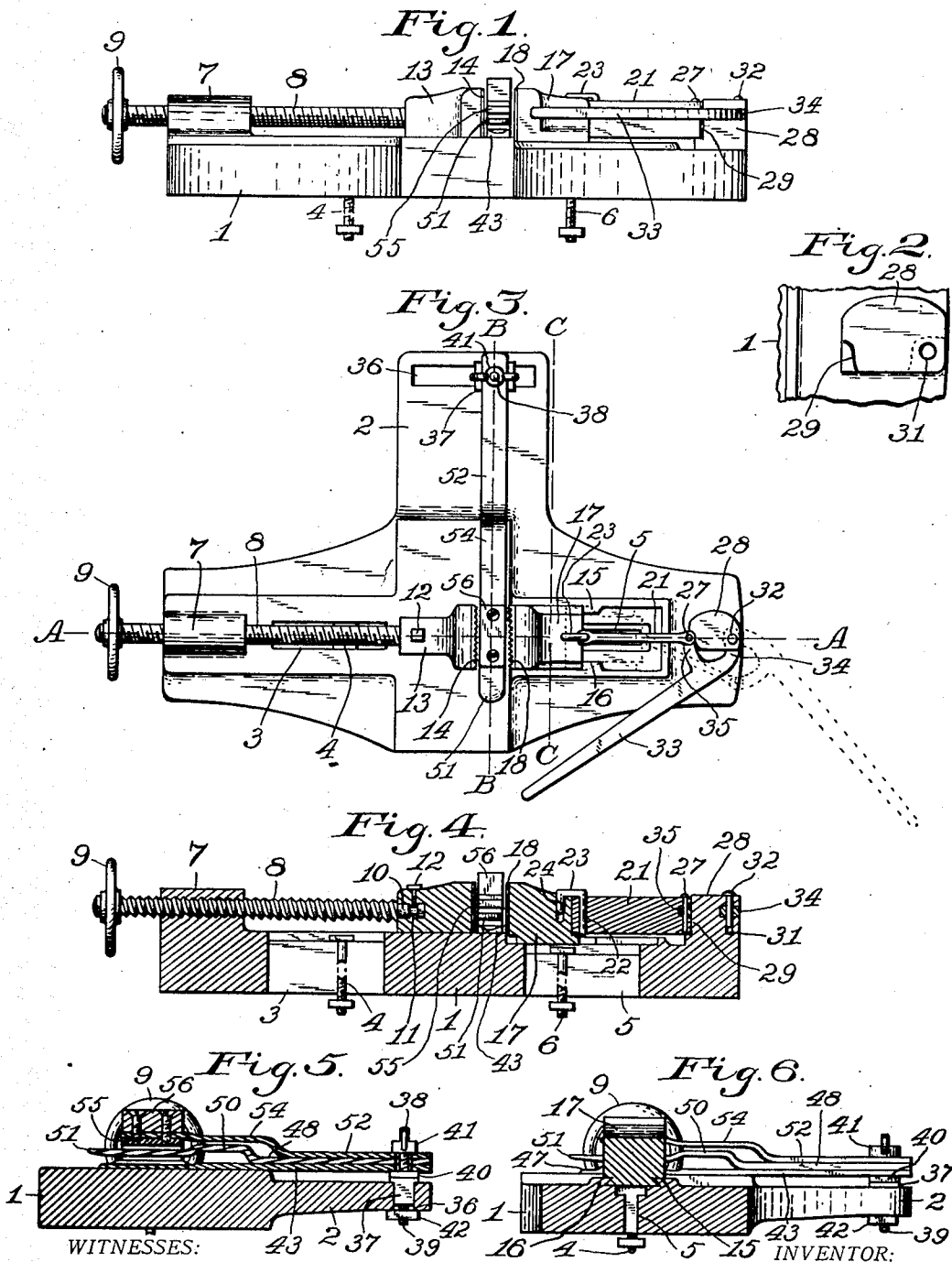


No. 892,722.

PATENTED JULY 7, 1908.

O. O. HARRIS.  
HARNESS LOOP FORMER.  
APPLICATION FILED JULY 12, 1907.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

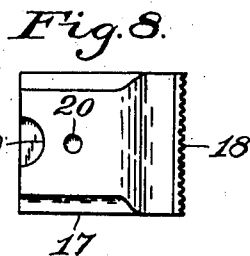
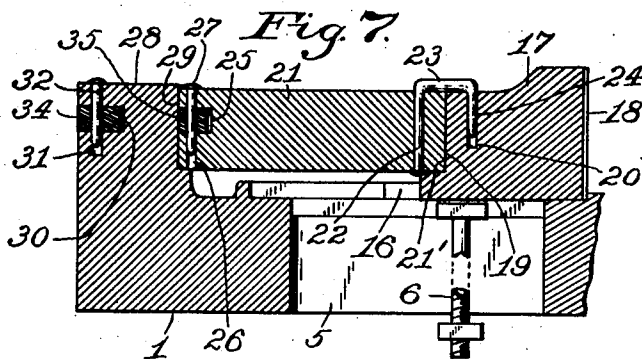


Fig. 9.

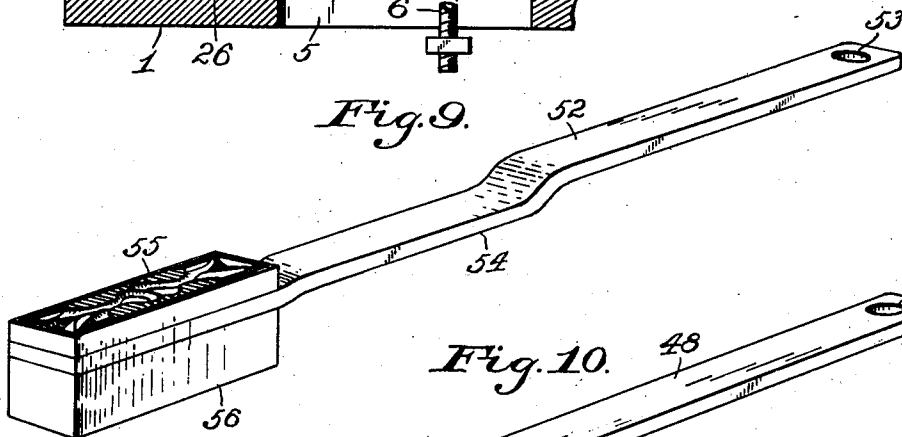


Fig. 10.

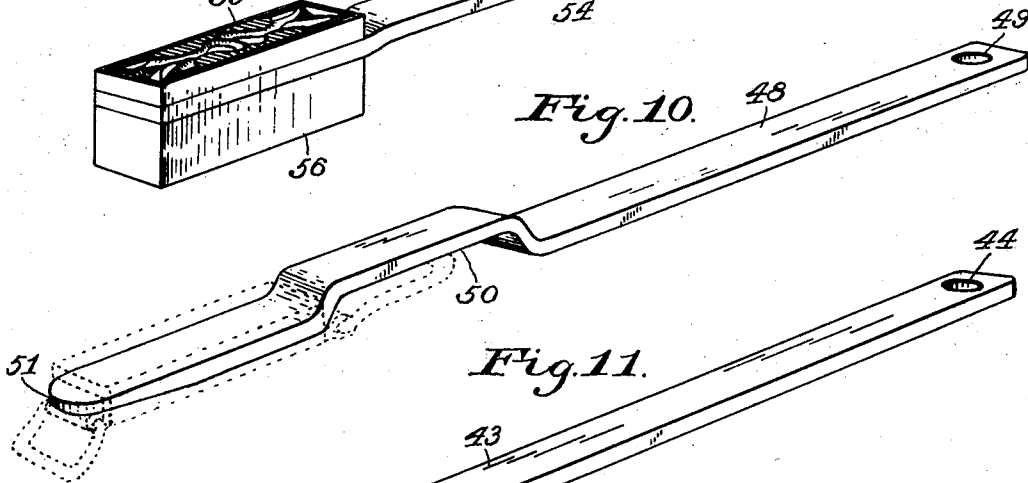


Fig. 11.

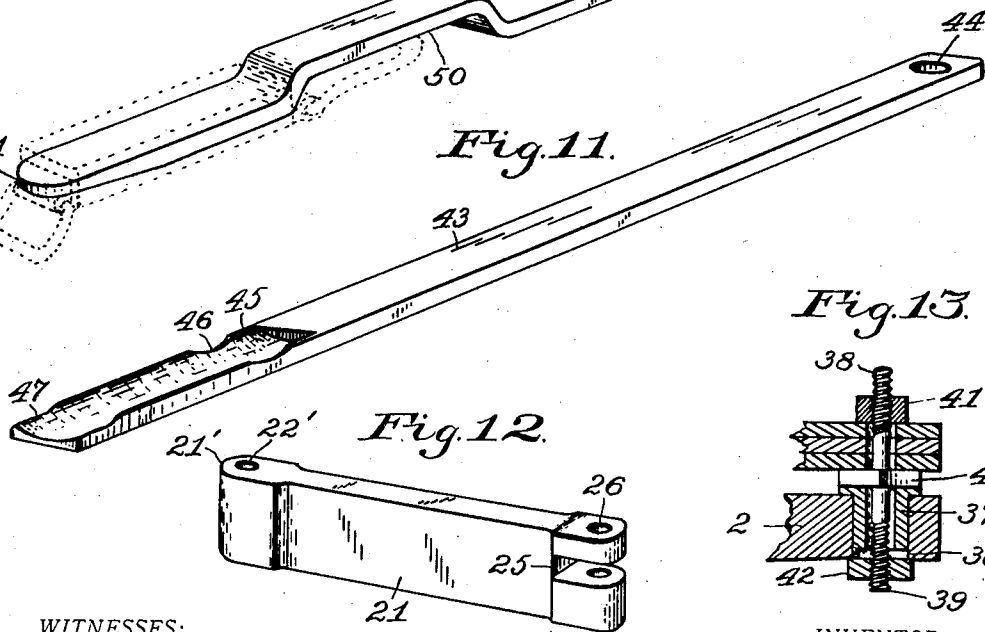


Fig. 12.

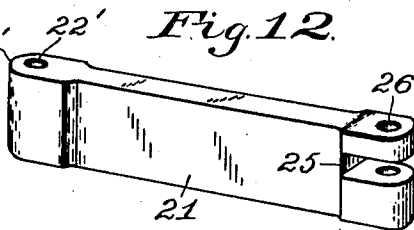
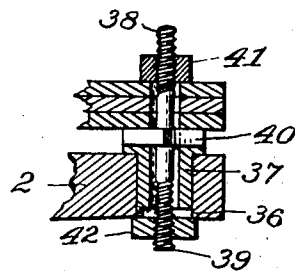


Fig. 13.



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# UNITED STATES PATENT OFFICE.

OSCAR O. HARRIS, OF INDIANAPOLIS, INDIANA.

## HARNESS-LOOP FORMER.

No. 892,722.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed July 12, 1907. Serial No. 383,377.

*To all whom it may concern:*

Be it known that I, OSCAR O. HARRIS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Harness-Loop Formers; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to formers or apparatus whereby leather harness loops may be formed or shaped and embossed or similarly ornamented after the loops have been attached in an unshaped or unfinished state to parts of the harness, the invention having reference particularly to loop formers that are adapted to be made use of in harness presses.

The object of the invention is to provide an improved loop former of the above-mentioned character whereby the cost of production may be greatly reduced through saving of time in operation. And a further object is to provide a harness loop former which will be reliable in producing loops of uniform character and accuracy.

The invention consists in an improved harness loop former comprising a novel base adapted to be secured adjustably to a harness press table, and improved forming tools or devices connected to the base in a novel manner for shaping harness loops in cooperation with the pressure-bar of the press and jaws on the base, the tools being removable from the base so that different sizes of tools may be substituted therefor; and the invention consists further in the novel parts and combinations and arrangements of elements as hereinafter particularly described and referred to in the appended claims.

Referring to the drawings Figure 1 is a front elevation of a harness loop former constructed substantially in accordance with the invention; Fig. 2, a fragmentary top plan of the base; Fig. 3, a top plan view of the complete apparatus; Fig. 4, a vertical sectional view approximately on the line A A in Fig. 3; Fig. 5, a vertical sectional view approximately on the line B B in Fig. 3; Fig. 6, a vertical sectional view approximately on the line C C in Fig. 3; Fig. 7, a fragmentary vertical sectional view approximately on the

line A A in Fig. 3; looking forwardly; Fig. 8, a top plan of one of the forming jaws; Fig. 9, a perspective view of a die and holder therefor inverted; Fig. 10, a perspective view of the loop stick; Fig. 11, a perspective view of the bottom mold to cooperate with the embossing die; Fig. 12, a perspective view of part of the apparatus; and Fig. 13, a fragmentary vertical sectional view on the line B B in Fig. 3.

Similar reference characters in the several figures of the drawings designate like elements or features of construction.

A practical embodiment of the invention comprises a solidly formed base 1 of suitable dimensions, the under side of which is flat and adapted to rest upon the table of a harness press, the top of the base having suitable flat surfaces, and the rear part of the base has an integral arm 2 extending horizontally a suitable distance, the main portion of the base having a suitable slot 3 in which is a clamp bolt 4 and a slot 5 in which is a clamp bolt 6 for adjustably securing the base to the press table. The base is provided at the top of one end thereof with a screw-head 7 in which is mounted an adjusting screw 8 provided with a hand wheel 9, the screw having a guide end 10 in which is a groove 11 to receive the end of a retaining pin 12 for connecting a jaw 13, which is provided, with the screw, the jaw being adapted to rest upon the top of the base 1, and it is provided with a creasing plate 14. The creasing plate of course may be of any suitable pattern or design, being detachable from the jaw as usual, so that other patterns may be used when desired for ornamenting one side of a loop. The screw as will be seen is mounted on one end of the base, preferably at the left hand side of the operator, and in the other end portion of the base it is suitably recessed and provided with a pair of parallel guides 15 and 16 in which is mounted a movable jaw 17 to oppose the adjustable jaw 13, the jaw 17 having also a creasing plate 18 on its working end, and the other end of the jaw is provided with a semi-circular socket bearing 19, the top of the jaw having a socket 20 therein. A link bar 21 is provided for operating the jaw 17 and has a semi-circular bearing end 21' in which end is a pivot hole 22', the bearing end fitting to the socket bearing 19 to form a knuckle joint. A pivot

22 is connected in the hole 22' and has an arm 23 provided with a projection 24 that enters the socket 20 for holding the jaw and the link bar together, and when necessary the link bar may be lifted vertically so as to withdraw the projection 24, so that a jaw of different pattern may be substituted for the jaw 17 when desired. The opposite end of the link bar 21 has a slot 25 therein arranged horizontally and a vertical pivot pin hole 26 to receive a pivot pin 27. The base 1 is provided with a post 28 having a bearing 29 in one side thereof to receive the swinging end of the link bar 21, the opposite side of the post having a horizontal recess 30 and a vertical pivot pin hole 31 in which is a pivot pin 32. An operating lever 33 has an arm 34 extending into the recess 30 and connected therein by the pivot pin 32, the operating lever having also an arm 35 entering the slot 25 and connected to the link bar 21 by means of the pivot pin 27, so that normally the link bar is interposed between the jaw 17 and the post 28, and when an operating lever is moved to a position shown in dotted lines in Fig. 3, the jaw will be retracted or moved towards the post 28, the end of the link bar 21 being drawn away by the arm 35 from the bearing 29 of the post.

In order to attain the desired speed and accuracy in shaping the loops to the desired forms, the pattern tools are connected to the arm 2 of the base, the end portion of the arm having a guide way 36 therein extending crosswise of the arm or so as to be substantially parallel with the line of motion of the movable jaw 17, and in the guideway a slide 37 is mounted through which extends one end of a double ended bolt 38 and 39 having a collar 40 formed integral therewith to serve as a head for two bolts which are provided with nuts 41 and 42, so that the slide 37 may be prevented from accidental withdrawal from the guideway, but permitting its movement longitudinally therein. For shaping the back of the loop or the rear side of the harness part to which the loop may be connected, a bottom mold is provided which has a shank 43 provided with a hole 44 by which it is connected to the bolt end 38 to rest upon the head 40, the mold 45 being integral with the shank and adapted to rest upon the top of the base 1 between the jaws 13 and 17, the mold having recesses 46 and 47 to clear the metallic parts of the harness, such as buckles or rings. A metallic loop stick 48 is placed upon the bottom mold and its shank and has a hole 49 in one end portion receiving the bolt end 38, the loop stick having an offset portion 50 to clear harness rings or buckles, and having also a pointed end 51 adapted to readily enter an unfinished loop, the loop stick being gaged by the bolt end 38 with respect to the bottom mold. A die-holder 52 rests upon the shank of the loop stick and

has a hole 53 receiving the bolt end 38, and the thumb-nut 41 is moved down only sufficiently to keep the three elements mentioned close together without binding them against the head 40. The die-holder has an offset portion 54 to clear the offset portion 50 of the loop stick, and an embossing die 55 is attached to the holder at the under side thereof, and also preferably a metal block 56 is attached to the opposite or upper side of the die-holder to be engaged by the pressure bar of the harness press.

It will be understood that a variety of sizes and shapes of loop sticks and also dies and holders and bottom molds will be provided to suit the various sizes of loops which may be required. It should be understood also that various other connections may be provided in lieu of the link bar 21 and operating lever 33 for holding the jaw 17 in its operative position, and moving it to or from such position.

In practical use the jaw 13 is to be adjusted by means of the screw 8 so that it will set at a proper distance away from the jaw 17. The lever 13 is to be operated to withdraw the jaw 17 and then the harness loop is to be placed on the loop stick 48 as indicated by dotted lines in Fig. 10, the loop stick being free to move as may be necessary away from the jaw 13 to permit of free action of the attendant. Then the operating lever 33 is to be returned so as to move the jaw 17 into its proper position, and the two jaws will forcibly engage the sides of the loop which may be suitably creased or embossed if the jaws be provided with the proper creasing plates. Then the pressure bar of the press will be operated so as to forcibly engage the metal block or die back 56, and thus force the loop against the bottom mold at the same time causing the die 55 to impress its characters in the top or front of the loop. In some cases however, the bottom mold may not be used, and for plain work also the die 55 may be devoid of ornamentation.

Having thus described the invention, what is claimed as new is:—

1. A harness loop former including a base provided with a guide, a pair of jaws mounted on the base, a slide movably supported by the guide and provided with a pivot, and a loop stick having a shank mounted on the pivot.

2. A harness loop former including a base provided with a guide, a pair of jaws mounted on the base, a slide movably supported by the guide and provided with a pivot, and a bottom mold having a shank mounted on the pivot, the mold extending between the jaws and having recesses therein.

3. A harness loop former including a base provided with a guide, a pair of jaws mounted on the base, a slide movably supported by the guide and provided with a pivot, a die-

holder mounted on the pivot and extending between the jaws, and a die mounted on the die-holder.

4. A harness loop former including a base  
5 having a bottom mold and a loop stick and also a die-holder connected thereto, a jaw mounted on the base at one side of the bottom mold and loop stick and die-holder, and  
10 a jaw mounted movably on the base at the opposite side of the bottom mold and loop stick and die-holder.

5. A harness loop former including a base,  
a pair of jaws mounted on the base, a pivot  
15 supported movably on the base, a bottom mold mounted on the pivot and extending between the jaws, a loop stick connected to the bottom mold, a die-holder connected to the loop stick, and a die attached to the die-holder.

20 6. A harness loop former including a base provided with a guide, a pair of jaws mounted on the base, one of the jaws being movable, an operating lever connected with the movable jaw, a bottom mold having a shank connected with the guide and extending between the jaws, and a loop stick connected with the guide and extending over the bottom mold.

7. A harness loop former including a base  
30 provided with a guide, a pair of jaws mounted on the base, one of the jaws being movable, an operating lever connected with the movable jaw, a loop stick connected with the guide and extending between the jaws, a die-holder connected with the guide upon the loop stick, and a die attached to the die-holder.

8. A harness loop former including a base,  
40 a jaw mounted movably on the base, a jaw mounted adjustably on the base opposite to the movable jaw, an operating lever connected with the movable jaw, a slide mounted on the base and movable parallel with the

movable jaw, and a loop stick mounted pivotally on the slide and extending between the  
45 jaws.

9. A harness loop former including a base, a jaw mounted movably on the base, a jaw mounted adjustably on the base opposite to the movable jaw, an operating lever connected with the movable jaw, a slide mounted on the base and provided with a pivot, and forming tools comprising a bottom mold, a loop stick and an embossing die, all connected to the pivot of the slide and thereby  
55 connected together and extending between the jaws.

10. A harness loop former including a base having a guideway therein and guides parallel to the guideway, a slide mounted in the guideway and provided with a pivot, a movable jaw mounted on the guides, an adjustable jaw mounted on the base opposite to the movable jaw, and a loop stick and forming tools to cooperate with the jaws, all connected together and mounted on the pivot.

11. In a harness loop former, the combination of a base having a guideway therein and guides parallel to the guideway, a slide mounted in the guideway and provided with  
70 a pivot, a movable jaw mounted on the guides, an operating lever connected with the movable jaw, an adjustable jaw mounted on the base opposite to the movable jaw, a mold provided with a shank connected to the pivot, a loop stick connected to the pivot, a die-holder connected to the pivot, a die attached to one side of the die-holder, and a backing block attached to the opposite side  
75 of the die-holder.

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

OSCAR O. HARRIS.

Witnesses:

WM. H. PAYNE,  
E. T. SILVIUS.