

PUBLISHED
JUNE 8, 1943.
BY A. P. C.

J. COUELLE
BAND WITH GUSSETS TO OBTAIN BY CASTING
CONSTRUCTIVE JOINTING ELEMENTS
DIVIDING THE CHARGES BY
DISPERSION OF
THE THRUSTS
Filed Feb. 26, 1942

Serial No.
432,392

Fig. 1.

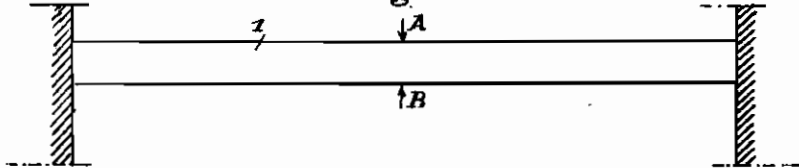


Fig. 2.

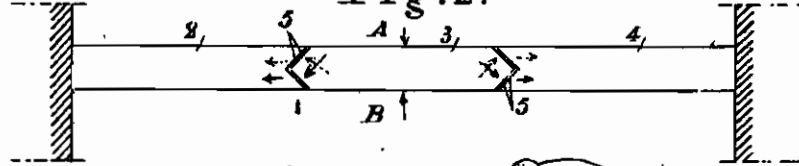


Fig. 3.

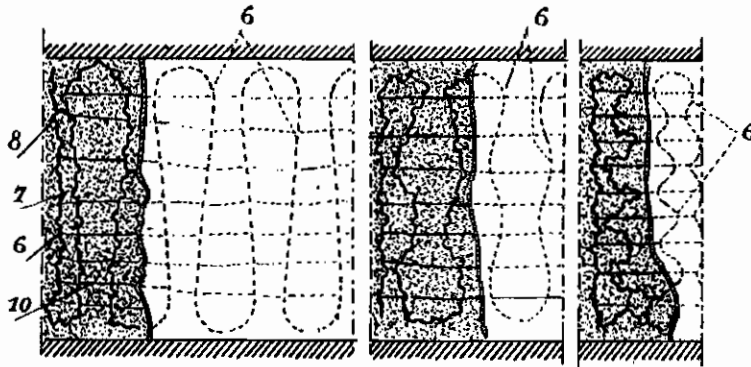
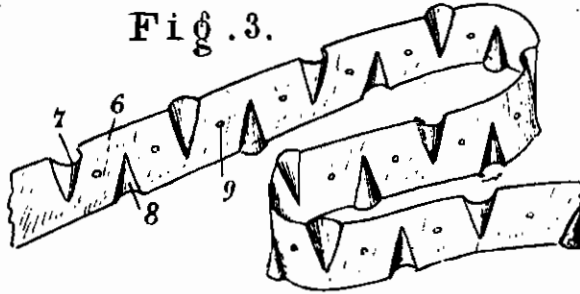


Fig. 4.

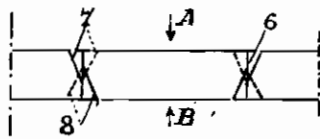


Fig. 5.

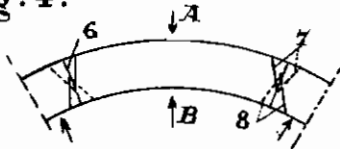


Fig. 6. INVENTOR:
JACQUE COUELLE
BY *Haltinger Lake & Co.*
ATTORNEYS

ALIEN PROPERTY CUSTODIAN

BAND WITH GUSSETS TO OBTAIN BY CASTING CONSTRUCTIVE JOINTING ELEMENTS DIVIDING THE CHARGES BY DISPERSION OF THE THRUSTS

Jacques Couëlle, Marseille, France; vested in the
Allen Property Custodian

Application filed February 26, 1942

Experience has shown up that a rigid material won by casting, cement or others, works on the mass of its aggregate without the elasticity useful intervening in the very moment of an effort causing a flexion, which effects to a breaking of this material.

It is owing to this constatation that has been thought to join to this rigid material a resistant element which at the same time presents flexibility: thus the armed cement beams have been created, widely used now-a-days. However, it also has been shown up, that the construction of a flooring with armed beams, asks, besides of a specialised worker, also for a certain quantity of iron, which raises the weight of the flooring and, not the least, its prime cost. To this there must be as well added the difficulty which still may be met in certain cases, to procure iron; consequently it can be presumed, that the armed beam, in spite of its incontestable qualities, gives certainly some difficulties of realization. These are now eliminated by the object of the present invention, which consists in an elastic band, provided with gussets, properly arranged to form grappling surfaces and abutments between the elements in casted material, be cement, plaster or others; the fields of which thus separated by the thickness of the band, fit however the one into the others, following the wanted profiles, to realize a homogeneal and extremely resistant whole, though formed by separated elements.

The goal of the invention and its characteristic is to practically realize bearing surfaces without utilisation of iron. The band and some of its applications, is represented on the annexed sketches, which shall at the same time explain and demonstrate the object of the invention.

Up to these sketches:

Pictures 1 and 2, essentially schematical, showing the principles of the invention.

Picture 3 in perspective, shows the elastic band, object of the invention.

Picture 4 in a smaller measure, shows different ways of utilisation of the band as shown in Pic. 3.

Picture 5 showing in transversal cut, a surface, a bearing surface, constructed up to the invention.

Picture 6 is also a transversal cut of a bearing surface curved.

Picture 1 shows a solid I, which forms a beam, only formed by molecularly contact of a stuff known as such or cement; this beam, thus constructed, will not give any other resistance towards efforts or shocks, which it may have to support, following the directions A and B, than

that, rather weak, of the very cohesion amongst themselves of these molecules. But if now we construct this same beam, as shown on Pic. 2, in several pieces 2, 3 and 4, and if we give to each of these pieces' extremities parts 5, with adapted dips in order to create a sort of wedges, the result of these beams are completely changed; for it can be observed that, in charging these new beams, following always the sense of the indications A and B, reaction will result on the surfaces of the inclined parts which works on the compression; owing to this fact the work of the resistance of the molecules is changed because the efforts, be of the weight, be of a shock, now are divided not only on one element, as shown in Pic. 1, but on three elements, each of which works in a different direction and varied direction. We can say, that thus a force-motor has been realized by this fragmentary division of the field of effort; in fact, this means the industrial utilisation of the phenomenon which takes place in the nature and which can be observed with structure of the ceilings of grots, or quarries with subterranean galleries, where the superior part is forming a sort of ceiling, sometimes very big surfaced, maintains by itself through "failles" in the stratification of the whole, which act in the same way as the fragmentation of the beam, shown on Pic. 2.

This fragmentation industrially is obtained by the object of this invention which consists in a band 6, shown on Pic. 3.

This band has gussets 7 and 8 of hollows opposed and disposed in quincunx; this band can be made in thin metal, from cartoon or any other possible material, and even from strong paper. The openings 9 allow the passage of the bands 10, Pic. 4, which by their tension will allow to maintain the band 6 in the wanted and different forms, some of which are also shown in the same picture.

This band at the same time realizes the isolation of the surface casted in lines of division of the charges, effort and qhoxk, and the intimate union by fitting of the separated lines, as shown in Pict. 5 and 6.

These fittings are essentially obtained by the disposition and forms of the gussets 7 and 8 which create very wall inclined surfaces forming as many wedges or failles of junction as there will be casted elements. It is therefore incontestable, that all efforts, resulting from initial weight, use and the shocks which will produce in direction of the arrow A or direction of arrow B, will always be carried by the inclined parties 7,

and in the opposite direction 8, forming as many tenons of grappling and force, which hinders all break of the molecules, at the same time giving way to the normal flexions, assuring elasticity of the whole and its conservation.

This disposition may be used with all its qualities of resistance and lightness to construct partitions, as well as vaultings, Pict. 6, furthermore for constructing basins, reservoirs and other similars.

The industrial result, obtained with the band, which is the principal object of this invention, is considered to be new because now bearing surfaces of repartition in all directions of the pressure and charging can be constructed, which are used for flooring, walls and covers.

The procedure of establishment of these surfaces is the same as for a flooring or a wall in armed concrete; to begin with there will be made a frame on which will be put the band 8 in the

wanted form and kept by the bands 10, Pict. 4, then the cast of the chosen material will be dealt with as always.

After dessication of the whole, the frame will be taken away and the flooring, wall, partition or cover are ready to get the habitual coating.

Recapitulation

Band with gussets to obtain by casting constructive elements jointing, dividing the charges by dispersion of the thrusts, characterized only by an elastic band of metal, carton, moulded materials and even paper. This elastic band has the particularity to possess gussets in form and size according to the results wanted. These gussets are essentially disposed in quincunx and their openings are in opposite way towards the faces of the band.

JACQUES COUËLLE.