

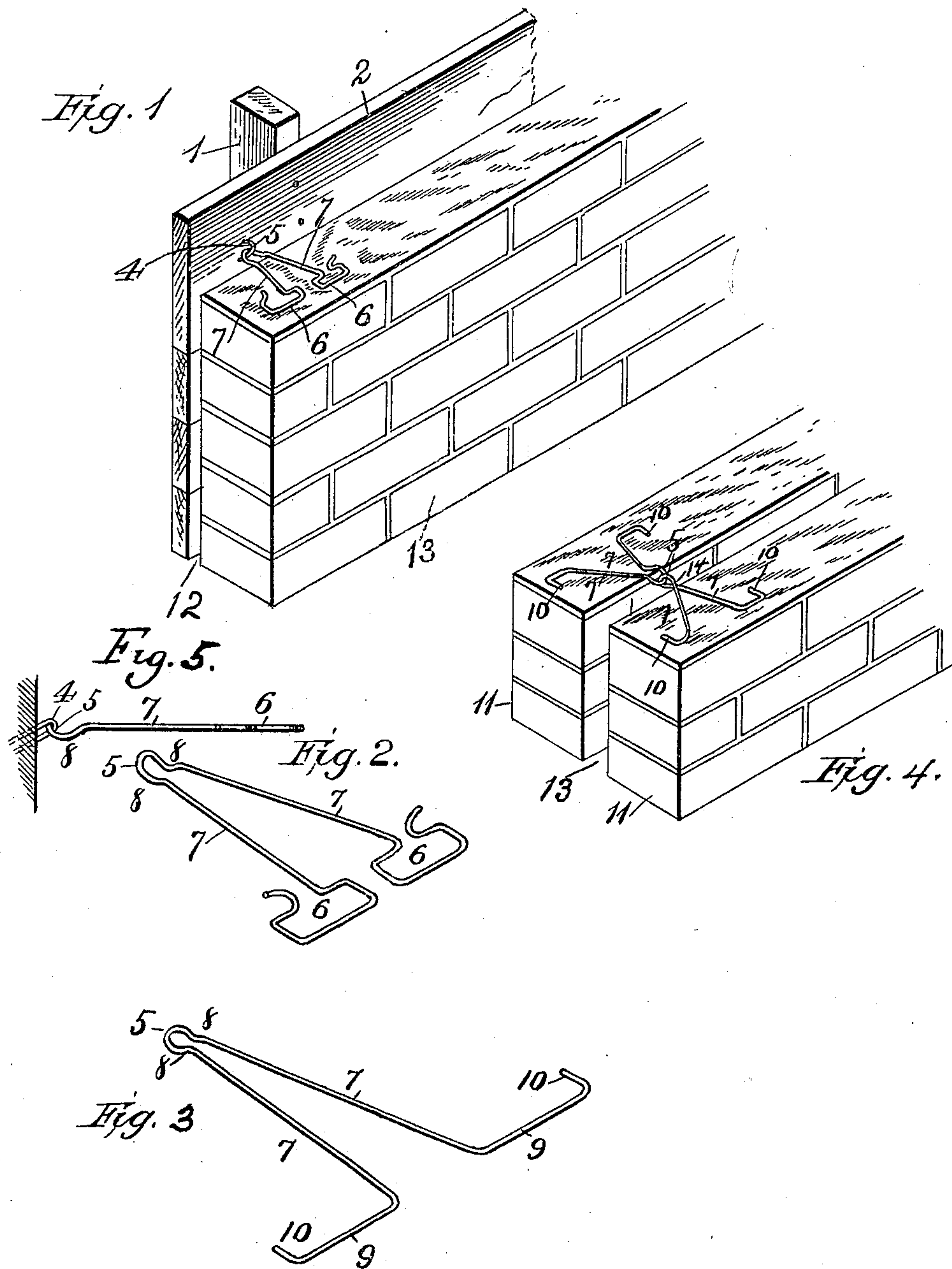
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PATENTED MAY 8, 1906.

J. F. DUNLAP.

WALL TIE.

APPLICATION FILED MAY 3, 1905.



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# UNITED STATES PATENT OFFICE.

JOSEPH F. DUNLAP, OF NEW BRIGHTON, PENNSYLVANIA,

## WALL-TIE.

No. 819,869.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed May 3, 1905. Serial No. 258,633.

*To all whom it may concern:*

Be it known that I, JOSEPH F. DUNLAP, a citizen of the United States, residing at New Brighton, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Wall-Ties, of which the following is a specification.

This invention relates to improvements in wall-ties; and the object is to provide a simple, strong, and durable tie and one which will securely hold the wall with which it is used in position.

This invention consists in the novel features of construction hereinafter fully described, particularly pointed out in the claims, and clearly illustrated by the accompanying drawings, in which—

Figure 1 is a perspective view of a section of the wall of a frame structure with an outside veneering of brick fastened thereto by my improved fastener or wall-tie; Fig. 2, an enlarged perspective view of the tie; Fig. 3, a perspective view showing a modified form; Fig. 4, a perspective view showing the application of my tie to a double wall structure; and Fig. 5, a side elevation, partly in section.

Referring now more particularly to the drawings, 1 designates a section of the usual framework of a wooden building, and 2 the weather-boarding attached thereto. A brick wall 3 is built up upon the outside of the weather-boarding, usually about one brick thick, to give the building the appearance of having been constructed of brick. A space 12 is left between the weather-boarding and the brick wall to provide an air-chamber. In order to hold the brick wall to and prevent it from sagging away from the wooden framework, a bonding-tie is used which is embedded in the mortar between the bricks and fastened to the weather-boarding by means of a staple 4.

My improved tie is made from a straight length of wire of suitable size and material bent to substantially V shape to form the body or stem portion 5 thereof. The free ends of the side arms 7 of the stem portion 5 are formed into substantially rectangular loops 6. Said arms are preferably disposed farther apart at the open end of the stem than at the closed end thereof and converge toward said closed end. The closed end of the stem portion 5 is provided at 8 with a

downwardly-extending dished portion or "dip" to accommodate the slight settling incident to all brick walls, said dip or dished portion being disposed within the air-chamber 12 between the weather-boarding and the brick wall.

When the brick wall begins to sag away from the framework of the building, a strain is exerted upon the tie in the direction of its length, which is counteracted by the resistance of the rectangular loops embedded in the mortar. The advantages of the rectangular loop over the circular or curved loop heretofore employed in such devices is that the strain is directed against a number of sharp angular shoulders embedded in the mortar which offer a greater resistance than would be afforded by the circular or curved construction before mentioned. In the circular construction of the loop the mortar inclosed therein acts as a sort of pivot or pulley around which the wire has a tendency to revolve or slip when a strain is exerted upon the straight stem portion of the tie, whereas in my improved construction of the loop the mortar inclosed therein is rectangular in shape, around which the wire has no tendency to revolve or slip, and thus in order to pull the tie out of its position the mortar must be pulled out bodily therewith.

In the form shown in Fig. 3 the end projections 10 are disposed substantially parallel with the side arms 7 of the stem portion.

Sometimes two brick walls 11 are built with an air-chamber 13 between them, and in order to hold them together a special double tie is used, as illustrated in Fig. 4. This double tie is formed by hooking together two of the single ties hereinbefore described at their closed ends. In order that the two members of the double tie may lie in the same plane, one of said members is given a quarter-twist at its closed end, said twist to lie within the air-chamber 13, as illustrated.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A wall-tie comprising a substantially V-shaped stem portion with its closed end provided with a dished portion or dip, and its free ends formed into substantially rectangular loops.

2. A wall-tie comprising a substantially V-

shaped stem portion formed at its closed end  
with a dished portion or dip and provided at  
its free ends with arms extending at substan-  
tially right angles, said arms provided at their  
5 outer extremities with laterally-extending  
projections disposed substantially parallel  
with the side arms of the stem portion.

In testimony whereof I affix my signature  
in presence of two witnesses.

JOSEPH F. DUNLAP.

Witnesses:

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