L. WEINSTEIN.

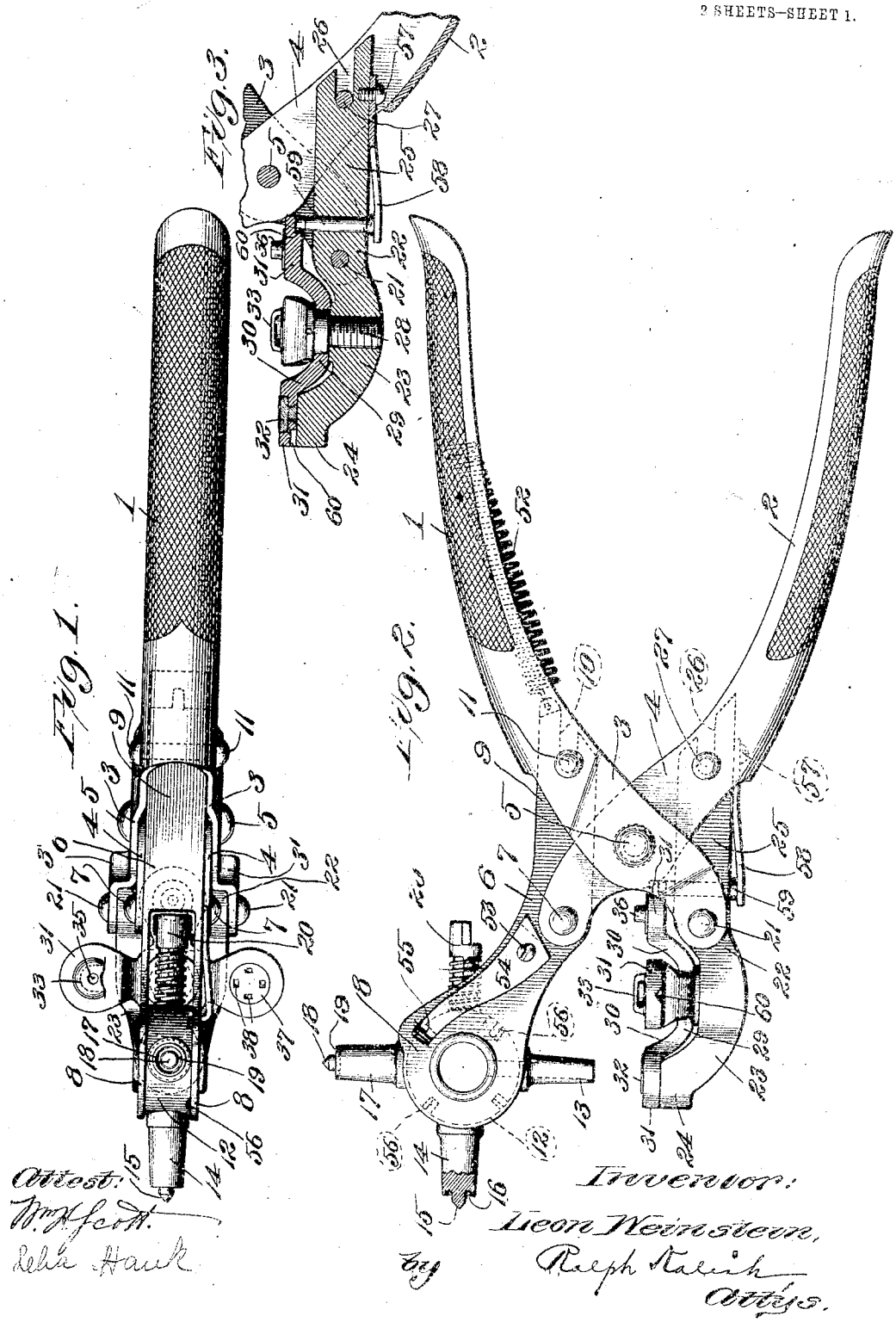
COMBINATION TOOL.

APPLICATION FILED MAY 9, 1914.

1,126,324.

Patented Jan. 26, 1915.

2 SHEETS—SHEET 1.



L. WEINSTEIN.

COMBINATION TOOL.

APPLICATION FILED MAY 9, 1914.

1,126,324.

Patented Jan. 26, 1915.

2 SHEETS-SHEET 2.

Fig. 5.

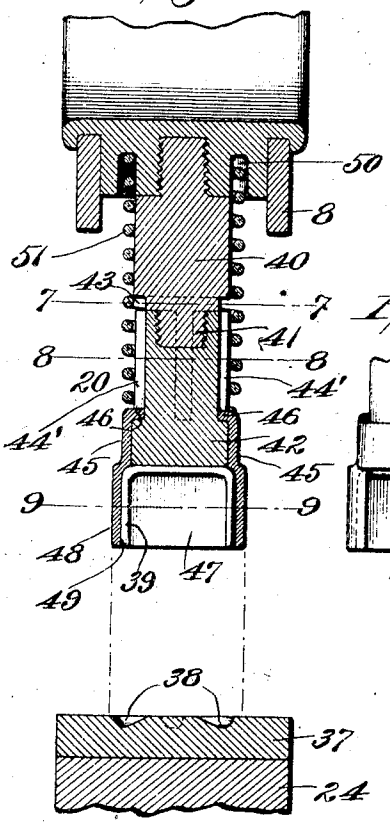


Fig. 6.

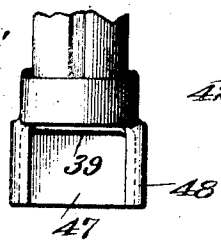


Fig. 4.

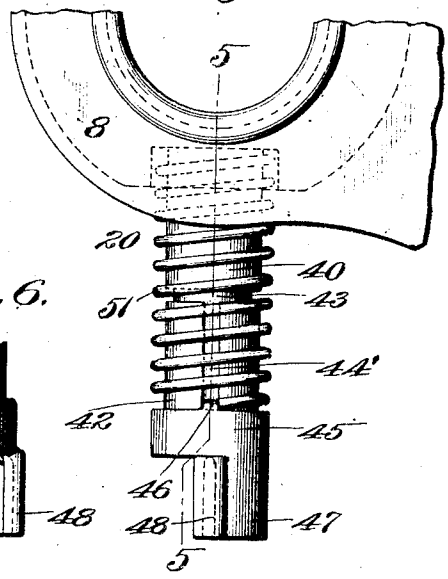


Fig. 10.

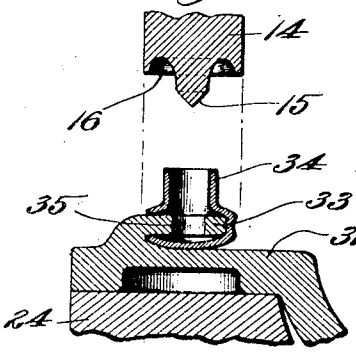


Fig. 7.

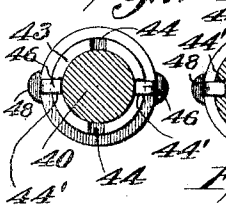


Fig. 8.

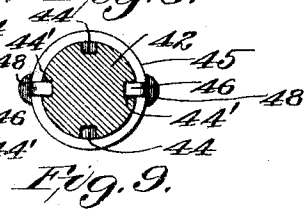


Fig. 9.

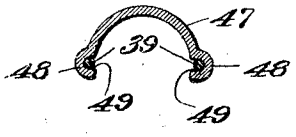
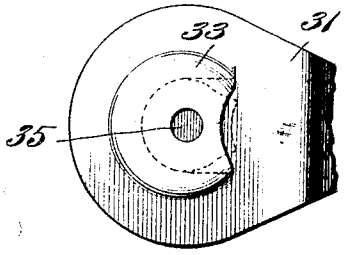


Fig. 11.



Attest.

Jno. F. Co'e, Jr.

Reld. Hauk.

Inventor:

Leon Weinstein:

by Ralph Tulin

Atty.

UNITED STATES PATENT OFFICE.

LEON WEINSTEIN, OF ST. LOUIS, MISSOURI.

COMBINATION-TOOL.

1,126,324. Specification of Letters Patent. Patented Jan. 26, 1915.

Application filed May 9, 1914. Serial No. 837,447.

To all whom it may concern:

Be it known that I, LEON WEINSTEIN, a subject of the King of Roumania, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Combination-Tool, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to a certain new and useful combination tool, the principal object of my present invention being to provide an implement or tool of simple, inexpensive construction which may be readily, easily, and conveniently manipulated and applied to various uses and purposes, such, for instance, as fastening together, by means of staples, pieces of cloth, leather, paper, and the like, or punching or cutting holes in material of the kind mentioned, or setting or riveting eyelets and lacing-hooks in shoes and other articles.

With the above and other objects in view, my present invention resides in certain novel features of form, construction, arrangement, and combination of parts, all as will hereinafter be described and afterward pointed out in the claims.

In the accompanying drawings,—Figure 1 is a plan view of a tool embodying my invention; Fig. 2 is a side elevational view of the same; Fig. 3 is a vertical longitudinal sectional view through the lower jaw of the tool and its carried parts; Fig. 4 is an enlarged side elevational view of the forward end portion of the upper jaw of the tool and of the staple-fastening member of the tool carried thereby; Fig. 5 is a longitudinal sectional view on the line 5—5, Fig. 4, a portion of the staple-fastening cooperating member carried by the lower jaw of the tool being also shown; Fig. 6 is an enlarged elevational view of the lower end portion of the staple-fastening member of the tool; Fig. 7 is a transverse sectional view on the line 7—7, Fig. 5; Fig. 8 is a transverse sectional view on the line 8—8, Fig. 5; Fig. 9 is a transverse sectional view on the line 9—9, Fig. 5; Fig. 10 is an enlarged detail sectional view showing in cooperative relation the lacing-stud fastening or riveting members of the tool; and Fig. 11 is an enlarged plan view of the lower lacing-stud fastening member of the tool.

Referring to the said drawings, in which like reference characters refer to like parts throughout the several views, 1 and 2 indicate, respectively, the upper and lower cooperating handles or jaw-operating members of the tool. Handles 1 and 2, which are preferably stamped up from suitable metallic material and preferably are approximately U-shaped in cross-section particularly at their forward end, are lengthwise forwardly extended at their side-portions or flanges only to provide pairs of cooperating jaw-engaging extensions 3—3 and 4—4, respectively, as seen particularly in Figs. 1 and 2. Approximately midway the length of said extensions 3—3 and 4—4 (reference being had to Fig. 2), handles 1 and 2 and their said extensions 3—3 and 4—4 are hingedly or pivotally fastened together, as by means of a cross-pin or rivet 5.

6 indicates the upper jaw proper of the tool, which fits between, and is pivotally fastened, as by means of a cross-pin or rivet 7, to, jaw-engaging extensions 4—4 of handle-member 2. In side elevation, this jaw 6 has preferably the shape or form seen in Fig. 2, comprising a centrally longitudinally slotted portion 8 projecting obliquely upwardly and forwardly from rivet or pin 7 and preferably enlarged and rounded at its forward end, and a tail-portion 9, projecting rearwardly from rivet or pin 7 and slotted or bifurcated at its rear end, as at 10, to slidably engage with a cross-pin 11 fixed in handle 1 at its forward end.

Journaled in the slot of portion 8 of jaw 6 and at the forward end thereof, as seen clearly in Fig. 1, is a vertically-disposed (reference being had to Fig. 2) disk or member 12 rotatable in a plane longitudinally disposed relatively to, or, as it might be said, in a plane projected lengthwise of, its said supporting jaw 6, disk 12 being adapted to radially carry one half of each of the pairs or sets of the cooperating or co-acting punch, material-fastening, or other material-operating members or dies of the tool. Of such sets or pairs the present tool shown is provided or equipped with four in number, namely, a hole-punching or cutting set, a lacing-stud fastening or riveting set, an eyelet-fastening or riveting set, and a staple-fastening set, the disk 12 correspondingly carrying and having radiating therefrom a material-cutting-member 13 in the form of a tubular or cylindrical blade sharpened at its outer end, a

lacing-stud fastening-member 14 provided at its outer end with a centrally-disposed short longitudinally-extending preferably pointed projection 15 and therearound with an annular recess or groove, as at 16, an eyelet-fastening member 17 greatly similar to member 14 and likewise provided at its outer end with a centrally-disposed short longitudinally-extending projection 18 and therearound with an annular recess or groove, as at 19, and a staple-fastening member 20 hereinafter fully described. It is to be understood, however, that my new tool may equally well be provided or equipped within its relative size or capacity with a greater or less number of sets or pairs of material-operating members.

At their forward end, jaw-engaging extensions 3—3 of handle-member 1 are preferably oppositely bent or offset outwardly, as at 3′—3′, to widen the space therebetween, and fitting between, and pivotally fastened, as by means of a cross-pin or rivet 21, to, jaw-engaging extensions 3—3 is the lower jaw 22 of the tool. In side elevation and cross-section, jaw 22 has preferably also the shape or form seen in Figs. 2 and 3, comprising a forwardly-projecting preferably transversely widened concaved or dish-shaped portion 23 merging into a preferably narrowed forward end or anvil portion 24 flat on its upper face, and a tail-portion 25 projecting rearwardly from rivet or pin 21 and also slotted or bifurcated at its rear end, as at 26, to slidably engage with a cross-pin 27 fixed in handle 2 at its forward end. Journaled, as by means of a pivot-pin or the like 28 in the concavity of portion 23 of lower jaw 22 is a horizontally-disposed (reference being had to Figs. 2 and 3) disk or member 29 rotatable in a plane approximately parallel with the plane of the face of its supporting jaw 22 and at right angles to the plane of rotation of said upper disk 12. Disk 29 is preferably integrally provided with a plurality of radially-disposed outwardly and upwardly projecting arms 30 preferably integrally provided at their outer ends with horizontally-disposed flat portions 31 preferably having in plan view the shape or form seen clearly in Fig. 1. Portions 31 correspond in number with the number of material-operating members carried by upper disk 12, these lower disk-portions 31 being adapted to carry the other half of each of the pairs of coöperating or co-acting punch, material-fastening, or other material-operating members or dies of the tool. Accordingly, lower disk-portions 31 are, respectively, provided on their upper faces with an insert or the like 32 preferably of copper or other relatively soft metal adapted to coöperate with cutting-member 13 and without dulling the sharpness of its blade receive the thrust of cutting-member 13 when jaws 6 and 22 are brought together, a raised open-end pocket or recessed member 33 adapted to receive and properly support a lacing-stud 34, as seen clearly in Fig. 10, and coöperate with said lacing-stud fastening or riveting member 14, member or pocket 33 having a perforation, as at 35, on its upper wall adapted to receive said projection 15 of member 14 when the jaws 6 and 22 are brought together, an upstanding short tubular member 36 adapted to receive and support an eyelet and coöperate with said eyelet-fastening or riveting member 17, and a plate or block 37 adapted to coöperate with said staple-fastening member 20, plate or block 37 being provided on its upper face with a plurality of recesses or indentations, as at 38, adapted to receive, and bend inwardly, the legs of a staple or the like 39 when jaws 6 and 22 are brought together.

As seen clearly in Fig. 2, the under face of each of said portions 31 is approximately on the same plane with the upper face of flat end-portion 24 of jaw 22, said portions 31 being adapted, on the rotation of disk 29, to respectively project over and immediately above said jaw-end-portion 24 which is disposed directly beneath (reference being made to Fig. 2) the axis of disk 12 and adapted to provide a bearing and strengthening surface for said lower disk-portions 31 and their said respective members 32, 33, 36, and 37 when jaws 6 and 22 are brought together.

Staple-fastening member 20 comprises a cylindrical portion 40 having threaded engagement at one end with disk 12. At its other end member 40 is somewhat reduced in diameter (for purposes hereinafter appearing) and provided centrally with a threaded extension 41. Having threaded engagement with extension 41 is a second cylindrical member 42 having the same diameter as the main portion of cylindrical member 40, the reduced portion of cylindrical member 40 providing or forming, as seen in Fig. 4, an annular groove, as at 43.

Formed on the face of cylindrical member 42 is a plurality of diametrically opposite pairs of longitudinally-extending grooves 44—44′ having preferably the same depth as that of, and at their upper ends opening into or being co-incident with, said annular groove 43. Slidably fitting on cylindrical member 42 is a ring-shaped member 45 provided at one side preferably integrally with a pair of diametrically opposite inturned projections 46 adapted to slidably fit in the grooves of one or the other of said pairs of grooves 44 or 44′. At its other side, member 45 is provided also preferably integrally with a substantially semi-cylindrical extension 47 lengthwise provided with a pair of diametrically opposite beads 48 lengthwise interiorly recessed or grooved, as at 49, an

adapted to receive and engage the legs of staple 39 preparatory to attaching the same to the material being operated upon. Interposed on members 40 and 42 between ring-shaped member 45 and disk 12, and having one end preferably seated in an annular recess or groove 50 in disk 12, as seen clearly in Fig. 5, is a coiled spring or the like 51 adapted to yieldingly hold member 45 and its staple-engaging extension 47 in normal outermost position.

Having one end attached or fastened to the rear end of one of said tail-extensions, as, for instance, tail-extension 9, as seen clearly in Fig. 2, and its other end to the under side of handle 1, is a coiled spring 52 adapted to yieldingly hold or maintain handles 1 and 2 and their carried jaws 6 and 22 in normally spread apart or open relation. Due to the engagement of said tail-extensions 9 and 26 of jaws 6 and 22 with said fixed pins 11 and 27, it will be evident that jaws 6 and 22, on the closing and opening movements of handles 1 and 2, are prevented from turning on their pivot-pins 7 and 21 and caused to move in a straight line parallel with each other.

Having one end fixed, as by means of a small screw 53, to, and preferably upon one of the outer side faces of, upper jaw-portion 8, is a leaf-spring or the like 54 having its free end inturned, as at 55, and adapted to yieldingly fit into notches or the like 56 on the side face of disk 12 and thereby releasably lock disk 12 and its carried material-operating members against rotation.

Similarly having one end fixed, as by means of a small screw 57, on the under face of lower jaw-extension 26, is a leaf-spring or the like 58 yieldingly bearing at its free end upon the lower end of an upwardly-presented pin 59 slidably movable in lower jaw extension 26, as shown by dotted lines in Fig. 2, and adapted to removably engage at its upper end with notches or the like 60 on the under face of said lower-disk portions 31 to correspondingly releasably lock disk 29 and its carried material-operating members against rotation.

In operation disk 12 is rotatably moved against the tension of spring 54 to bring the particular material-operating member carried thereby which it is desired to use or employ, as, for instance, cutting or hole-punching member 13, into operative position directly above said lower-jaw portion 24, spring 54 releasably locking the same in such position. Lower disk 29 and its said portions 31 are correspondingly rotated, pin 59 being disengaged therefrom, to bring the proper coöperating material-operating member, in this instance insert 32, upon bearing-surface 24 and hence into coöperative position relatively to cutting member 13, pin 59 again releasably engaging with disk 29 to lock the same against rotatory movement. Handles 1 and 2 being now brought to closed position against the resiliency of spring 52, jaws 6 and 22 will also be brought together, as before described, and said material-operating members caused to perform their prescribed function, in this instance cutting-member 13 being forced or punched through, and thereby cutting holes in, the material being operated upon. It will be evident that, staple-fastening member 20 and its coöperating recessed plate 37 being in proper coöperating position, on handles 1 and 2 being brought together or into closed relation, cylindrical portions 40 and 42, forming in effect a plunger, will be brought downwardly and thereby force the staple 39 carried by ring 45 and its extension 47 into and through the goods or other material being operated upon, the legs of staple 39 on engagement with plate 37 and its respective pair of recesses 38 being bent inwardly and around and the material being operated upon thereby attached or fastened together. Should it be desired to reverse the position of staple 39 relatively to the material being operated upon, ring-shaped member 45 and its said extension 47 are slidably moved upwardly on cylindrical member 42 to bring its said projections 46 into said annular groove 43, when, as will be obvious, member 45 may be rotatably moved on member 42 and its said extensions 46 brought into the other or opposite pair of grooves 44.

Due to the concavity of lower jaw 22 and the flatwise mounting therein as described of lower disk 29, increased space is provided between the jaws of the tool for the doubling upon itself of the material being operated upon, which often becomes necessary in properly positioning or alining in the material eyelets, fasteners, and the like.

I am aware that changes in the form, construction, arrangement, and combination of the several parts of my new tool may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a tool of the kind described, a jaw comprising a concaved portion and an anvil portion flat on its upper face, a disk journaled flatwise for rotation in the concavity of said concaved jaw-portion, and die-bearing members carried by said disk and lying in a plane thereabove, said members being adapted on the rotation of said disk to project over and immediately above said anvil jaw-portion; substantially as described.

2. In a tool of the kind described, a jaw comprising a concaved portion and an anvil portion flat on its upper face, a disk jour-

naled flatwise for rotation in the concavity of said concaved jaw-portion, curved arms radiating from said disk, and flat die-bearing members carried by said arms and lying in a plane above said disk, said members being adapted on the rotation of said disk to project over and immediately above said anvil jaw-portion; substantially as described.

3. In a stapling tool, a staple-fastening member including a fixed rigid portion, said portion being provided on its face with a pair of longitudinally disposed grooves, a staple-engaging portion slidable on said fixed portion, said slidable portion being provided with inwardly presented projections fitting in and engaging with said grooves, and a spring coiled on said fixed portion and engaging with said slidable portion to yieldingly hold said slidable portion in normal position; substantially as described.

4. In a stapling tool, a staple-fastening member including a fixed portion provided with an annular groove and a plurality of pairs of longitudinal grooves opening at one end into said annular groove, a staple-engaging portion slidably and rotatably movable on said fixed portion and having projections adapted to engage with a pair of said longitudinal grooves, and means for yieldingly holding said slidable portion in normal position; substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

LEON WEINSTEIN.

Witnesses:
RUTH PETERSON,
LEHA HAUK.