

G. L. BAKER.
COMBINATION TOOL.

APPLICATION FILED OCT. 20, 1900.

NO MODEL.

2 SHEETS—SHEET 1.



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No. 725,651.

PATENTED APR. 21, 1903.

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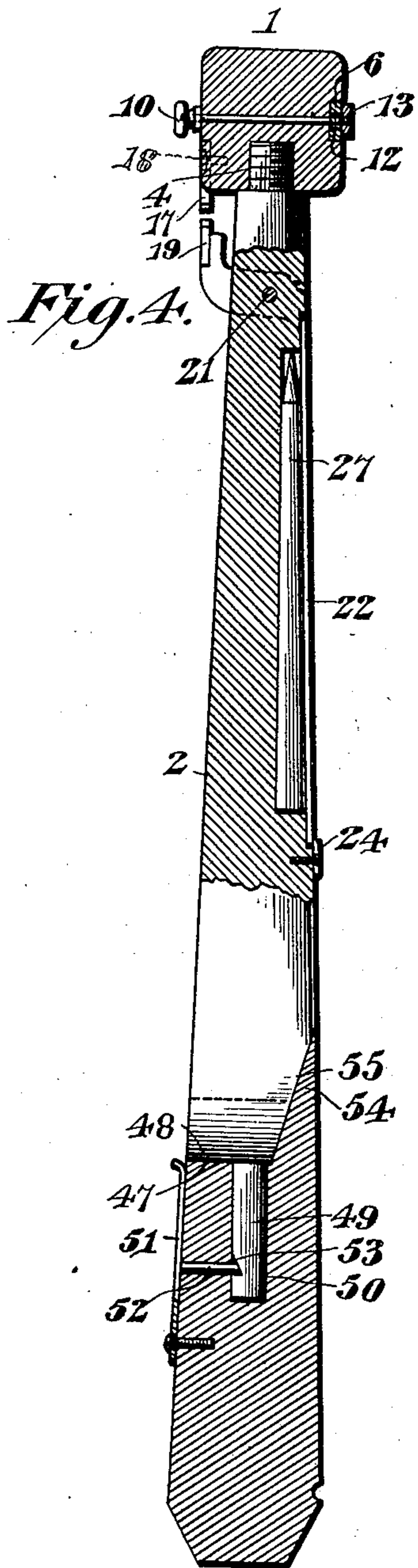


Fig. 4.

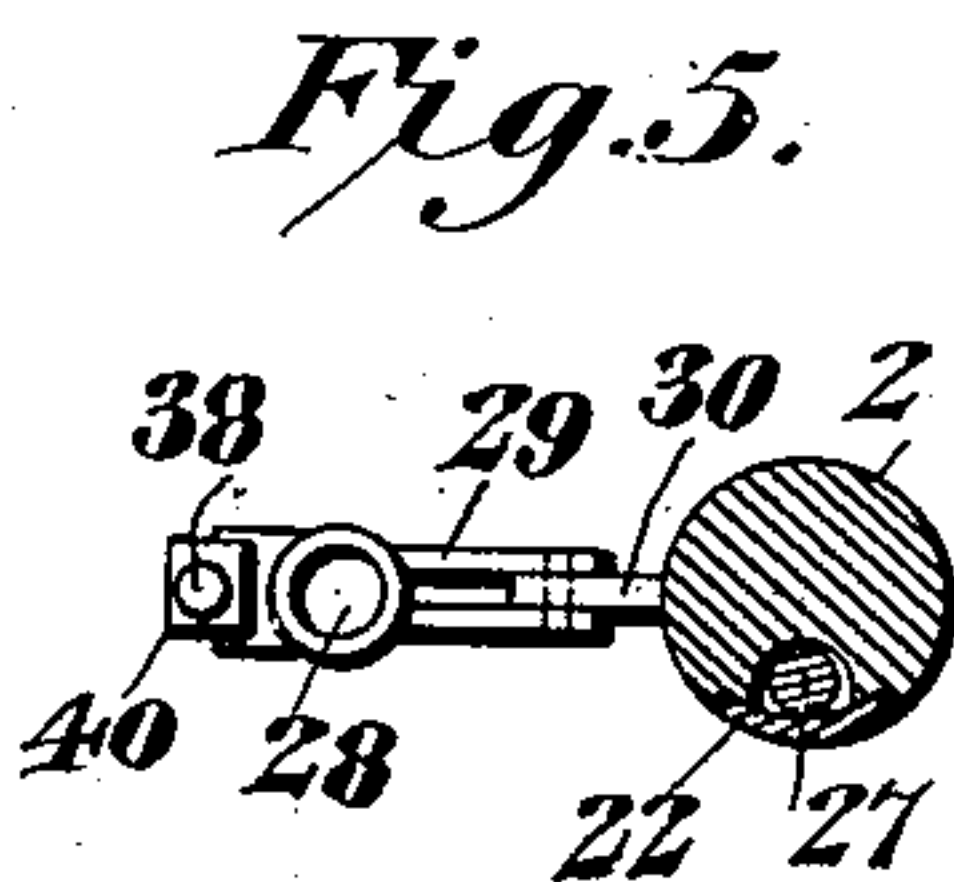


Fig. 5.

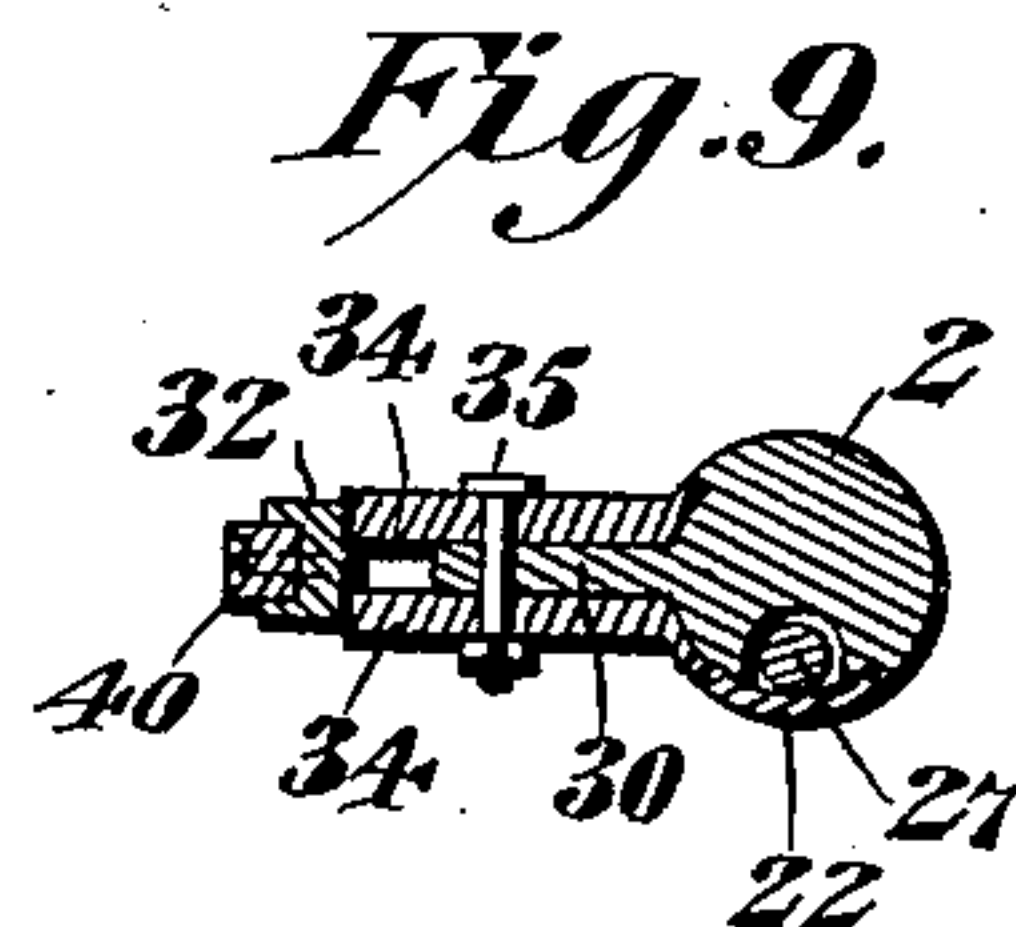


Fig. 9.

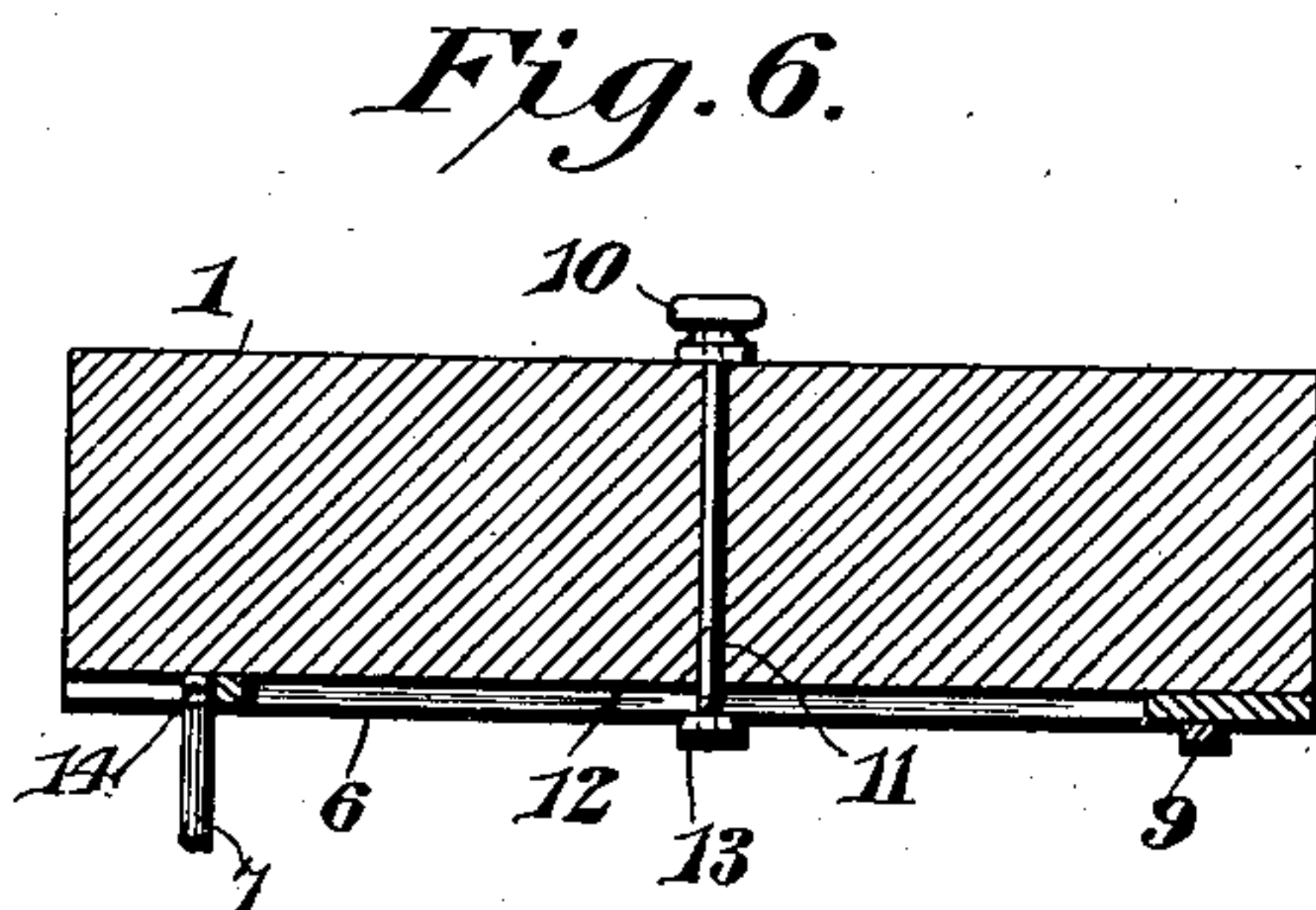


Fig. 6.

Fig. 7.

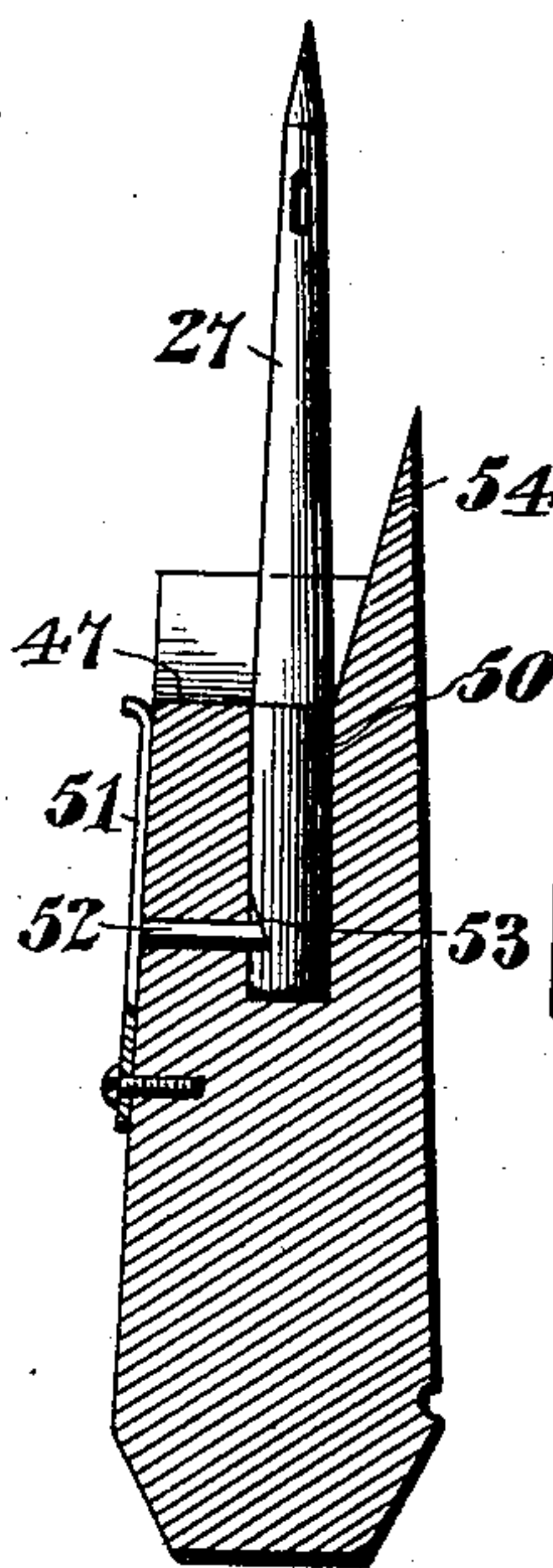
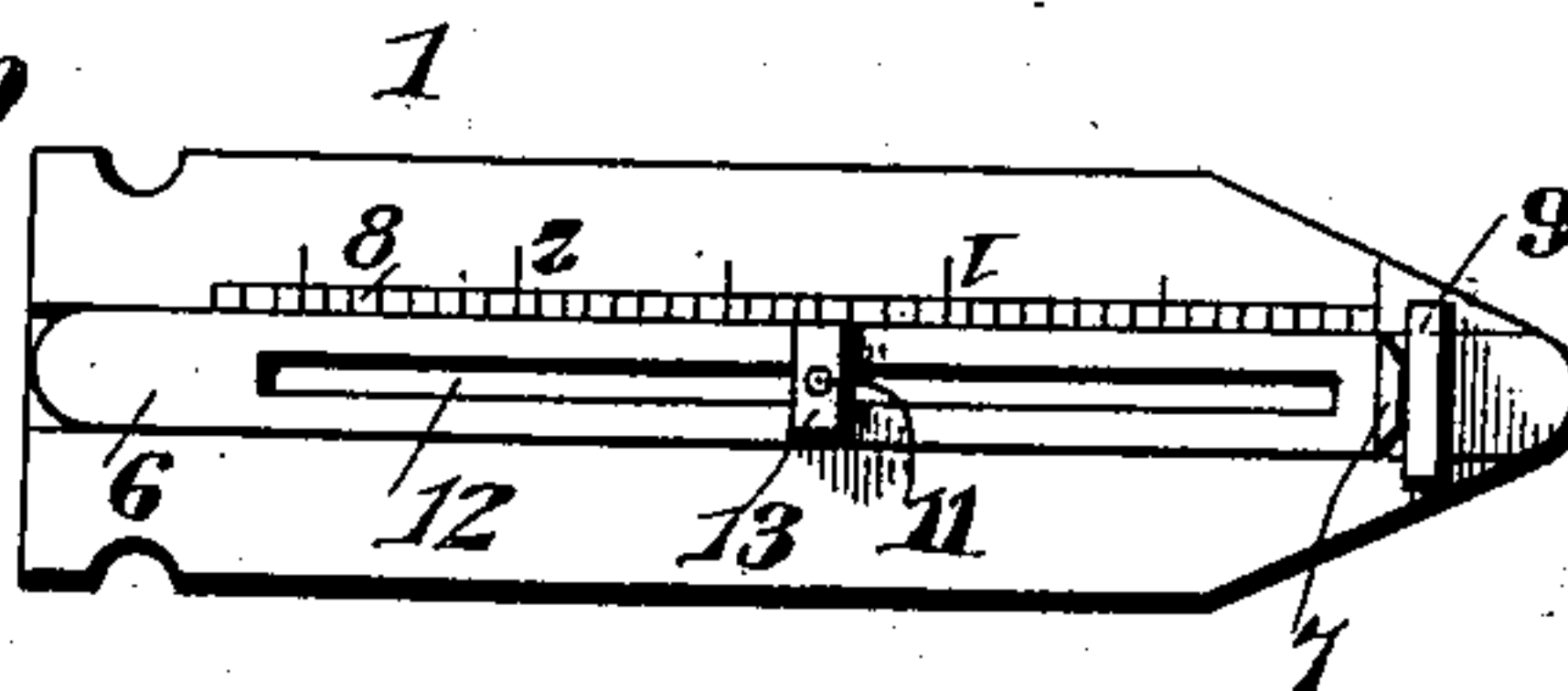


Fig. 8.



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UNITED STATES PATENT OFFICE.

GILBERT L. BAKER, OF WATERFORD, CALIFORNIA.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 725,651, dated April 21, 1903.

Application filed October 20, 1900. Serial No. 33,756. (No model.)

To all whom it may concern:

Be it known that I, GILBERT L. BAKER, a citizen of the United States, residing at Waterford, in the county of Stanislaus and State of California, have invented a new and useful Combination-Tool, of which the following is a specification.

My present invention relates to a novel combination-tool, and has for its object the production of a device for repairing harness and including in a single structure the several appliances which are necessary for effecting the repair of any portion of the harness which may be accidentally broken or deranged.

Considered in a more specific aspect the invention consists in combining in a single tool an adjustable leather-cutting device to facilitate the formation of a splice—for instance, a leather perforator or punch—a rivet-set for pressing the bur to its proper place upon its rivet after the latter has been passed through the openings in the leather, a rivet-nipper for severing the surplus end of the rivet after the bur has been applied, and an upsetting-die for heading or upsetting the end of the rivet behind the bur to complete the repair, the device in its entirety being constructed in the form of a hammer, which may be used as such and upon which the various elements or organizations of the tool are aggrouped.

To the accomplishment of these objects and others which will hereinafter more fully appear, the invention consists in the construction and arrangement of parts to be hereinafter fully described, illustrated in the accompanying drawings, and defined in the appended claims.

Referring to said drawings, Figure 1 is a side elevation of my device complete. Figs. 2 and 3 are front and rear elevations thereof. Fig. 4 is a central longitudinal section on the line 4 4 of Fig. 1. Fig. 5 is a transverse section on the line 5 5 of Fig. 1. Fig. 6 is a longitudinal section through the head on the line 6 6 of Fig. 1, illustrating in dotted lines the folded position of the cutter. Fig. 7 is a view of the handle extension removed and fitted with the collar-needle. Fig. 8 is a view of the head with the cutter-slide reversed. Fig. 9 is a transverse sectional view on the line 9 9 of Fig. 1.

Referring to the numerals employed to designate corresponding parts throughout the views, 1 indicates the head, which in general form resembles the head of an ordinary hammer and is provided with a handle 2, attached in any suitable manner—as, for instance, by the threaded stud 3, screwed into a socket 4, formed in the head. In one side face of the head 1 is formed a longitudinal slide-recess 5 for the reception of the cutter-slide 6, carrying at one end a foldable cutter 7, designed to be adjusted in accordance with a series of graduations or scale 8 to adapt the device for cutting leather strips of any desired dimensions. The adjustment of the cutter is relative to a fixed guide 9 outstanding from the face of the head at one end, and it is designed to be fixed in its adjusted position by means of a thumb-screw 10, having a threaded shank 11 passed through the head and through a longitudinal slot 12 in the slide 6 for connection with a clamping-plate 13, disposed against the outer face of the slide to clamp the latter against the bottom of the recess 5, and thereby hold the cutter 7 against accidental displacement. The cutter 7, which is reversible, is also designed to be folded down upon the slide when not in use, and is therefore pivotally mounted upon a transverse pintle 14, extending across a recess at the front end of the slide and piercing a lug 15, extending from the bottom of the cutter and preferably of rectangular cross-sectional contour, as shown in Fig. 2, in order that its flat under face 16 will normally be disposed against the bottom of the recess 5 to prevent the accidental pivotal movement of the cutter when the latter is organized for use, as shown in Fig. 1. In order to fold the cutter, it is simply necessary to move the slide longitudinally until the lug 15 passes beyond the head, when, as will be obvious, the cutter may be turned down upon the slide and the latter returned to its normal position, in which it will be impossible for the cutter to move back to its unfolded position until the slide has again been drawn longitudinally, as already described. If it should be desired to adjust the cutter to a point very near the guide 9—as, for instance, to facilitate the cutting of exceedingly-narrow strips—the thumb-screw 10 is rotated to loosen the clamping-plate 13,

which latter is then given a quarter-turn to align it with the slot 12 in the slide. The slide may now be withdrawn from the recess and reversed to bring the cutter at the end of the slide adjacent to the guide, after which the clamping-plate may be returned to its normal position for the purpose of fixing the slide in any position to which it may have been adjusted. In this manner the head 1 not only constitutes a hammer, but is furthermore employed as the base-plate or holder of a cutter, and it serves still another function inasmuch as it constitutes the support for a fixed nipper-jaw 17, which may be either integral or in the form of a steel plate set into the recess in the side face of the head 1 opposite the cutter and secured by a screw 18. The other or movable nipper-jaw 19 is carried by a pivoted member 20, mounted upon a pivot-bolt 21 and comprising an elongated nipper handle or lever 22, which normally lies within a recess 23, formed in the side face of the handle 2, and is secured when not in use by a turn-button 24, mounted upon the handle 2 and provided with a recess 25 at one edge, which in one position of the button will permit the withdrawal of the nipper-handle from its recess for the purpose of facilitating the operation of the nippers. Aside from this function as the nipper-actuating member the handle or lever 22 serves as a cover-plate for a needle-pocket 26, formed in the bottom wall of the recess 23 and designed to receive the collar or harness needle 27, which is only removable after the handle 22 has been swung away from the handle 2. The manner in which this needle is employed will be explained hereinafter.

As shown in Fig. 1 of the drawings, the nipper—that is to say, the cutting or nipping jaws thereof—are located in the rear of the handle 2, and they are disposed beyond that side of said handle opposite the side upon which the nipper handle or lever 22 is disposed. This relative arrangement is followed in order to permit the mounting of a leather perforating or punching device upon the front face of the handle 2, where its proper function will not be interfered with by the moving parts of the nipper mechanism. The punching device comprises a tubular guide 28, formed, as shown, with a pair of ears 29, bolted to the opposite sides of a bracket 30, extending from the front face of the handle. Within this guide is designed to reciprocate the upper cylindrical end 31 of the punch-carrier 32, formed at its rear end with an angularly-disposed lug 33, extending between and eccentrically pivoted to a pair of circular bearing-ears 34, which embrace the lower end of the bracket 30 and are pivoted thereto by means of a pintle 35. The ears 34 are formed by bifurcating the upper end of a punch-lever 36, designed normally to lie flush with the surface of the handle 2 within a recess in the front face thereof and to be secured, like the nipper-handle 22, by means of a turn-

button 37. It will now appear that when the punch-handle 36 is swung away from the handle 2 or stock of the device the punch-carrier 32 will be reciprocated toward or from the head 1. This movement is utilized to effect the punching operation by mounting a punch or die 38 upon the carrier 32, which latter is provided in its outer face with a longitudinal recess 39, within which is secured the shank 40 of the punch. The lower end of the shank 40 is seated against a shoulder 41, formed at the lower end of the carrier 32, and the detachment of the shank is prevented by means of a screw 42, passed through it and into the carrier 32. The mutilation of the head by the end of the punch or die is prevented by inlaying a copper or other hard-metal die-plate 43 in the under face of the head, as shown.

To the lower end of the handle 2 is secured a handle extension 44, formed adjacent to its lower extremity with a rivet-set 45 and with an upsetting-recess 46, it being the purpose of these parts of the device to set the bur of the rivet and to upset the rivet end after the leather has been spliced and perforated for the reception of the rivet and after the extremity of the latter has been cut away by the manipulation of the nipper. The use of the rivet-set and upsetting-recess is facilitated by the detachability of the extension 44, as the latter is thus removed from the hammer, which may be used to strike a blow upon the extension for the purpose of setting the rivet-bur or of upsetting the end of the rivet, as the case may be. The manner of effecting this detachable connection between the extension 44 and the end of the handle is susceptible of wide variation; but I prefer to form the upper end of the extension with a concave seat or socket 47 for the reception of the convex end 48 of the handle, the latter being provided with a notched tongue 49, designed to extend into a longitudinal recess 50, formed in the handle extension and opening at its upper end through the bottom of the socket 47. Upon one side of the extension is mounted a spring-catch plate 51, provided with a catch 52, extending through the wall of the handle extension and received within the notch of the tongue 49 to prevent the accidental detachment of the handle extension when the device is in use. Aside from the utility of the handle extension 44 as a rivet-set and upsetting-die it is constructed in the peculiar manner stated in order to equip it as a tool-holder—as, for instance, for the needle 27, the shank of which is provided with a notch 53, designed to be engaged by the catch 52 for the purpose of holding the needle firmly in the handle extension, which latter in this event constitutes a handle for the needle and may in similar manner be fitted with another character of small implement or tool—such as an awl, burnisher, &c.—which it might be desirable to employ in connection with the manufacture or repair of

harness. In some instances also it may be particularly desirable to provide a tool of the general nature of a chisel for bending or spreading or otherwise manipulating the metal parts of the harness—as, for instance, the buckles thereof—and I have accordingly formed a chisel 54 at the upper end of the handle extension 44 and at one end of the concave socket 47, the adjacent portion of the handle 2 being provided with a correspondingly-shaped recess 55 for the reception of the chisel when the handle extension is secured in place in the manner stated.

Assuming the device to be organized as illustrated in Fig. 1, its mode of use in effecting the repair of harness is as follows: The cutter 7 is first adjusted to a suitable distance from the gage or guide 9 to permit the cutting of a strip of leather of the desired width or to permit the cutting and shaping of the ends of strips already obtained. The device is then used as a cutter and is manipulated through the medium of the handle 2. The leather ends or pieces to be connected are then perforated either separately or simultaneously by placing them over the die-plate 43 and drawing the punch handle or lever outwardly to cause the punch or die 38 to pass through the leather, and thereby to produce suitable openings for the reception of a rivet. The rivet is then passed through the openings in the lever and the bur or cap is slipped to place. The operator now draws back the catch-plate 51 to release the handle extension 44 and passes the end of the rivet projecting beyond the bur into the rivet-set of the extension. The head 1 of the tool is now used as a hammer, and a light blow is struck on the side of the handle extension opposite the set. The effect of this will be to drive the bur close against the side of the leather and to compress the layers of the latter between the bur and the head of the rivet. The extension is now removed from the shank of the rivet, and the surplus end of the latter is placed between the jaws of the nipper and is severed by swinging the handle 22 of the movable nipper-jaw in the direction of the handle 2 of the hammer. The surplus end of the shank having thus been removed, the repair is completed by placing the upsetting-recess 46 of the handle extension 44 over the end of the rivet-shank, which is upset or spread to prevent the removal of the bur by striking a light blow upon the handle extension with the hammer. The extension may now be secured to the handle in the manner shown, or if it is desired to use the needle 27 the extension may be used as a handle therefor, as shown in Fig. 7. In like manner the buckles of the harness may be opened to secure the attachment of leather loops by the use of the chisel 54.

It will thus appear that I have produced a simple, ingenious, and effective device, designed particularly as an emergency repair-

kit, which may be used to effect the prompt repair of harness—as, for instance, in the event of an accident at a point removed from skilled assistance; but while the present embodiment of my invention is believed at this time to be preferable I wish to reserve the right to effect such changes, modifications, and variations as may be promptly comprehended within the scope of the protection prayed.

What I claim is—

1. In a harness-repair tool, the combination with a handle or stock and a head carried thereby and provided with a fixed nipper-jaw and a fixed punch-die at opposite sides of the stock, of a pivoted nipper-jaw in coöperative relation with the fixed nipper-jaw, and provided with a handle disposed normally upon the face of the stock, a reciprocatory punch-carrier mounted to one side of the stock, a punch-die mounted upon said carrier in coöperative relation with the fixed die carried by the head, and a punch-lever operatively connected with the punch-carrier and disposed to lie against the face of the stock but disposed in a plane in angular relation to the handle of the nipper-jaw.

2. In a harness-repair tool, the combination with a head provided with a longitudinal recess, of an adjustable slide therein, and a cutter pivotally mounted upon the slide and provided with a flat face disposed against the bottom of the recess to prevent the accidental folding of the cutter.

3. In a harness-repair tool, the combination with a recessed head provided with a gage and with graduations, of a cutter-slide movable within the recess, a pivoted cutter carried by the slide, means for retaining the slide in its adjusted position, and other means for retaining the cutter in its folded or unfolded position, as the case may be.

4. In a harness-repair tool, the combination with a recessed head, of a slotted slide movable in the recess, a cutter carried by the slide, a clamping-plate disposed against the face of the slide and arranged to pass through the slide when alined with the slot therein to permit reversal of the cutter, and means for drawing the clamping-plate against the slide to retain it in its adjusted positions.

5. In a harness-repair tool, the combination with a handle and head, of a bracket extending from the handle, a tubular guide carried by the bracket, a punch-carrier movable in the guide, a punch-lever mounted upon the bracket and having eccentric pivotal connection with the carrier, and a punch-die arranged to be projected against the head and having its shank secured to the carrier at a point below the guide.

6. In a harness-repair tool, the combination with a handle and head provided with a nipper-jaw, of a pivoted nipper-jaw carried by the stock and provided with an extended handle disposed in a recess therein, and a pocket formed in the bottom of said recess and de-

signed to be covered by the handle of the nipper-jaw.

7. In a harness-repair tool, the combination with a handle having a convex end and a head, 5 of a handle extension provided with a concave socket and with a longitudinal recess, a notched tongue extending from the handle and designed to enter the longitudinal recess in the extension, and a latch carried by the 10 extension and arranged to engage the notch of the tongue.

8. In a harness-repair tool, the combination with the handle or stock, and a head carried thereby, of an adjustable cutter mounted on 15 one side face of the head, a fixed nipper-jaw and a fixed punch-die mounted on the under

side of the head at opposite sides of the handle, a movable nipper-jaw and a movable punch-die carried by the handle, and disposed in coöperative relation with the fixed nipper-jaw and fixed punch-die respectively, and actuating devices for the movable nipper-jaw and the movable punch-die, said actuating devices being mounted for movement in different directions to prevent their interference. 20 25

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

G. L. BAKER.

Witnesses:

JOHN H. SIGGERS,
E. G. SIGGERS.