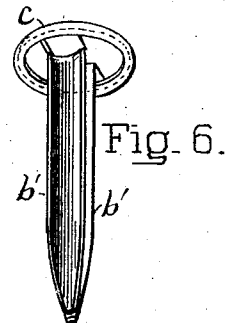
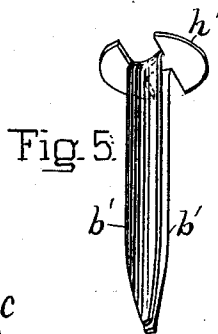
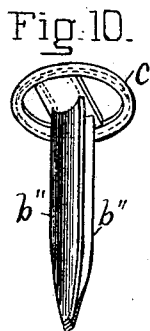
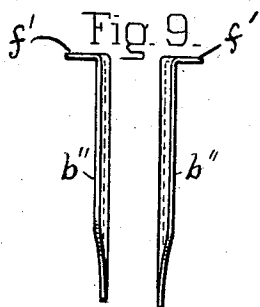
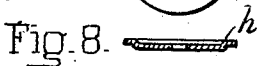
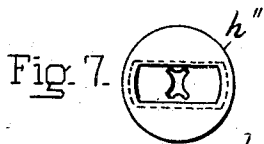
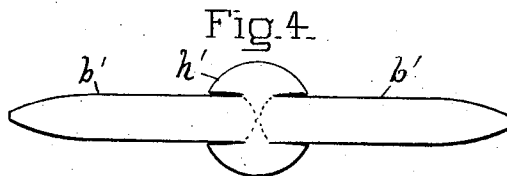
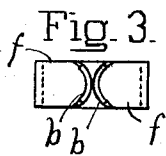
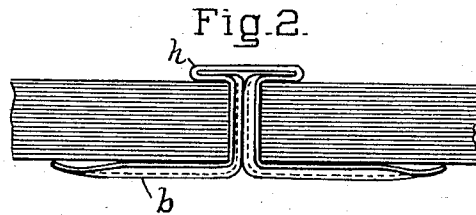
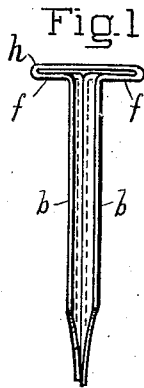


No. 857,748.

PATENTED JUNE 25, 1907.

G. W. MCGILL.
METALLIC PAPER FASTENER.
APPLICATION FILED APR. 26, 1905.



Witnesses:

Samuel W. Balch
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UNITED STATES PATENT OFFICE.

GEORGE W. MCGILL, OF NEW YORK, N. Y.

METALLIC PAPER-FASTENER.

No. 857,748.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed April 26, 1905. Serial No. 257,417.

To all whom it may concern:

Be it known that I, GEORGE W. MCGILL, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Metallic Paper-Fasteners, of which the following is a specification.

This invention relates particularly to that class of metallic fasteners known to the trade as McGill fasteners commonly used for the connecting together of a number of sheets of paper, or the binding together of sheets of other materials, such fasteners consisting of a head with two shank-blades cut from sheet metal which project from the head and lie together so that they will make but a single hole when forced through the material to be fastened. The fastening is effected by separating the shanks and turning them down against the material in opposite directions.

In the improved fastener constructed as hereinafter set forth the two blades providing its bifurcated shank are transversely curved, and in their normal position lie with their convex surfaces back to back and in parallel contact throughout their length. The object of this transverse curvature of the shank blades is that when the shanks are turned down against the material the edges will lie close on the material and the shanks will present outwardly rounded smooth surfaces.

A further object of this invention is to afford greater stiffness with a given thickness of metal as compared with fasteners having flat blades, and hence with a lesser thickness of metal to afford the requisite stiffness, both to prevent buckling while being forced through the material which is being fastened and also to hold the shanks in place when turned down against the material.

A further object of the invention is to form shank-blades which normally lie together throughout their length and which are integral with a unitary unfolded sheet-metal head from which both of the shank-blades spring directly, whereby the shank-blades are prevented from being sprung apart at the roots and enlarging the hole in the material in spreading the shanks apart in clenching.

The back to back normal position of the convex surface of the shank-blades provides between their respective edges spaces which, during the process of dipping in the manufacture of the fasteners, enables the cleansing

acids to reach and cleanse such surfaces; and in applying the fastener these spaces admit of the ready insertion between the shank-blades of a knife-blade, or other suitable instrument, to separate and fold them over upon the material being bound.

In the accompanying sheet of drawings, which form a part of this application, Figure 1, is a side view of a metallic fastener formed from a continuous strip of sheet metal of substantially uniform width and embodying a portion of the features of my invention. Fig. 2, shows the fastener applied to a number of sheets of any suitable material, the sheets being shown in section. Fig. 3, is an end view of the fastener. Fig. 4, shows a blank from which are formed the head and shanks of a modified form of fastener which embodies additional features of my invention. Fig. 5, is a perspective view of the integral head and shanks of this form of fastener when fully shaped. Fig. 6, is a perspective view of this form of fastener in more finished form by reason of the addition of a cap. Figs. 7 and 8, are top and section views of a head, and Fig. 9, shows side views of two shanks for a modified form of fastener in which the several parts are made from separate pieces of metal. Fig. 10, is a perspective view of this latter form of fastener with the addition of a cap.

In the form shown in Figs. 1, 2, and 3, a strip of sheet metal of substantially uniform width, except near the ends, where it is tapered, is bent upon itself so that the middle portion *h* forms a head or capping part with folded back sections *ff* lying against the head, from the meeting edges of which spring shank-blades *bb*. The shank-blades are trough-shaped throughout their length, with their convex sides lying together back to back lengthwise, and their concave sides facing outwardly. The trough shape extends to the root in each of the shank-blades and the line of juncture with the folded back section is a curved line formed by a drawing of the metal in the process of folding and imparting a trough shape to the shank-blade, and also imparting a rigidity to the roots of the blades preventing the disturbance of their back to back set during the application of the fastener to its use.

In the form shown in Figs. 4, 5 and 6, a piece of sheet metal is cut as shown in Fig. 4, so that a unitary head or capping portion *h'* and trough-shaped shank-blades *b'b'* can

be formed therefrom with their convex sides back to back lengthwise and the shank-blades springing directly from the head without the intervention of connecting folded back sections as in the form of Fig. 1. A cap *c* covers and strengthens the head portion and forms a more finished article. The omission of folded back sections intervening between the shank-blades and the head proper and the direct rectangular connection of the shank-blades to the head imparts greater stiffness at the roots and prevents a spreading of the shank-blades in the material and any enlargement of the hole in the material, such as is liable to occur in the form shown in Fig. 1, owing to some yielding of the folded back sections when the blades are clenched.

In the form shown in Figs. 7, 8, 9, and 10, the shank-blades *b''b''* are formed of separate pieces which have short heading or capping sections *f''f''* bent over at their root ends. The shanks are passed through an opening in the middle of a head section *h''*, and the short sections of the shanks set in a recess in the head section. A cap *c* is clenched over the head section and the parts are thereby secured in place.

In each of the forms the ends of the shank-blades are preferably tapered so that the points can be more readily bent out of the line of the shank-blades and down on the material when the shank-blades are clenched.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A metallic fastener comprising a pair of shank-blades trough-shaped lengthwise, and normally set with the backs of the troughs together lengthwise.

2. A metallic fastener comprising a head and a pair of shank-blades trough-shaped

lengthwise sprung from the head and normally set with the backs of the troughs together lengthwise and the trough-shaped formation extending to the roots of the blades.

3. A metallic fastener comprising a pair of shank-blades transversely curved and set with their convex surfaces facing each other and providing lengthwise between the edges of the respective blades spaces the walls of which diverge transversely outward in opposite directions from the apex of the convex surfaces of the blades.

4. A metallic fastener comprising shank blades and a head in a plane at right angles to said shank blades, the said blades being transversely curved at their junctions with said head.

5. In a metallic fastener such as described, a plurality of shank-blades trough-shaped lengthwise and normally set with the backs of the troughs together throughout their length and provided at one end with head or capping parts set thereat in transverse direction.

6. In a metallic fastener such as described a plurality of shank-blades trough-shaped lengthwise, and normally set with the backs of the troughs together throughout their length, and provided at one end with head or capping parts set thereat in transverse direction, in combination with a metal cap covering and closed upon such head or capping parts.

Signed by me at New York city, N. Y., this 25th day of April, 1905.

GEORGE W. MCGILL.

Witnesses:

THOMAS EWING, Jr.,
SAMUEL W. BALSH.