No. 788,054. PATENTED APR. 25, 1905.

W. C. LAWRENCE.

LOOP BOX.

APPLICATION FILED SEPT. 26, 1904.

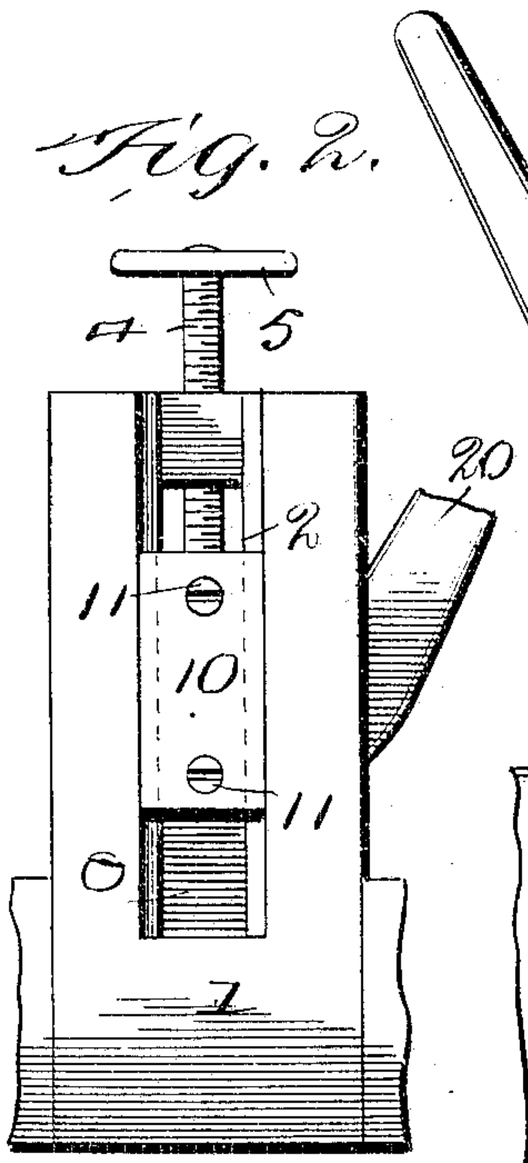

Fig. 2.

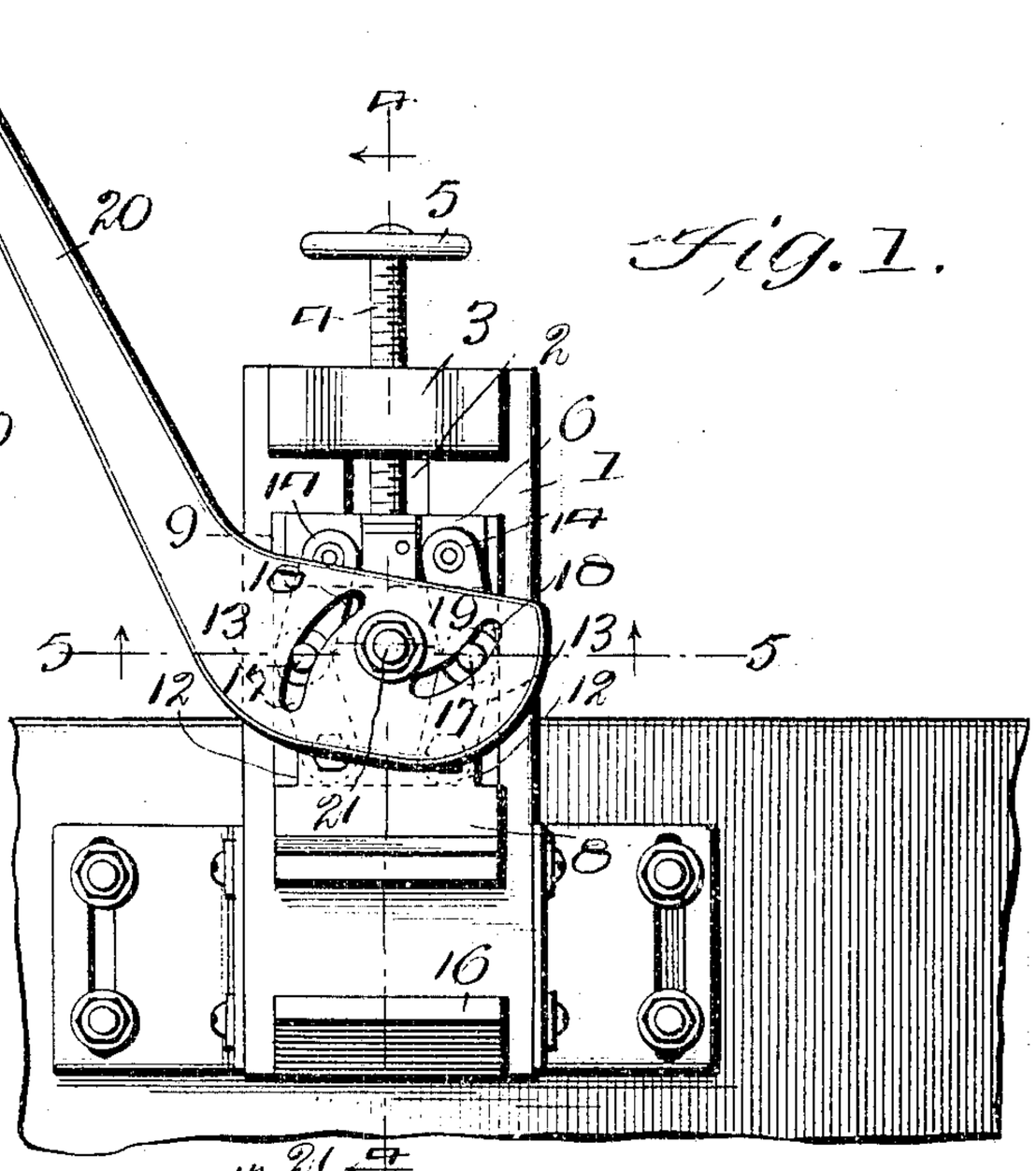

Fig. 1.

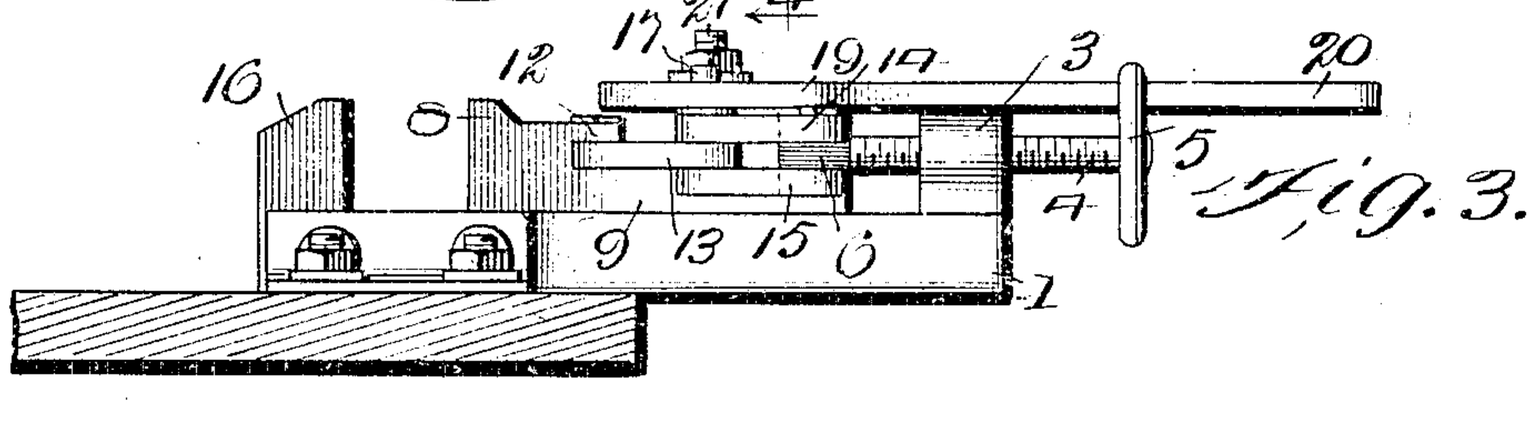

Fig. 3.

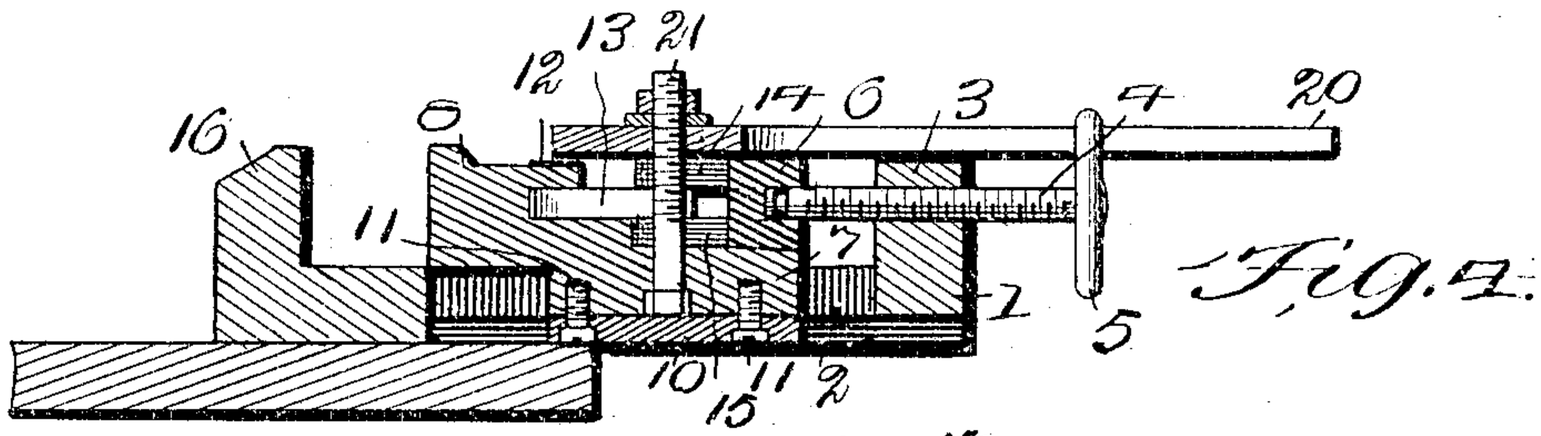

Fig. 4.

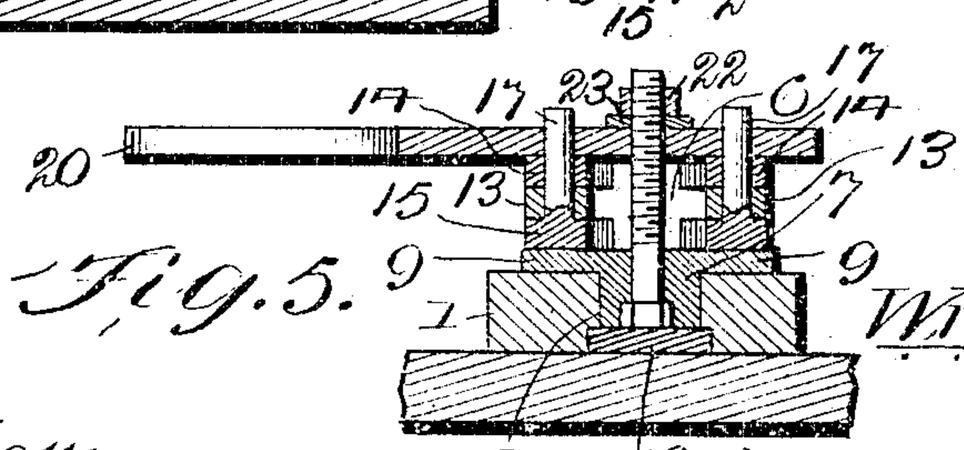

Fig. 5.

Witnesses
Y. C. Barry.
S. W. FitzGerald

Inventor
Wm. C. Lawrence
By W. J. FitzGerald & Co.,
Attorneys

No. 788,054. Patented April 25, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM CHARLES LAWRENCE, OF PORTLAND, OREGON.

LOOP-BOX.

SPECIFICATION forming part of Letters Patent No. 788,054, dated April 25, 1905.

Application filed September 26, 1904. Serial No. 226,013.

To all whom it may concern:

Be it known that I, WILLIAM CHARLES LAWRENCE, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Loop-Boxes; 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 what is commonly designated a "loop-box;" and it consists of certain specified combination and construction of elements, the preferred form of materialization whereof will be clearly set forth in the following specification and illustrated in the accompanying drawings.

The prime object of my invention, among others, is to provide an easily-controlled and powerful form of clamping appliance which may be very rapidly operated, thereby greatly increasing the product.

Other objects and resulting advantages will hereinafter be made clearly apparent.

Referring to the accompanying drawings, Figure 1 is a top plan view of my invention complete ready for use. Fig. 2 is a similar view showing the reverse side and also showing part of the framework broken away. Fig. 3 is an edge view thereof. Fig. 4 is a section of Fig. 1, as taken on the line 4 4 in said view. Fig. 5 is a sectional view taken on line 5 5 of Fig. 1.

It may be stated in this connection that loop-boxes as now in common use and employed for forming what is termed a "boxed" loop comprise a controlling-screw or threaded shaft having an end wheel or crank-arm whereby the shaft may be rotated in either direction to operate the clamping-jaws employed to act upon the dies used in fashioning or shaping the boxed loop commonly used upon various parts of harness. It is my object, therefore, to dispense with the controlling-shaft and employ other more rapidly operated means for controlling the clamping-jaws, and I therefore call attention to the form of lever used for opening and closing the jaws and connected thereto by certain intermediate devices hereinafter specifically pointed out.

In carrying out my invention I therefore provide a suitable framework consisting of the member 1, formed of any suitable material and provided with the longitudinally-disposed slotted opening 2 and with a preferably integral outwardly-projected bracket 3, in which is operatively mounted a threaded shaft 4, having the adjusting end wheel 5, the lower end of said shaft being rotatably seated in a recess provided in the upper side of the cross-head 6. The cross-head 6 is adapted to be controlled by the threaded shaft 4 in the manner hereinafter explained.

Reciprocatingly disposed in the slotted opening 2 is the rib-like extension 7 of the movable jaw 8, said rib having the lateral-extending lips 9, which coöperate with the anchoring-plate 10 to retain said rib in its operative reciprocating position, the said anchoring-plate 10 being held in union with the rib 7 in any preferred way, as by the screws or ribs 11 or the equivalent thereof.

By reference to Fig. 4 it will be observed that a pair of ears 12 are formed upon the upper side of the jaw 8, said ears being for the purpose of pivotally securing the upwardly-directed arm 13, there being one of said arms for each of said ears 12. The arms 13 are pivotally engaged between a pair of arms, as designated by the numerals 14 and 15, while the upper ends of the arms 14 and 15 are pivotally secured to the ends of the cross-head 6, thereby providing a very efficient form of toggle-joint or connection between said cross-head and the jaw 8, said jaw being designed to coöperate in the manner hereinafter specified with the boxed or stationary jaw 16, attached to or integrally formed with the end of the frame or member 1.

By reference to Fig. 5 it will be observed that the arms 13, 14, and 15 are pivotally united by means of the rod or lug 17, it being understood that said arms are arranged in pairs, as before described, the said lug 17 being of sufficient length to project completely through the cam-slots 18 formed in the head 19 of the controlling-lever 20, said lever being pivotally mounted in position upon the outer end of the shaft 21, which latter is anchored in proper position in the rib 7, as more clearly

shown in Figs. 4 and 5, and suitable retaining-nut and washer 22 and 23, respectively, being employed to retain the controlling-lever in position on said shaft 21. It will be observed that since the slots 18 are slightly curved and eccentrically disposed they will afford reliable means for operating the toggle-joint above described, drawing the pivoted connected ends of the arms 13, 14, and 15 toward the lever-carrying shaft 21, and thereby causing a downward movement of the jaw 8 into coöperation with the jaw 16 or any object which may be interposed between said jaws.

Obviously a great deal of force may be very easily applied to the control of the movable jaw 8, enabling the operator to apply great pressure upon any object placed between the jaws with the use of a small amount of force applied to the controlling-lever 20. It will thus be seen that I have provided a thoroughly-reliable, easily-operated, and powerful form of clamping-machine which may be controlled with a single operation of the lever, whereas in other forms of loop-boxes much time is required in setting the jaws by means of a threaded shaft. It may be explained at this point that the boxed loop is produced by placing same between jaws 8 and 16 when the jaws are brought into engagement with the boxed loop thus placed, holding same firmly in place. A carved die is then placed on top of the loop as formed and subjected to a proper degree of pressure by means of a power-press or other suitable device, (not shown in diagram,) the result being that the boxed loop will be most perfectly formed at an expense of minimum amount of time and labor. In order to accommodate various sizes of boxed loops, it is obvious that a proper adjustment of the proximation of the jaws 8 and 16 is attained by means of the threaded shaft 4 and its controlling-wheel 5, thus enabling the jaws to be brought closely in contact with each other or held separated to the desired extent when the controlling-lever 20 is operated.

The various parts of my invention may be cheaply and inexpensively manufactured of any desired size and of any suitable material, and while I have described the preferred combination and construction of parts deemed necessary in materializing my invention I desire to comprehend all proposed substitutes and equivalents thereof.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described loop-box comprising a suitable frame, means to anchor the frame in its operative position; a fixed and movable jaw carried by the frame, means to adjust the relative approximation of said jaws and additional means to operate the movable jaw comprising a controlling-lever, a head for said lever having cam-slots therein, a plurality of arms interposed between the means to adjust the approximation of said jaws and the movable jaw, rods uniting said arms, said rods being of sufficient length to extend through the cam-slots in said head whereby when said lever is operated, said movable jaw may be moved toward or away from the fixed jaw, substantially as specified and for the purpose set forth.

2. In a loop-box, the combination with a frame having a fixed jaw at one end thereof and a projected bracket at its opposite end, of an extension 7 reciprocatingly mounted in a slotted opening in said body portion, a movable jaw carried by one end of said extension, a screw-threaded shaft operatively mounted in said projected bracket, a cross-head secured to the inner end of said shaft, a controlling-lever pivotally mounted upon said extension 7, a head formed integral with said lever and having cam-slots therein, arms 13 pivotally secured to said movable jaw, arms 14 and 15 arranged in pairs, the outer ends of which are pivotally secured to the cross-head and the arms 13 between the inner ends thereof, shafts pivotally securing said arms together, said shafts being of sufficient length to extend through the cam-slots in said head whereby, when said lever is operated, the movable jaw will be moved toward or away from the fixed jaw, substantially as specified and for the purpose set forth.

3. In a loop-box, the combination with a body portion having a fixed jaw at one end and a bracket at the opposite end, of an adjustable shaft, a cross-head secured at the inner end of said adjustable shaft, an extension reciprocatingly secured in a slot in said body portion, a controlling-lever having a head pivotally secured to said extension, and means interposed between said movable jaw and the cross-head adapted to coöperate with said lever whereby, when the lever is operated, the movable jaw will be moved inwardly or outwardly, substantially as specified.

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

WILLIAM CHARLES LAWRENCE.

Witnesses:
O. L. PRICE,
ROSALIA M. HOFMANN.