

J. K. DIAMOND.  
 TOOL FOR CLENCHING BELT FASTENERS.  
 APPLICATION FILED OCT. 24, 1911.

1,060,746.

Patented May 6, 1913.

2 SHEETS—SHEET 1.

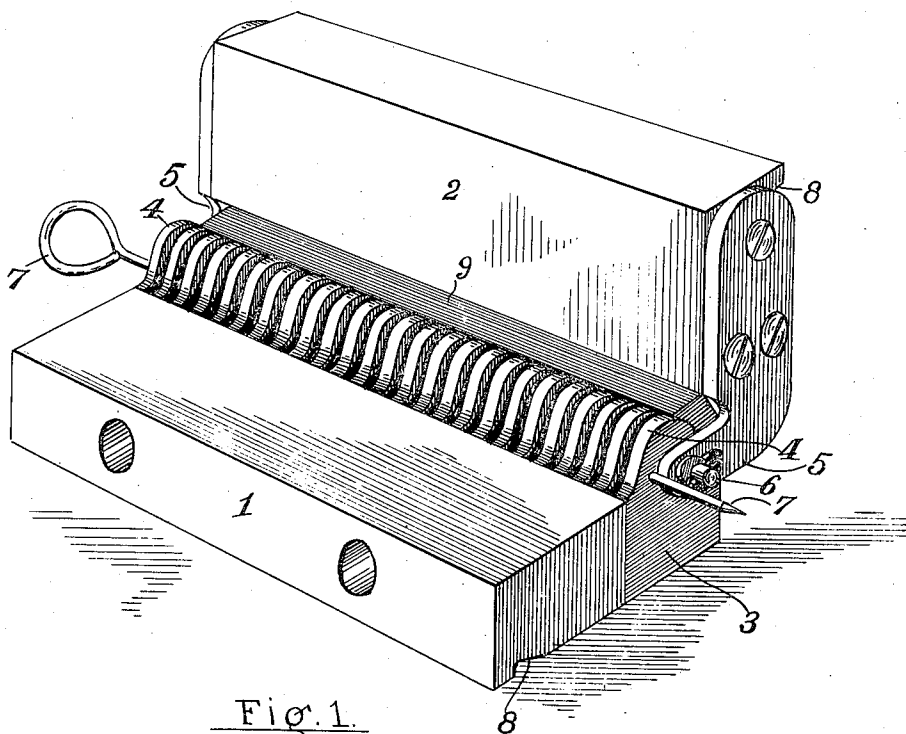


Fig. 1.

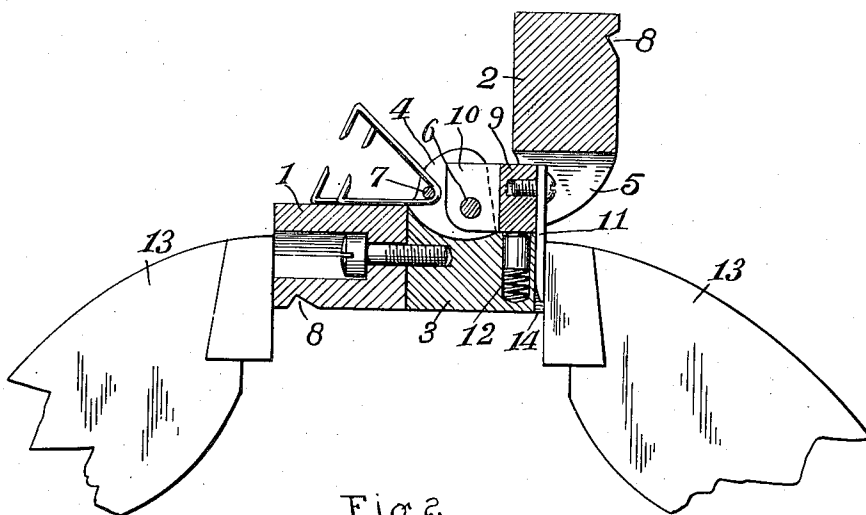


Fig. 2.

Witnesses

*Harold C. Van Antwerp.*  
*Anna De Windt*

Inventor

James K. Diamond

By *Luther V. Moulton*  
 Attorney

J. K. DIAMOND.  
 TOOL FOR CLENCHING BELT FASTENERS.  
 APPLICATION FILED OCT. 24, 1911.

1,060,746.

Patented May 6, 1913.

2 SHEETS—SHEET 2.

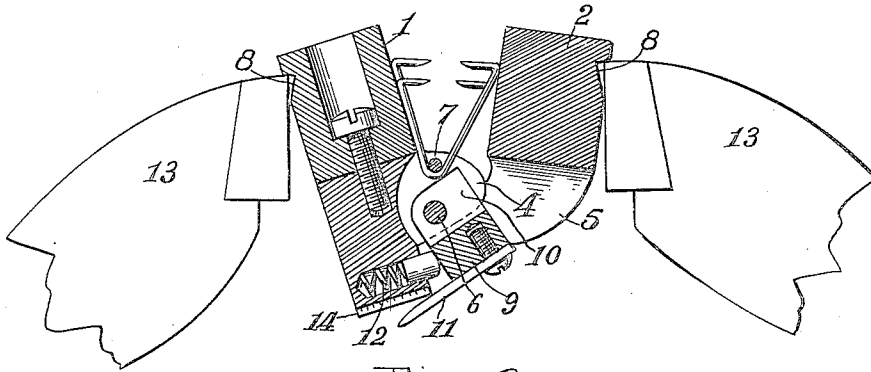


Fig. 3.

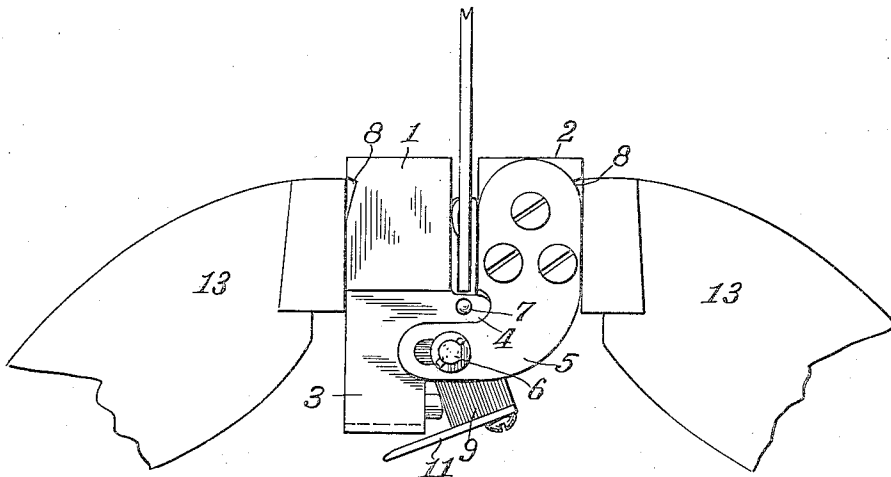


Fig. 4.

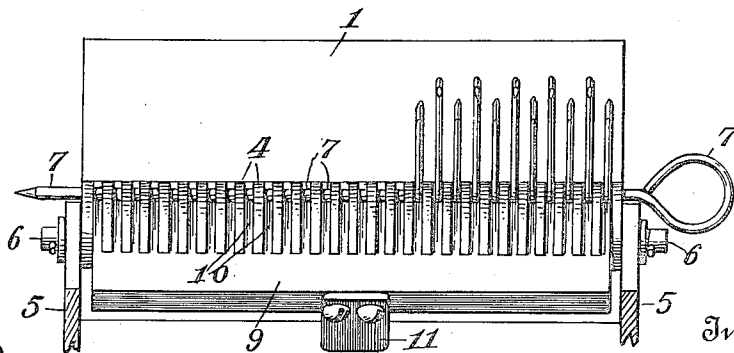


Fig. 5.

Witnesses

*Harold C. Van Antwerp*  
*Anna De Windt*

By

Inventor  
*James K. Diamond*  
 Attorney

# UNITED STATES PATENT OFFICE.

JAMES K. DIAMOND, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO J. B. STONE CO., OF  
GRAND RAPIDS, MICHIGAN, A CORPORATION OF MICHIGAN.

## TOOL FOR CLENCHING BELT-FASTENERS.

1,060,746.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed October 24, 1911. Serial No. 656,469.

*To all whom it may concern:*

Be it known that I, JAMES K. DIAMOND, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Tools for Clenching Belt-Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in tools for clenching belt fasteners and its object is to provide a simple and effective device that can be operated by means of an ordinary machinist's vise or other like means, and to provide the same with various new and useful features hereinafter more fully described and particularly pointed out in the claims.

My device consists essentially of a pair of pivotally connected clenching dies adapted to be engaged by the jaws of an ordinary machinist's vise, supported therebetween and pressed toward each other thereby to clench the fasteners into a belt and having attached thereto suitable means for pivotally connecting the dies and for holding the fasteners spaced apart and in parallel planes between the dies, and in various features of construction and arrangement as will more fully appear by reference to the accompanying drawings, in which:—

Figure 1 is a perspective view of a device embodying my invention; Fig. 2 a vertical section of the same held between the jaws of a vise in position for inserting the fasteners therein; Fig. 3 the same shifted to initial position for clenching the fasteners; Fig. 4 an end elevation showing the position of the parts at the close of the clenching operation; Fig. 5 a detail in plan view of one of the dies and a part of the holding means for the fasteners.

Like numbers refer to like parts in all of the figures.

1 and 2 represent the clenching dies which are preferably rectangular bars of steel and of substantially equal dimensions. Secured to one of these dies and extending along one edge of the same is a receiving member which

extends above the plane of the working face of the dies to which it is secured and is provided with an upwardly projecting portion 55 4 recessed transversely at regular intervals to receive the fasteners. Extending through this receiver is a pivot pin 6 on which various parts are pivoted as hereafter described. The opposing die 2 is provided with arms 5 60 secured to its respective ends, which arms embrace the receiver and are slotted at right angles to the working face of the die to receive the pivot pin 6 whereby the dies are pivoted to open and close about the axis of this pin and the jaw 2 will move bodily toward and away from the jaw 1 and thus the jaws will adjust parallel to each other upon belts of various thickness when closed upon the same. Extending through the slotted 70 portion of the receiver is also a removable pin 7 spaced apart from the pivot pin 6 a suitable distance to properly engage the concave side of the crown of the fastener. To press the fasteners against this pin and bring 75 the same in alinement and with one member against the surface of the die 1 a presser bar 9 is provided having transverse slots with projections 10 therebetween extending into the slots of the receiver through which 80 projections the pivot pin 6 extends whereby this bar is eccentrically pivoted with the projections free to turn within the slots of the receiver and engage the convex side of the crown of the fasteners opposite the pin 7. 85 A spring 12 serves to turn this presser bar about the pivot and engage the projections with the fasteners as illustrated in Fig. 3. To move the projections away from the pin 7 an arm 11 is attached to the bar which 90 swings into a recess 14 in the side of the receiver.

To support the device in partially closed position between the jaws of a vise the outer side of each die is provided with a shoulder 95 8 to engage the upper angle of the respective jaw of the vise. When the device is partially closed so that the die 2 rests against the other leg of the fasteners the device can be suspended between the jaws 100 of a vise as shown in Fig. 3 and by closing the vise the dies will swing about the axis of the pivot pin and clench the fasteners through a belt as illustrated in Fig. 4, and

when the jaws finally close upon the belt the slot in the arms will permit the jaw 2 to move bodily toward the jaw 1 and thus seat the jaws parallel upon opposite sides of a belt of varying thickness.

To insert the fasteners in the device the die 1 and receiver 3 are placed horizontally between the jaws of a vise as illustrated in Fig. 2 and the die 2 opened up to a vertical position. The vise will force the arm 11 into the recess 14 and thus compress the spring 12 and swing the projection 10 away from the pin 7 furnishing sufficient clearance to readily insert the staples with the convex crown of the same in alinement against the projections 10 and with one member of the fastener resting on the surface of the die 1. In this position the pin 7 is inserted freely within the fasteners. The die 2 can be swung upon the opposite legs of the fasteners and the device removed from the jaws of the vise. The springs 12 will now turn the presser bar about the pivot pin 6 and bring the projections against the convex side of the crowns of the fasteners thus securely holding them in accurate alinement and in parallel planes ready for the clenching operation heretofore described.

What I claim is:—

1. A tool of the class described, comprising a clenching die, a receiver attached to the die and having transverse slots therein, a pivot pin and a removable pin extending through the slotted portion of the receiver, a presser bar having projections extending within the slots of the receiver and eccentrically pivoted on the pivot pin, and means for rotating the presser bar about said pin.

2. A tool of the class described, comprising a pair of clenching dies adapted to be engaged by the jaws of a vise, a receiver attached to one of the dies and having a portion recessed transversely, a pivot pin extending through the recesses of the receiver, a removable retaining pin also extending through recesses of the receiver, a presser bar having projections extending into the slots of the receiver and eccentrically pivoted on the pivot pin, and a spring to move the projections of the presser bar toward the removable pin.

3. In a tool of the class described, a pair of clenching dies pivotally connected, a receiver attached to one of the dies and having transverse recesses therein, a pivot pin and a removable pin extending through the recesses of the receiver, a presser bar having projections extending into the slots of the receiver and mounted on the pivot pin, a spring engaging the presser bar to move the projections toward the removable pin, and an arm on the presser bar to move the projections away from the pin.

4. In a tool of the class described, a pair

of clenching dies, a receiver attached to one of the dies and extending above the working surface of the same and also provided with transverse slots and a recess, a pivot pin and a removable pin extending through the walls between the slots, a presser bar having projections extending into the slots and journaled on the pivot pin, an arm attached to the presser bar and adapted to enter the recess and a spring to turn the presser bar toward the removable pin.

5. A tool of the class described comprising a clenching die and a receiver adapted to be held horizontally by the jaws of a vise, a second clenching die pivoted to the receiver to swing freely to vertical position, said dies also provided with shoulders to engage the vise, whereby the dies are suspended between the jaws of the vise in oppositely inclined position, and are closed to vertically parallel position when closed by the vise to clench the fasteners.

6. A tool of the class described, comprising a clenching die and receiver adapted to be held horizontally by the jaws of a vise, a second clenching die pivoted to the receiver to swing freely to a vertical position, a pivoted member adapted to enter the receiver and engage fasteners therein and an arm attached to said member and adapted to be engaged by the said jaws of a vise when the die and receiver are held horizontally therebetween and means for suspending the dies between the jaws of a vise with said arm out of contact therewith and the die in partially closed position.

7. A tool of the class described, comprising a pair of clenching dies pivoted to each other, a receiver having transverse slots, a retaining pin extending through the slots, a presser bar pivoted to the receiver and having projections adapted to swing into the slots and toward the pin, an arm on the bar to swing the projections away from the pin, a spring engaging the bar to swing the projections toward the pin and shoulders on the dies to engage the jaws of a vise and suspend the dies between the same.

8. In a tool of the class described, a pair of clenching dies shouldered on the outer sides to engage the jaws of a vise and suspend the dies therebetween, a receiver attached to one of the dies, a pivot pin in the receiver, arms attached to the other die and embracing the receiver and having slots therein to pivotally and slidably engage the pivot pin and means for holding belt fasteners in the receiver.

9. In a tool of the class described, a pair of clenching dies, a receiver attached to one of the said dies and having transverse slots therein, a pivot pin and a removable pin extending through the slotted portion of the receiver, a presser bar having projections ex-

5 tending into the slots of the receiver and journaled on the pivot pin, a spring to turn the presser bar in one direction and an arm on the said bar to turn the same in the opposite direction, slotted arms attached to the other die embracing the receiver and rotative and slidable on the pivot pin.

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

JAMES K. DIAMOND.

Witnesses:

HAROLD O. VAN ANTWERP,  
ANNA DE WINDT.