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STAPLE.

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1,026,050.

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Fig. 1.

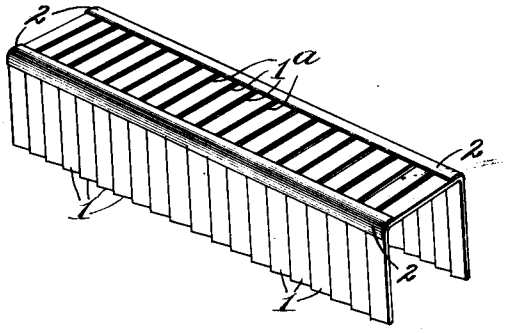


Fig. 2.

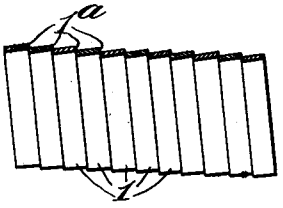


Fig. 3.

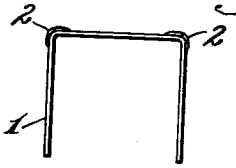


Fig. 4.

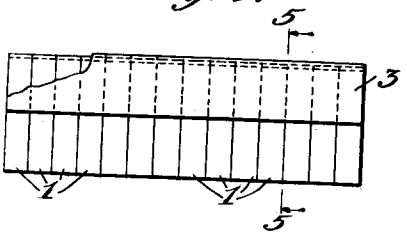


Fig. 5.

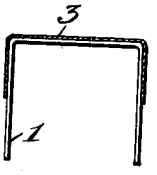
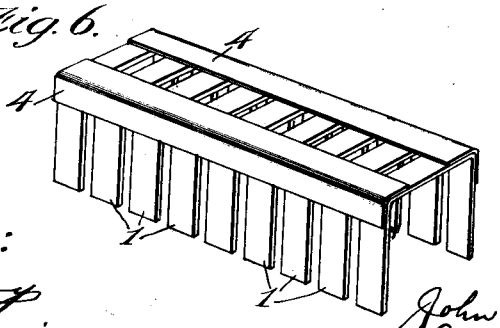


Fig. 6.



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UNITED STATES PATENT OFFICE.

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STAPLE.

1,026,050. Specification of Letters Patent. Patented May 14, 1912.

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To all whom it may concern:

Be it known that I, JOHN G. REBER, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Staples, of which the following is a specification.

My invention consists in the production of a new article of manufacture comprising a series of staples so assembled in a single structure and secured together in such manner that they may be used in a stapling machine and detached one by one in the stapling operation. The staples are first formed and then assembled together, preferably in oblique parallel planes, to enable a suitable feeding device of a stapling machine to engage the staples one by one. According to the usual practice, stapling machines are arranged to not only form the staple from a continuous flat wire, but also to drive the same, such machines being necessarily not only complicated but also requiring so much space as to disqualify them for some kinds of work and particularly work where the staples are to be driven close together. By the use of my series of staples assembled together as a single structure the stapling machine may be of simple construction inasmuch as its only function would be to drive the staple, with the result that staples could be driven in close quarters and be driven as close together as desired. Furthermore my invention enables a gang or group of these simple stapling machines to be used whereby a series of stapling operations may be simultaneously performed. While in present practice I employ my invention in connection with stapling machines for stapling folding boxes and the like, yet I contemplate using my invention wherever applicable.

In the drawings, Figure 1 is a perspective of my new article of manufacture, illustrating one of the forms thereof; Fig. 2 a central longitudinal section of a portion of the series of staples; Fig. 3 an end view thereof; Fig. 4 an elevation of a modified form of construction; Fig. 5 a section on the line 5—5 of Fig. 4; Fig. 6 a perspective of another modified form of construction.

My invention may be embodied in different forms and in the present instance I have shown the preferred form in Figs. 1, 2 and 3 and two modified forms of construction in Figs. 4 to 6.

Referring to the embodiment of my invention as illustrated in Figs. 1, 2 and 3, the series of similar individual or complete staples 1 are formed in suitable manner by a machine and are assembled side by side in parallel planes. By preference and as illustrated in Figs. 1 and 2, I arrange or group these staples in oblique planes, that is in planes oblique to the general direction of the group, with the result that the rearward edges 1^a of each staple will be exposed or in stepped relation as illustrated in Fig. 2, thereby providing a surface for the engagement of any suitable feeding instrumentality of a stapling machine in order to feed the staple structure inwardly after the innermost staple has been detached from said structure and driven. While the staples are assembled in the manner described, the same are detachably secured together in any suitable manner, as by means of solder 2 applied thereto, preferably, though not necessarily, along the two corners or bends of the staples. It will be understood that any suitable number of these staples may be assembled together to form the staple structure.

As illustrated in Figs. 4 and 5, my invention in its broadest aspect may be embodied in another form. As shown therein, the staples 1, instead of being arranged in parallel oblique planes, are arranged in parallel vertical planes and instead of being secured together by solder or the like, the same are secured by means of paper 3 or other suitable material which will serve to hold the staples in assembled form but yet permit of the same being readily detached one by one by the stapling machine. In this form or construction the top surface of the stapling structure is practically smooth, in which event a somewhat different form of feeding mechanism such as a belt or friction wheel is employed, as distinguished from a reciprocating arm or finger, which may be employed to feed the staple structure illustrated in Figs. 1, 2 and 3.

Referring next to Fig. 6, the construction is similar to the one previously described, with the exception that the staples 1, instead of being assembled into immediate juxtaposition, are slightly spaced apart and are detachably secured together in suitable

manner, as by means of the strips 4 of paper or other suitable material applied to the corners or bends of the staples, leaving the central portion on the cross pieces of the staples exposed. The object of thus spacing the staples is to expose an edge of each staple to enable the staple reciprocating feeding instrument or finger to engage the same in the same general manner as in the case of the staple structure illustrated in Fig. 2.

By the use of a staple structure embodying my invention I am enabled to employ a more simple form of stapling machine which is capable of working in close quarters and of driving the staples comparatively close together, besides which the speed of the stapling operation is increased, inasmuch as the staples are already formed and ready to be driven.

I claim:

1. An article of manufacture, comprising a series of individual staples assembled with their legs in parallel planes, said planes being oblique to the length of the series of staples.

2. A new article of manufacture comprising a series of individual staples assembled or grouped together in parallel planes oblique to the general operation of the group, and frangible material for detachably securing the staples together; substantially as described.

3. A series of individual staples assembled together in parallel planes with a portion of an edge of each staple exposed for engagement with a feeding tool; means for securing the members of the series together composed of a more readily severable material than that of the staples.

4. A series of individual staples assembled together in parallel planes with a portion of each staple exposed for engagement with a feeding tool; means for securing the members of the series together composed of a more readily severable material than that of the staples and engaging the staples only at angles between the legs and cross pieces.

5. A series of staples secured in parallel relation by means of a material more readily severable than the material of the staples, the angles at the edges of the several staples being exposed for engagement by a tool.

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