M. GESSLER.

PAPER FASTENING PUNCH.

APPLICATION FILED FEB. 14, 1913.

1,148,672. Patented Aug. 3, 1915.

FIG. 1.

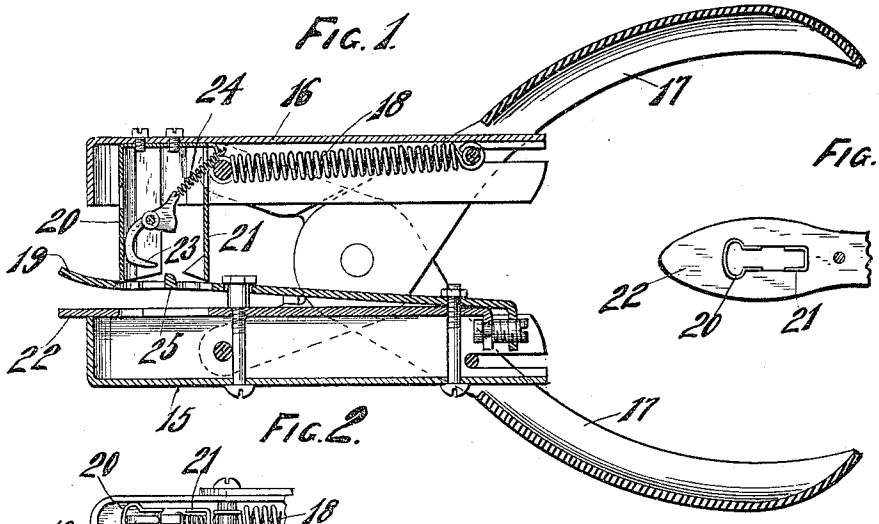
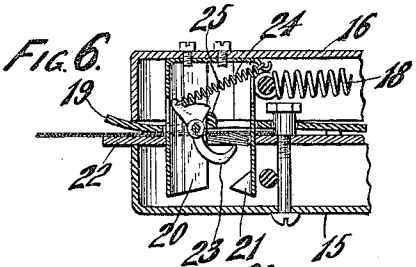


FIG. 4.

FIG. 2.

FIG. 5.

FIG. 6.



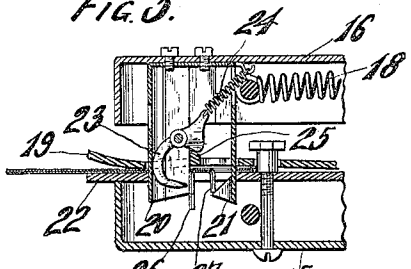


FIG. 3.

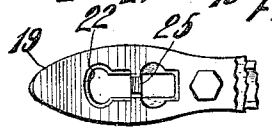


FIG. 10.

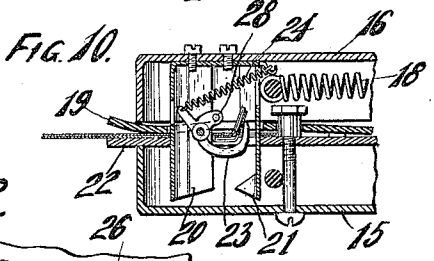


FIG. 8.

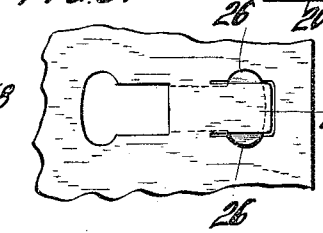


FIG. 11.

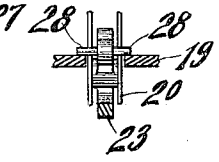


FIG. 7.

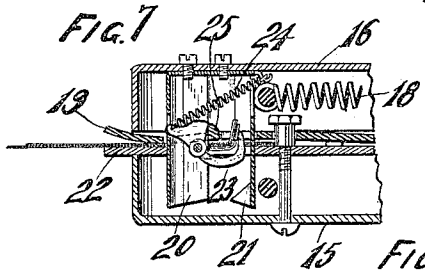
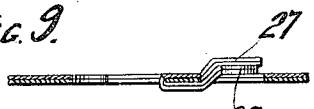


FIG. 9.



WITNESSES.

L. G. Thurm

Clara L. Muehlbach

INVENTOR.

Maximilian Gessler.

By Morsell & Caldwell.

ATTORNEYS.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MAXIMILIAN GESSLER, OF MILWAUKEE, WISCONSIN.

PAPER-FASTENING PUNCH.

1,148,672. Specification of Letters Patent. Patented Aug. 3, 1915.

Application filed February 14, 1913. Serial No. 748,319.

To all whom it may concern:

Be it known that I, MAXIMILIAN GESSLER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Paper-Fastening Punches, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to punches of the type which during the punching operation cut a sealing strip from the paper and tuck it through a slot in the paper.

An object of the invention is to provide a punch which will cut a paper locking strip with its end larger than the slot or opening through which it is tucked, thus securely locking the paper strip against disengagement from the opening.

With the above and other objects in view the invention consists in the paper fastening punch as herein claimed and all equivalents.

Referring to the accompanying drawings in which like characters of reference indicate the same parts in different views: Figure 1 is a sectional elevation of a paper fastening punch constructed in accordance with this invention; Fig. 2 is a face view of the punch carrying the jaw thereof; Fig. 3 is a similar view of the other jaw thereof; Fig. 4 is a bottom view of the die plate with the punch knives fitting therein; Fig. 5 is a sectional view of the jaw members similar to Fig. 1, but showing the parts in the position assumed by them when the punch knives have completed their cutting operation and the locking finger is ready to begin its swinging movement to insert the locking strip of the paper through the opening cut therefor; Fig. 6 is a similar view of the parts showing the jaw members moved nearer together and the locking finger swung outwardly in the performance of its work; Fig. 7 is a similar view showing the final movement of the jaw members together, the locking finger having completed its work before forcing the locking strip of paper through the opening provided for it; Fig. 8 is a plan view of a portion of the paper showing the work performed by this punch; Fig. 9 is a sectional view thereof; Fig. 10 is a view similar to Fig. 6 showing a modified construction of the means for operating the locking finger; and, Fig. 11 is a sectional view of parts thereof.

In these drawings 15 and 16 indicate the die and punch jaws respectively of a hand punch, the handles 17 of which are connected therewith in the ordinary manner for causing the jaw members to move toward and away from each other while maintaining their parallel relation, the usual spring 18 being provided to pull the jaw members apart and the usual stripper plate 19 being present to permit the punch knives to free themselves from the paper. The punch jaw 16 carries a pair of knife punches 20 and 21 which are preferably of one strip of sheet metal bent to an inverted U-shape with its ends bent to the shape desired for the respective cuts in the paper, these ends being sharpened and tempered to constitute the punch knives. Both of the punch knives 20 and 21 are of a U-shape in cross section, but the punch knife 20 has its curved or arched portion of larger diameter than the distance between the parallel straight portions thereof so that the tongue or locking strip of paper cut thereby will have a larger end or head portion than its stem portion. The die plate 22 is provided with a single die opening as seen in Fig. 4 to receive both of the punch knives 20 and 21 and to closely fit therewith to produce shearing action except at the space between the punch knives. The result of this arrangement is that the punch knives cut two tongues from the paper and while being in alinement with each other their uncut parts by which they are hinged to the sheet of paper are spaced a short distance apart as seen in Fig. 8.

A hoop-shaped locking finger 23 is pivotally mounted between the parallel straight side portions of the punch knife 20 and it is normally held with its hook-like end contained within the punch knife 20, as shown in Fig. 1, by means of a coil spring 24, but during the closing movement of the jaw members the upper protruding portion of the locking finger 23 engages a cross bar 25 which is formed between the openings of the stripper plate 19 which are somewhat larger than the punch knives and are both of the shape of the punch knife 20 as shown in Fig. 3. The engagement of the upper portion of the locking finger 23 with the cross bar 25 causes said locking finger to swing against the pull of its spring 24 and engage

the locking strip of paper 26 cut by punch knife 20 and push it against the paper strip 27 cut by punch knife 21 and force them both through the slot or opening cut by punch knife 21 far enough to permit the lateral extending edges of the head portion of the locking strip 26 to spring outwardly after passing through the opening and thus lock the strips of paper against a return movement through the opening. The engagement of the locking finger with the locking strip at an intermediate position of the locking finger is shown in Fig. 7. In the opening movement of the jaw members the locking finger is returned to its position within the punch knife 20 by the spring 24 and the punch knives return through the openings in the paper produced by them, the punch knife 21 which has its sides cut away above its cutting edges serving to lift the lateral projecting portions of the enlarged end or head of the locking strip 26 as it passes thereby, but said edges spring into their locking position as soon as left by the punch knife. This return travel of the punch knife 21 serves to assist in the proper positioning of the enlarged or headed end of the locking strip 26 through the slot or opening in the paper provided for it, if such position of the locking strip should not be completed by the locking finger, as during an operation involving an incomplete movement of the locking finger.

In the modified form of the device shown in Figs. 10 and 11 the cross bar 25 of the stripper plate is omitted so that the stripper plate has only the one opening through which both of the punch knives pass and the upper end of the locking finger 23 has a pin 28 to engage the stripper plate 19 at the sides of the opening thereof to effect the sealing of the locking finger. Otherwise this construction is the same as the other while its operation is identical therewith.

By means of this invention the locking strip cut from the paper is provided with an enlarged end or head which is wider than the slot or opening through which it is passed so that there is no danger of its working back through said slot or opening and a permanent fastening results therefrom.

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

1. A paper fastening punch, comprising a pair of jaw members, a pair of punch knives on one jaw member one of the punch knives being substantially U-shape in cross section, and having its bent portion wider than its other portion to cut a tongue from the paper with an enlarged free end and the other punch knife adapted to cut an opening in the paper, a die plate on the other jaw member having a die opening corresponding in shape with the shape of the punch knives, a locking finger pivotally mounted on one of the punch knives, means in the path of the locking finger to be engaged thereby to cause it to move and force the tongue cut by the first mentioned punch knife through the opening cut by the other punch knife.

2. In a paper fastening punch, a pair of jaw members, a pair of punch knives on one jaw member, one of the knives being U-shaped in cross section and wider at its bent portion than at its other portion so as to cut a tongue with an enlarged free end from the paper and the other punch knife adapted to cut an opening in the paper, a spring retracted hook-shaped locking finger pivotally mounted between the side walls of said tongue cutting punch knife, a die plate on the other jaw member having a die opening through which the punch knives pass, a stripper plate between the jaws members, said locking finger being adapted to engage the stripper plate and be caused thereby to swing to push the enlarged end of the tongue cut by said punch knife through the opening cut by the other punch knife.

3. In a paper fastening punch, a pair of jaw members, a pair of punch knives on one jaw member, one of said punch knives being U-shaped in cross section and wider at its bent portion than at its other portion to cut a tongue with an enlarged end from the paper and the other punch knife adapted to cut an opening in the paper, a hook-shaped spring retracted locking finger pivotally mounted between the side walls of said tongue cutting punch knife, a die plate on the other jaw member having a die opening through which the punch knives pass, a stripper plate between the jaw members having openings through which the punch knives pass and a cross bar between said openings to be engaged by the locking finger to cause the locking finger to swing and push the enlarged end of the tongue through the opening cut by the other punch knife.

4. In a paper fastening punch, a pair of jaw members, a pair of punch knives on one of the jaw members, one of said punch knives being U-shaped in cross section and wider at its bent portion than at its other portion to cut a tongue with an enlarged end from the paper and the other punch knife adapted to cut an opening in the paper, a hook-shaped spring retracted locking finger pivotally mounted between the side portions of said tongue cutting punch knife, a die plate on the other jaw member having a die opening through which the punch knives pass, a stripper plate between the jaw members having an opening through which the punch knives pass, and a projection on the locking finger for engaging the stripper plate to swing the locking finger and force the enlarged end of the tongue through the opening cut by the other punch knife.

5. In a paper fastening punch, a pair of jaw members, a pair of punch knives on one jaw member, one of said punch knives being U-shaped in cross section and having its bent portion wider than its other portion to cut a tongue with an enlarged end from the paper while the other punch knife is adapted to cut an opening in the paper and has its sides cut away above its cutting edge to form hook-like side parts, a die plate on the other jaw member having a die opening through which the punch knives pass, a finger operated by the movement of the jaw members toward each other for moving the enlarged end of the tongue toward the opening cut by the punch knife with hook-shaped sides, said hook-shaped sides of the punch knife being adapted to engage the enlarged head of the tongue and draw it through said opening on the return movement thereof.

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

MAXIMILIAN GESSLER.

Witnesses:
R. S. C. CALDWELL,
KATHERINE HOLT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."