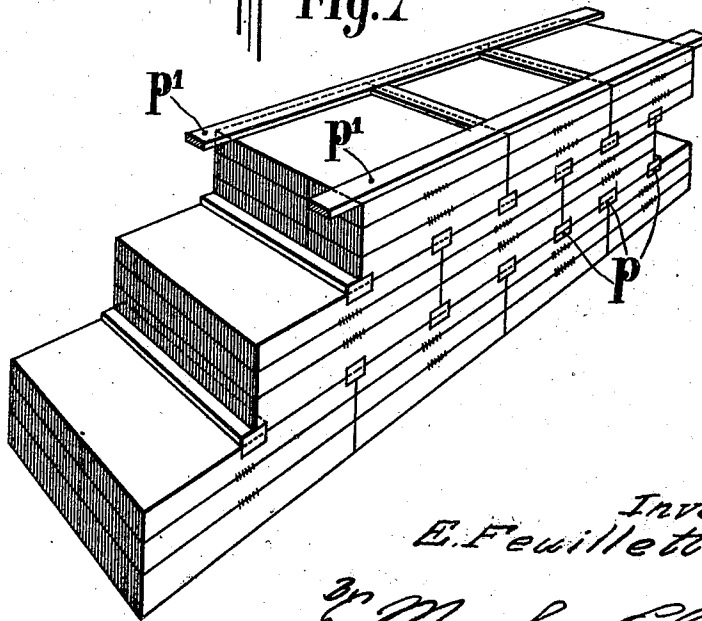


Fig. 7



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UNITED STATES PATENT OFFICE.

EMILE FEUILLETTE, OF BOULOGNE-SUR-SEINE, FRANCE.

HOUSE CONSTRUCTION.

Application filed June 6, 1921. Serial No. 475,520.

To all whom it may concern:

Be it known that I, EMILE FEUILLETTE, citizen of the French Republic, residing at Boulogne-sur-Seine, Seine, France, have invented certain new and useful Improvements in House Construction, of which the following is a specification.

This invention has for its object a system of economical and hygienic construction which is more particularly characterised in that the partitions or walls are constituted by metallic or wooden lattice struts between which are arranged, in superposed layers with crossed joints, blocks or pressed vegetal matter; the stalks constituting these blocks being vertically arranged so that it may be possible to cause the filling mass, forming an isothermic screen, to be penetrated at will by insecticide and disinfecting agents ensuring its preservation.

In the accompanying drawing, given by way of example only,

Fig. 1 shows in front elevation a bungalow constructed in accordance with the features of the present invention.

Fig. 2 is a horizontal section thereof.

Fig. 3 is a cross section of the same,

Fig. 4 shows shows in partial elevation a wall in its entirety.

Fig. 5 shows one of the struts of the framework.

Fig. 6 is a perspective view of a portion of the wall and its covering.

Fig. 7 is a similar view of the wall and its joint strips.

As illustrated in the drawing, the main skeleton work of the building is constituted by a wooden frame-work composed of trusses *a* and posts *b*. These trusses *a* and posts *b* are formed by means of simple assemblages of thin members constituting rigid and light lattice beams or girders prepared beforehand and mounted on the spot.

The whole of the skeleton-work rests by means of wooden parallel sills *b*¹ (Fig. 5) on a foundation *c* established according to the nature of the ground but, in any case, of small importance owing to the lightness of the construction. A sheet of bituminated cardboard *d* is interposed between the foundation and the walls for preventing moisture to rise by capillarity.

In order to increase the rigidity of the building, the angle posts are strengthened by wooden members *e* forming at the same

time decorative designs and connected by stays *f* to the other posts for constituting a link, the number of links varying according to the height of the building.

The filling of the walls between the posts is effected by means of blocks *g* of pressed vegetal matters rendered incombustible. These matters are taken on the spot and may be constituted by wheat, oats or rye straw, reeds, furzes, brooms, etc. The fibres of vegetal matters are parallelly arranged for the constitution of the blocks, so that when putting them in place for the construction of the walls, these fibres be vertically arranged.

Each block is of parallelepipedic shape the width of which corresponds to the width of the walls and the length to the distance separating the posts *b*. These blocks are stacked on each other, in superposed layers with crossed joints. The transverse joints of these blocks are covered by laths or strips *p* transversely arranged over the same. Laths or strips *p*¹ are arranged longitudinally between certain of the block layers in such manner as to ensure their parallel position.

The elements which are engaged in the posts *b* or in the struts *a* are held by brackets *r* suitably arranged in these posts so that the elements rest thereon.

The height of the building corresponds to the total height of the number of superposed blocks.

Finally, the upper part of the walls, at its point of junction with the roof, is provided with a sheet of bituminated cardboard *d* similar to that which is interposed between the foundation and the base of the walls, in order to prevent moisture from penetrating into the elements.

After building up, the wall is covered on both its faces with wire-works on which is laid a-coating *t*.

The outer surface may receive a spotted target or any other coating with decoration and the inner surface is covered with a plaster coating on which can be attached hangings; the outer coating must be water-proof, whilst the inner is porous for the purpose indicated hereafter.

The inner partitions *h* are constituted by panels formed of uprights and ceiling laths, manufactured at the work-shop, connected together, when building up and covered with

a plaster coating. The floors *i* are composed of joists on which rests an ordinary flooring. The ceilings are made of laths nailed under the joists and covered with a plaster covering.

The covering is constituted in the ordinary way or by mats *j* made of straw spread and sewn, similar to those used for hot-houses and the ridge is composed of a row of ridge tiles *k*.

The mats, the length of which is determined according to the requirements are established in the longitudinal direction and rest on the laths mounted on the trusses, by overlapping in the same way as tiles.

After building up, the whole is covered with a coating which is rendered incombustible and ensuring at the same time water tightness.

In this roofing is moreover injected an insulating liquid which may be composed of water, silicate and magnesium lime, or even ordinary lime, this insulating liquid may be renewed at determined times for increasing the life of the roofing.

The openings, doors and windows, are mounted on frames *l* secured on the main skeleton work; their dimensions are determined, on the one hand, by the distance separating the posts and, on the other hand, by the height and the number of blocks of straw they replace.

Peculiar arrangements have also been adopted in order to permit of ensuring the disinfection of the vegetal matters constituting the filling of the walls as well as the destruction of insects which may develop therein. For that purpose, conduits or channels are reserved or made in the lining of the walls; these conduits are preferably open at their upper part and it is possible to produce in the same an injection and a circulation of a gaseous disinfecting agent (formic acid, sulphide of carbon, sulphurous gas, etc.); this agent is distributed in the mass of the vegetal matter, so as to take the place of the air and to produce the disinfection of these vegetal matters and the destruction of the insects or rodents.

In practice, these conduits are constituted by the channel reserved between the parallel sills *b*¹ which support the walls and are interposed between the latter and the foundations. The conduit thus obtained extends throughout the length of the walls, at their bases and surrounds the building.

These conduits or channels may be reproduced at all the stories of the building.

It will be easily understood that the gaseous agent will rise between the vegetables constituting the facing, by driving off the air and thus creating an aseptic atmosphere which will destroy the micro-organisms, insects, rodents, etc.

As the inner mortars or coatings are made

of porous material (plaster and saw dust for instance) the disinfecting agents can pass through them and destroy any vegetation, microbes or insects which may develop between the said coatings and the wall papers or hangings.

In the example shown in Figs. 1, 2, 3, the inner fixtures of the dwelling (which has only a ground floor) comprise a stove *m* serving both as a cooking range and an air stove, a central heating plant by means of heating pipes fed with the hot air from the air-stove, a wash-house and water closets.

The house does not comprise from this fact any fire place. An external chimney *n* constituted by a sheet-iron pipe provided with a rotary cap ensures the escape of the gases from the main stove *m* and from an auxiliary stove *o* placed in the wash-house.

It is obvious that the general arrangement of the rooms may be varied by the combination of the posts and trusses constituting the main frame-work and the dimensions of which depend on the span of the trusses, the distance separating the posts and the dimensions of the blocks of straw.

Finally, houses having more than one story can be constructed in the same way.

The numerous advantages of this method of construction will easily be understood from the foregoing.

By using, for the construction of the walls, the vegetal matters produced by the region and consequently, which are so to speak, on the spot (wheat, oats or rye straw, reeds, furzes, brooms, briars, boughs or other matters capable of being compressed by means of an ordinary forage press) an important economy is obtained in the cost of transport. The construction can be made in a very short time and without having to employ experienced workmen. The walls thus constituted form, notwithstanding their thickness, a resilient and light structure, which may be mounted on foundations of small depth or even on a base which can be made of wood, concrete, bricks or any other suitable material.

It will be understood that a house thus constructed is temperate as the materials used have insulating properties; moreover, the great thickness of the walls with their coating, constitutes a very diffused air cushion (the material being but slightly compressed) so that an isothermic dwelling is obtained.

What I claim as my invention and desire to secure by Letters Patent is:

1. In a house construction, vertical latticed struts, a reinforcement formed by said struts arranged parallel, and parallelipedic blocks of compressed vegetal fibrous material located between the struts and having their fibers vertically arranged.

2. A system of economical and hygienic

construction, comprising vertical lattice struts, parallelepipedic blocks of vegetal matters, the fibres of which are vertically arranged and are compressed, these blocks being placed in superposed layers with crossed joints between the struts, transverse strips arranged between the superposed blocks for covering the transverse joints, and means for connecting the struts and forming the angles of the walls.

3. A house construction comprising vertical lattice struts, parallelepipedic blocks of vegetal matters, the fibres of which are vertically arranged and are compressed, these blocks being placed in superposed layers with crossed joints between the struts, transverse strips arranged between the superposed blocks for covering the transverse joints, longitudinal strips arranged between certain of the block layers to ensure their parallelism, brackets on the struts for supporting the ends of the longitudinal strips, and means for connecting the struts and forming the angles of the walls.

4. A system of economical and hygienic construction, comprising vertical lattice struts, parallelepipedic blocks of vegetal matters, the fibres of which are vertically arranged and are compressed, these blocks being placed in superposed layers with crossed joints between the struts, transverse strips arranged between the superposed blocks to cover the transverse joints, longitudinal strips arranged between certain of the block layers to ensure their parallelism, brackets on the struts for supporting the ends of the longitudinal laths, wooden uprights for forming the angles of the walls, oblique stays arranged in the thickness of the walls for connecting the said uprights with the struts, frames interposed between the blocks or vegetal matters for forming the framing of the bays, and means for building up the walls of the foundation.

5. A house construction, comprising vertical lattice struts, parallelepipedic blocks of vegetal matters, the fibres of which are vertically arranged and are compressed, these blocks being placed in superposed layers with crossed joints between the struts, transverse strips arranged between the superposed blocks to cover the transverse joints, longitudinal strips arranged between certain of the block layers to ensure their parallelism, brackets on the struts for supporting the ends of the longitudinal laths, wooden uprights for forming the angles of the walls, oblique stays arranged in the thickness of the walls for connecting the said uprights with the struts, frames interposed between the blocks of vegetal mat-

ters for forming the framing of the bays, and sills parallelly arranged on the foundations for supporting the walls and forming a central conduit extending under the latter to permit insecticide and disinfecting products to be introduced into the wall.

6. A house construction, comprising vertical lattice struts, parallelepipedic blocks of vegetal matters, the fibres of which are vertically arranged and are compressed, these blocks being placed in superposed layers with crossed joints between the struts, transverse strips arranged between the superposed blocks to cover the transverse joints, longitudinal strips arranged between certain of the block layers to ensure their parallelism, brackets on the struts for supporting the ends of the longitudinal laths, wooden uprights for forming the angles of the walls, oblique stays arranged in the thickness of the walls for connecting the said uprights with the struts, frames interposed between the blocks of vegetal matters for forming the framing of the bays, sills parallelly arranged on the foundations for supporting the walls, sheets of bituminated cardboard interposed between the sills and the said foundations, a channel between the sills for introducing insecticide and disinfecting products in the mass of vegetal matters, wire-work fitted on the inner and outer faces of the said walls, a pervious coating covering the inner wire-work and a water-proof coating for the outer wire-work, and means for covering the structure thus made.

7. A house construction, comprising lattice struts, blocks of compressed vegetal matters between the struts, laths interposed between the layers of blocks for covering their joints, brackets on the struts, wooden uprights for forming the angles of the walls, stays for connecting these uprights to the struts, frames, between the blocks for forming the framing of the bays, sills parallelly arranged between the walls and the foundations, sheets of bituminated cardboard between the sills and the foundations, wire-works fitted on the inner and outer faces of the walls, a pervious coating covering the inner wire-work, rafters resting on the wall, a waterproof coating for the outer wire-work, sheets of bituminated cardboard on the upper part of the walls, between the latter and the rafters, laths connecting the said rafters, mats covering the said laths, and a row of ridge-tiles arranged on the ridge of the roof.

In testimony whereof I have affixed my signature.

EMILE FEUILLETTE,