No. 676,428. Patented June 18, 1901.

J. B. DONNELLY.

LEATHER WORKING MACHINE.

(Application filed May 26, 1900.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 3.

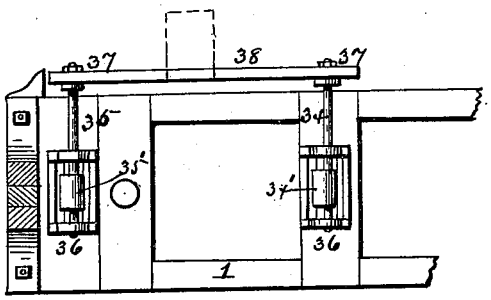
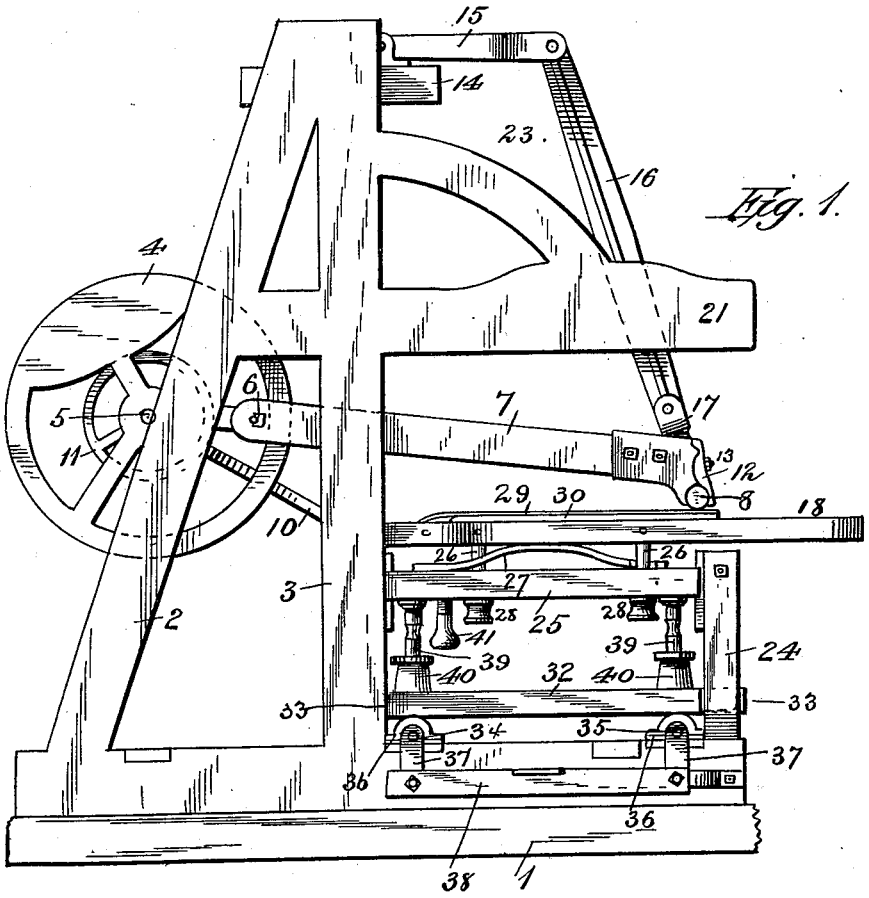


Fig. 1.



WITNESSES:
Franck L. Durand.
George Hilton.

INVENTOR.
Jno B. Donnelly.
BY
Wm. Fitzgerald & Co.
ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 676,428. Patented June 18, 1901.

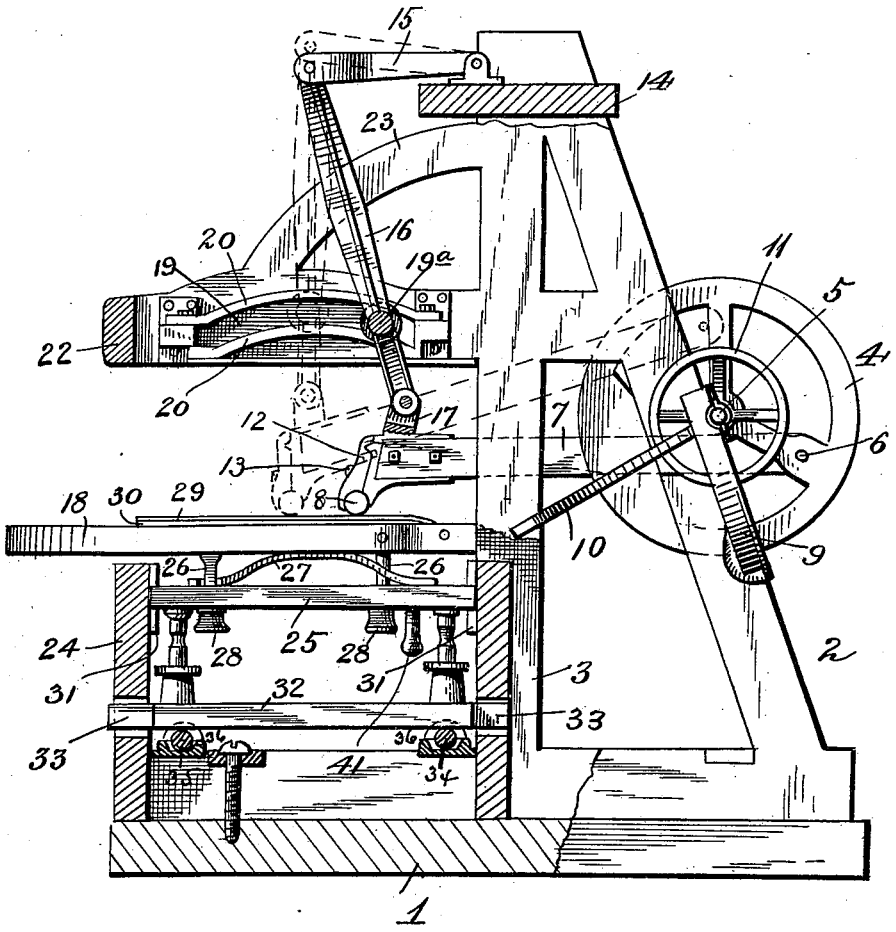
J. B. DONNELLY.

LEATHER WORKING MACHINE.

(Application filed May 26, 1900.)

(No Model.) 3 Sheets—Sheet 2.

Fig. 2.



WITNESSES:
Frank L. Ourand.
George Hilton.

INVENTOR:
Jno. B. Donnelly.
BY
W. P. Fitzgerald & Co.
ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 676,428. Patented June 18, 1901.

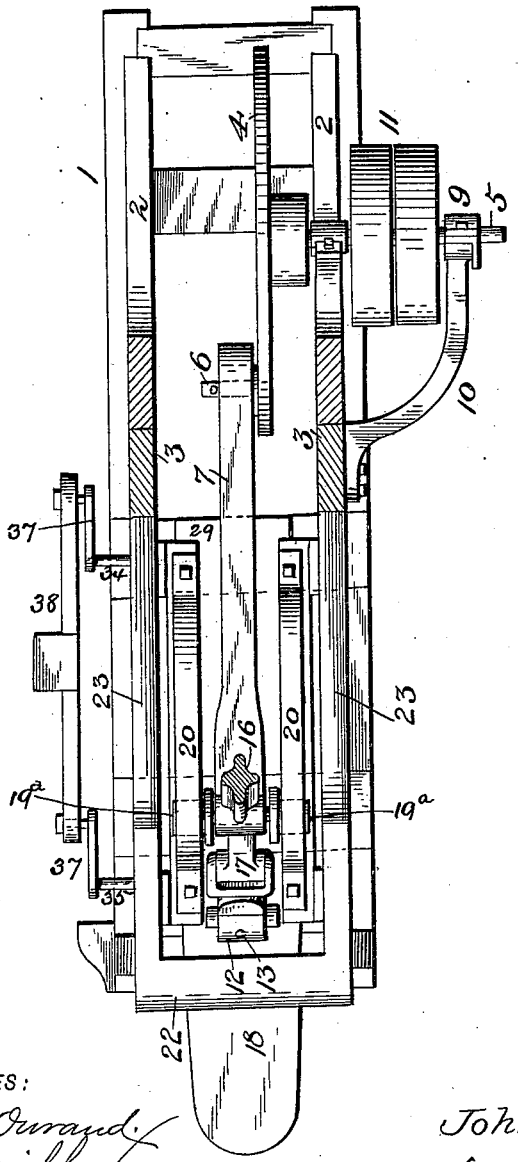
J. B. DONNELLY.

LEATHER WORKING MACHINE.

(Application filed May 26, 1900.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 4.



WITNESSES:

Frank L. Ourand.

A. J. Miller.

INVENTOR

John B. Donnelly.

BY

W. F. Fitzgerald & Co.,

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN B. DONNELLY, OF WILMINGTON, DELAWARE.

LEATHER-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 676,428, dated June 18, 1901.

Application filed May 26, 1900. Serial No. 18,073. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. DONNELLY, (whose address is 925 Lancaster avenue, Wilmington, Delaware,) a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in Leather-Working Machines; 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 leather-working machinery, and particularly to a machine designed for the especial purpose of imparting a desirable finish to leather.

One object of my invention, as will hereinafter be clearly set forth, is to enable the leather to be so treated that the surface thereof will be provided with a most perfect finish, inasmuch as the said finish may be of any desired character or color, since the material added to the surface of the leather will be thoroughly incorporated therewith by means of the peculiar manipulation to which it is subjected by my improved machine. All of the different varieties of glazing therefore may be adopted, the office performed by my machine being to thoroughly incorporate with the fiber of the leather such pigment or other form of compound as will produce a leather of the desired variety and color, as will be readily understood by leather-workers or those skilled in the art.

It is well known that the tool employed upon the leather should be moved in one direction only to insure that the surface fibers may all be disposed in one direction. It therefore becomes desirable that the reciprocating tool employed for this purpose shall automatically rise above the surface of the leather upon the back stroke, and with this object in view I have provided certain mechanism designed to reliably control the tool employed to act upon the surface of the leather and to insure that said tool will not contact with the leather except when it moves in a given direction.

A further object of my invention, therefore, is to provide an adjustable support for the leather by means of which the operator can control said support, and thus hold the leather placed thereon into coöperative relationship with the reciprocating finishing-tool.

In the accompanying drawings, Figure 1 is a side elevation of my invention complete. Fig. 2 is a vertical section of Fig. 1, illustrating the guide employed to hold the reciprocating tool in a horizontal plane during the performance of its office. Fig 3 is a detail view illustrating the means employed to elevate the table or support, and Fig. 4 is a plan view of the machine, the upper portions of the framework and operating parts being cut away.

The elements of my invention and their cooperating accessories for convenience will be designated by numerals, of which 1 indicates the base portion of my improved working machine, upon one end of which are erected the inclined standards 2 and the vertical standards 3, there being two each of said standards, designed to supplement each other, and between which I locate the governor-wheel 4, which is secured to one end of the stub-shaft 5, which is journaled upon one of the inclined standards 2 and the bracket 9 in suitable boxes secured thereto. To the inner side of the wheel 4 is secured a crank-arm 7, which extends inwardly and carries the finishing-tool 8, formed of glass, as is usual, or any other preferred material. The bracket 9 is curved outwardly and upwardly from the standard 2 and forms a support for the outer end of the shaft 5. This bracket is braced in position by the arm or support 10, and the upper end of the bracket extends sufficiently far from the standard 2 to allow the pulley-wheels 11 to be placed upon the shaft 5 between the bracket and the standard 2. There may be two of the pulleys 11, one of them being an idler and the other rigidly secured to the shaft. The shaft 5 being thus supported upon the standard 2 and the bracket 9, only a short stub-shaft is necessary. The tool 8, carried by the inner end of the crank-arm, is made readily removable by detaching the removable jaw 12, which is held in place by the locking-bolt 13.

Between the standards 2 3 I secure between the upper ends the cross-section or support 14, upon which I pivotally mount the inner end of the supporting-lever 15, the outer end of which is pivotally connected to the guid-

ing-support 16. The lower end of the guiding-support 16 is pivotally connected to the crank-arm 7 by means of the ear or bracket 17, carried by the latter, and in order to insure that the finishing-tool 8 will be moved parallel with the surface of the support 18 I provide the guiding-arc 19, formed by the guiding-ribs 20, which latter are secured to the inner sides of the frame extension 21, the free ends whereof are rigidly connected, as by the end section 22 and the brace 23 or in any other suitable manner.

The outer end of the base-section 1 is provided with the standard 24, which, in connection with the standard 3, provides a support for the table or supporting-section 18. The table proper or base-section 18 is connected to the guiding-sections or base-plate 25 by means of the adjustable standards 26, there being two of said standards near the outer end of the plate 25. The standards 26 are made vertically adjustable by being made screw-threaded at their lower ends and have the nuts 28 applied thereto. Between the pair of standards 26, provided at the outer end of the plate 25, is designed to play the outer end of the spring 27, the inner end of said spring being slotted to receive the single standard 26, designed to secure the table and plate together. The standards 26 pass loosely through suitable apertures provided in the plate 25 and being threaded are designed to be received by the thumb-nuts 28, and it is obvious that by tightening or loosening said nuts the desired degree of tension may be imparted to the spring 27, and thus insure that a suitable bed or support will be provided for the treatment of the leather 29 as it is placed upon the raised support 30.

Each end of the plate 25 is provided with a suitable recess designed to receive the cleats 31, by means of which the said plate is held reliably in an adjusted position, though permitting the said plate and the table-section 18 to be easily removed by elevating the plate out of engagement with said cleats. An auxiliary base-section 32 is also provided, said auxiliary section being movably secured in position, as by disposing the ends 33 thereof loosely in suitable recesses provided in a contiguous part of the standards 3 and 24. The auxiliary sections 34′ 35′ are mounted upon the shafts 34 and 35, the latter being mounted in suitable bearings 36, provided in the base-section 1. The bearings 36 are secured upon suitable cross-pieces, as shown in Fig. 3, and sections 34′ 35′ are made cam-shaped, so that when the shafts 34 and 35 are revolved the cams are made to bear against the base-section 32 for the purpose of raising and lowering it, as may be desired. The bearings 36 may either be shaped as shown in Figs. 2 and 3 or in any other way that may be preferred and form cradles which limit the endwise movement of the two shafts. When the plate 32 is in its lowest position, the links 37 and plate 38 are substantially parallel, as shown in Fig. 4, and when it is necessary to raise the plate or bed 38 the treadle bar or plate 38 is depressed from the position shown in Fig. 4 to that shown in Fig. 1, thus rotating the cams 34′ 35′ and raising the bed 32. The outer ends of the shafts 34 35 are provided with the controlling-arm or crank sections 37, which are connected together by the tread-plate 38, by means of which the said shafts are controlled by the foot of the operator, and since the auxiliary base-section 32 rests upon the cams 34′ and 35′ it is obvious that said base may be elevated or depressed by properly manipulating the tread-plate 38.

The plate 25 is designed to rest upon the adjustable screw-threaded standards 39, which are seated in the sockets 40, and it is clear that by a proper rotation of said standards, the height thereof may be readily regulated and the corresponding position of the base 25 and the table carried thereby fully controlled. An additional tension device 41 may also be provided to more effectively control the spring 27, if deemed desirable.

The operator has but to move the tread-plate 38 endwise to cause the shafts 34 and 35 through their cranks 37 to partially revolve, and thereby operate the cam-sections on said shafts and cause said cams to raise or lower the base-section 32, as desired. By raising or lowering the base-section 32 the plate 35 is raised through the mediation of the standards 39, and the support 18 is in turn elevated through the standards 26.

In Fig. 2 the machine is in such a position as to indicate that the back stroke of the tool 8 has been nearly completed, and it will be seen that said tool moves closely in contact with the surface of the leather 29. While the tool is making the outer stroke the arc guide 19 insures that the support 16 will be elevated sufficiently to lift the crank-arm 7 and the tool 8 clear above the lever, and therefore wholly out of contact with it. The arc guide is designed, therefore, for the express purpose of holding the tool to its work while it is making the inward stroke. During the outward stroke of the tool the entire weight of the free end of the crank-arm and the support 16 is carried by the arc guide 19, as by reference to Fig. 2 it will be observed that suitable lugs 19^a are formed upon each side of the support 16, adapted to fit in said guides, thereby insuring that the support-section 16 will be held to the performance of its office and that it will be moved by said guide in such a way as to compensate for the changing relation of said support and the lug or ear 17. By reference to Fig. 2 it will be seen that on completing the inward movement of the tool 8 the bracket or lug 17 and the support 16 will stand so as to form an obtuse angle, while in the same view it will be observed by dotted lines that said parts are in direct line with each other and occupy a true vertical plane. It is therefore my purpose to compensate for the varying relation between said

support 16 and lug 17 during the operation of my machine that I have provided the arc guide, as above set forth, the result being that the tool 8 while on an inward stroke will be held closely in contact with the leather, while upon the outward stroke of said tool the arc guide will elevate the free end of the crank-arm and the tool carried thereby will be clearly above the leather and the support therefor.

It will be observed that the several parts of my invention may be very cheaply manufactured of any suitable material and that a single operator, even a boy or a girl, can fully control the machine and direct it in the performance of its office. It is usually a matter of great labor to control a leather-working machine as now constructed, inasmuch as the adjustability of the table or support is more or less complicated and cumbrous.

While it is thought that the operation of my improved leather-dressing machine will be fully apparent from the foregoing specification, it may be stated that the operation thereof is as follows:

The leather to be treated is placed upon the table or support and the outer end thereof secured in any preferred way, when the machine may be started after being connected with any suitable source of power. The tool 8 will be reciprocated by means of the crank-arm and the governor-wheel, and said tool will be drawn over the leather, thus insuring that any dressing applied thereto will be thoroughly worked into its surface and that a glossy and desirable finish will be produced, since said tool will be in contact with the leather only at the time it is moved inward, the entire tool being held above the leather during the outward stroke. The leather may be quickly changed, while any desired degree of force may be brought to bear upon it by properly operating the tread-piece, as with the foot. Believing the construction and use of my invention has been made fully apparent, further description is therefore unnecessary.

While I have described the preferred construction which may be adopted in producing the several parts of my invention and the elements deemed necessary to place the same in operation, it will be understood that I desire to comprehend all such substantial equivalents and substitutes as may be considered to fall fairly within the scope of my invention.

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

1. In a leather-working machine, a suitable framework, a supporting-lever pivoted to the upper end of the framework, a support connected to the outer end of the lever, a reciprocating crank-arm, mechanism for operating the crank-arm, and a leather-working tool connected to the outer end of the crank-arm, combined with a support upon which the leather is placed, the base-plate 25, suitable adjusting means which pass through the plate 25, for vertically adjusting the support, the base-section 32, suitable adjusting means placed thereon for vertically adjusting the plate 25, and means for vertically adjusting the section 32, substantially as shown.

2. In a leather-working machine, the two cam-shafts 34, 35, each having a cam-section and provided with crank-arms upon their outer ends, a tread-plate for connecting the crank-arms; the plate 25, and section 32 resting on said cams, combined with means for vertically adjusting the plate 25, and which means are placed upon section 32, the support for the leather, means connected to the plate 25 for vertically adjusting the support, a spring placed between the support and the plate 25, and the reciprocating crank-arm, operating upon the leather placed upon the support, substantially as described.

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

JOHN B. DONNELLY.

Witnesses:
JAMES P. FALAN,
JOHN P. MULLEN.