Sheet 1 - 2 Sheets.

J. Greenleaf,

Dressing Leather,

No. 15,807. Patented Sep. 30, 1856.

Fig: 5.

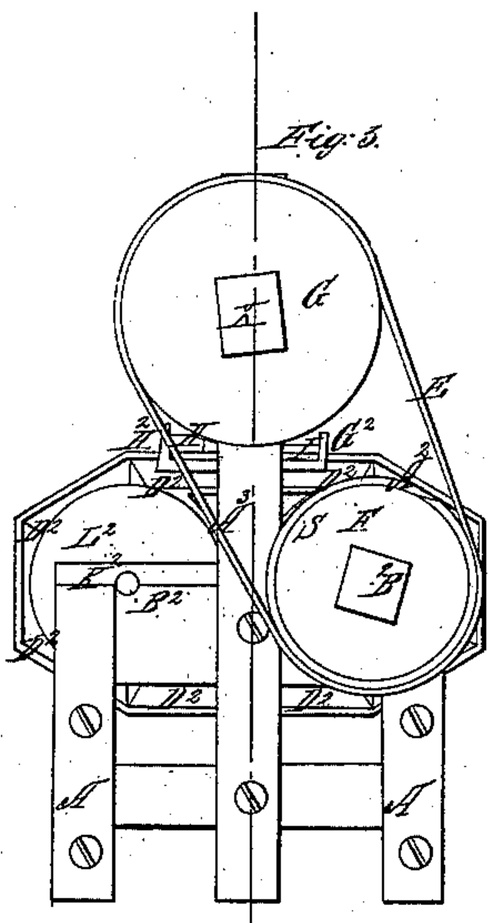


Fig: 2.

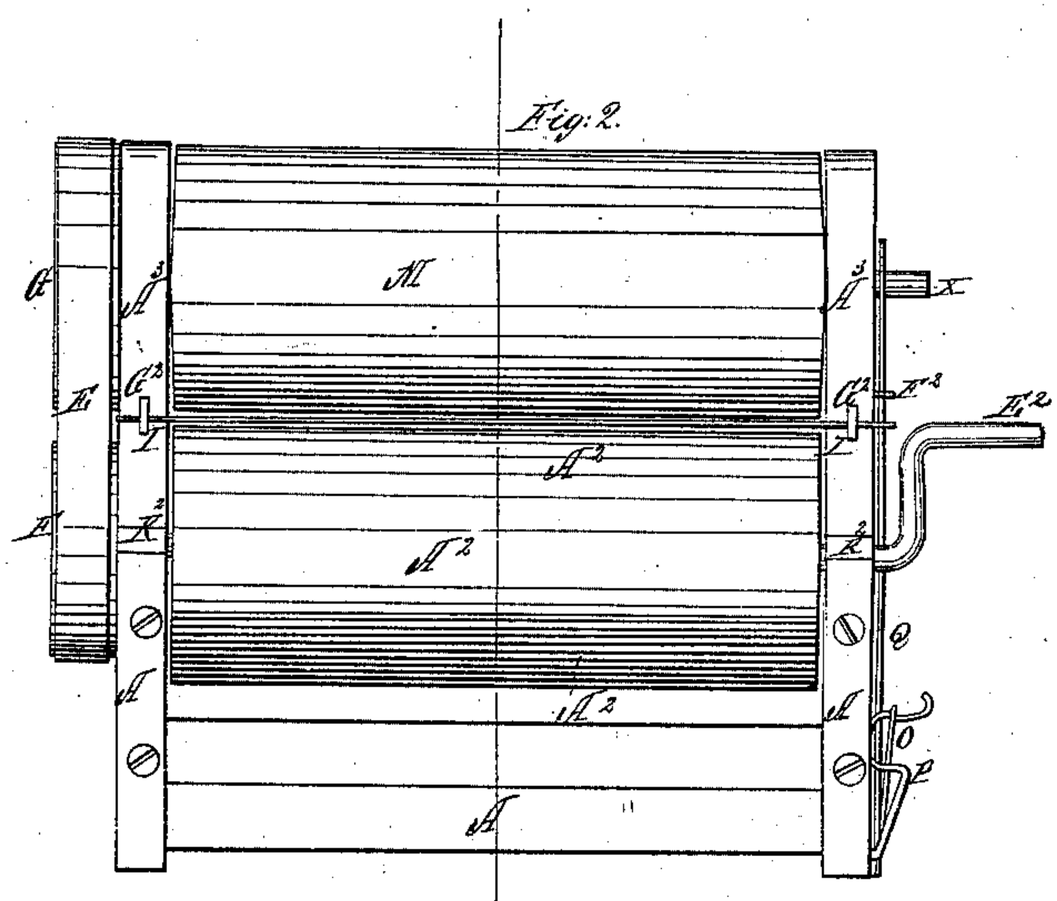
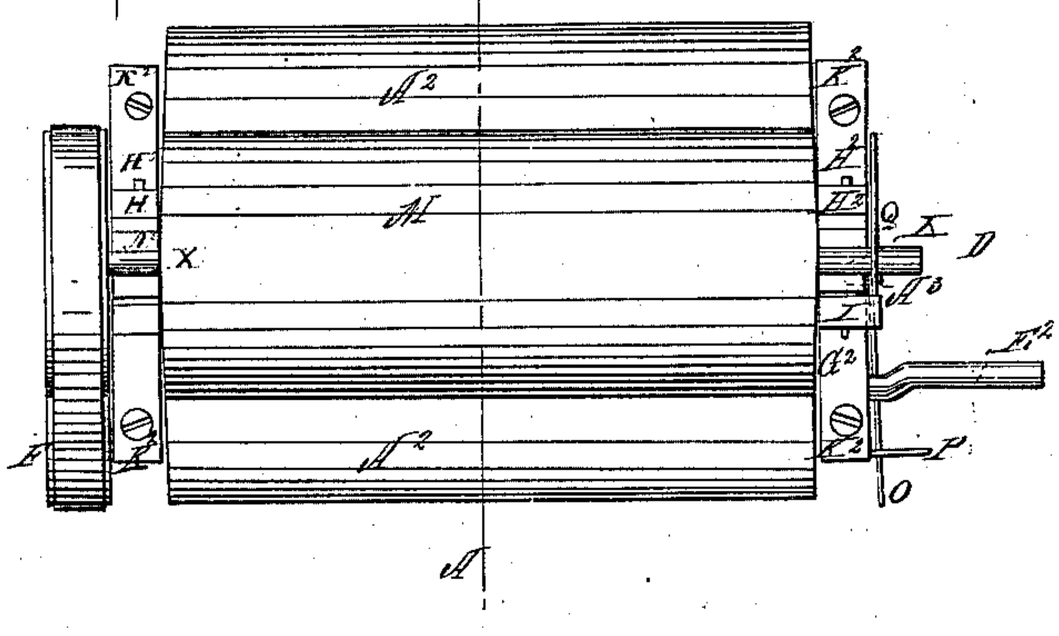


Fig: 1.



Sheet 2 - 2 Sheets.

J. Greenleaf,

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Fig. 5.

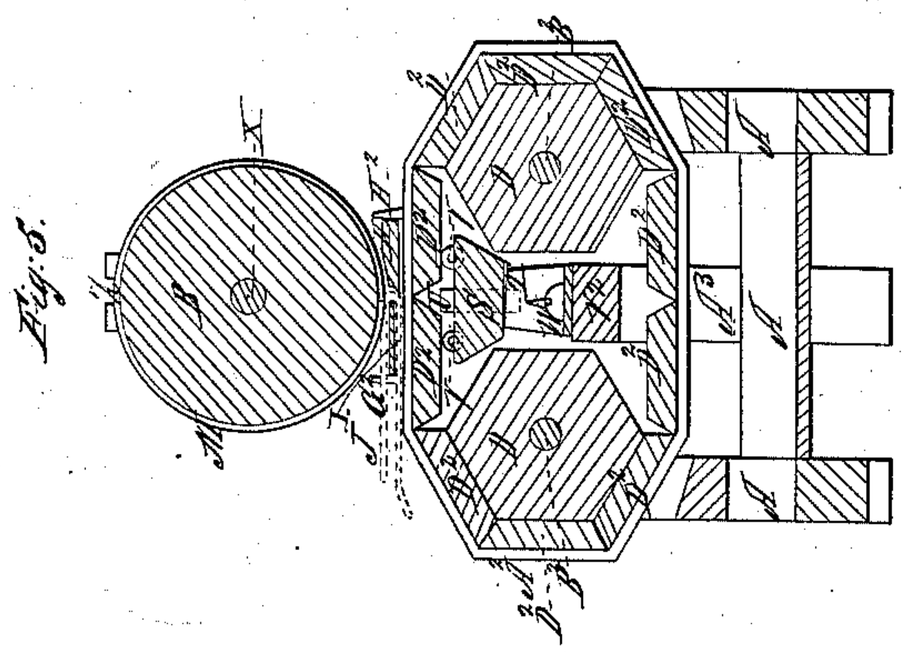


Fig. 4.

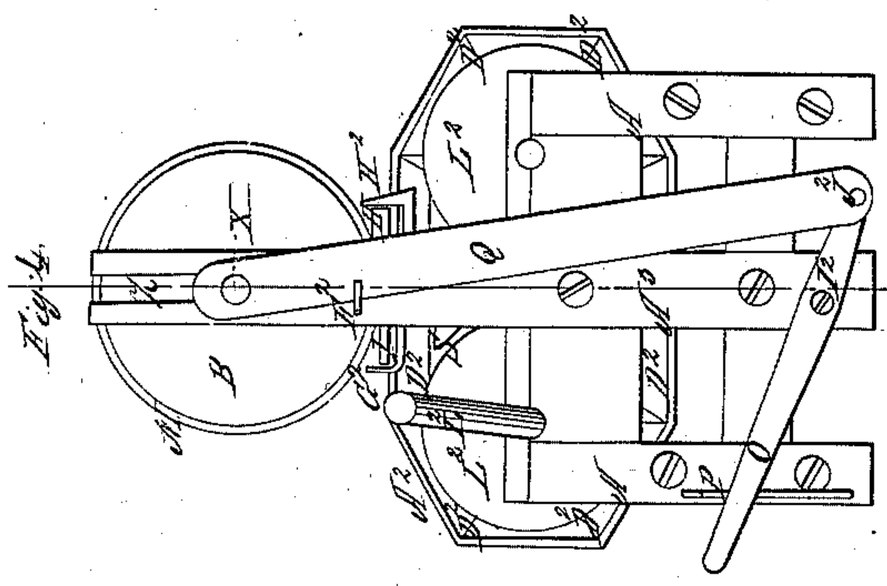
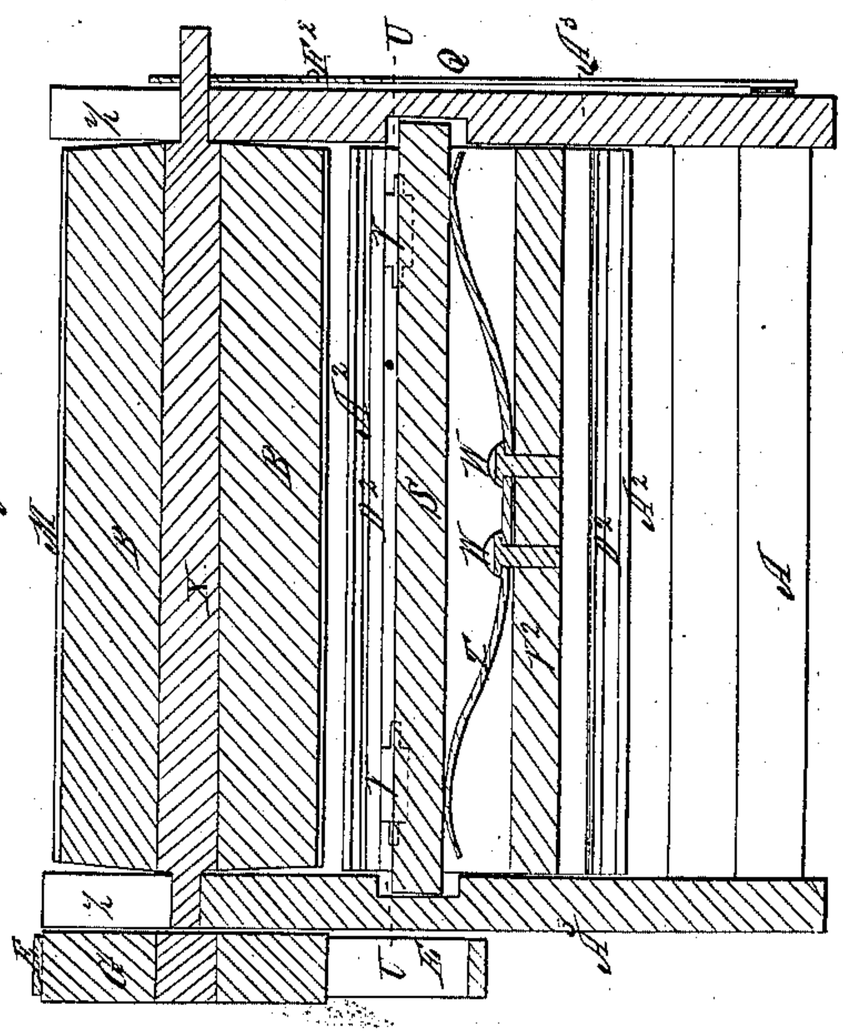


Fig. 6.



UNITED STATES PATENT OFFICE.

JNO. GREENLEAF, OF LOWELL, MASSACHUSETTS.

MACHINE FOR SOFTENING LEATHER.

Specification of Letters Patent No. 15,807, dated September 30, 1856.

To all whom it may concern:

Be it known that I, JOHN GREENLEAF, of Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a novel and useful Machine for Softening and Graining Leather; and I hereby declare that the following specification, in connection with the accompanying drawings and letters of reference thereon, constitute a lucid, clear, and exact description of the construction and operation of the same.

In referring to said drawings, Figure 1 denotes a plan or top view; Fig. 2, a front side elevation of the same; Fig. 3, one end elevation of it; Fig. 4, the opposite end view; Fig. 5, a transverse and vertical section on line A, B, Fig. 1. Fig. 6 denotes a longitudinal and vertical section on line C, D, Fig. 1.

A uniform and efficient softening of leather is necessary after it has been tanned, to fit it for use for various purposes, such as enameling and for patent leather, and the graining of leather is equally necessary, which consists of breaking the grain or hair side of it, to render it pliable and give it the proper finish to be enameled, or for many other uses, which has been heretofore done by hand.

The object of my invention is to do the same thing by my machine operated by power to soften or grain the leather with great speed and in the most efficient manner.

Therefore the nature of my invention consists in softening leather by placing the hair side of it between a flexible surfaced revolving cylinder and a flexible surfaced moving carriage, with the flesh side of the leather passing around the edge of a metallic blade placed nearly between the cylinder and carriage, and then turning the cylinder and moving the carriage with the leather thereon by any convenient motor until it is sufficiently softened, and for graining the leather, the process of which is exactly the same as for softening, only that the flesh side of the leather is placed next the cylinder and carriage and the hair side next to the blade, as will be seen in my machine hereafter described.

To enable persons skilled in the art to which my invention appertains to construct and carry out the same, I will describe it as follows: I construct a frame of wood, seen at A in the several figures of the drawings. To the top of this frame is suspended two hexagons, seen at D, Fig. 5, by their shafts B^2, which are kept down by the cap K^2, Figs. 1, 2, 3, and 4. To them is fitted several beveled pieces of wood, seen at D^2, Figs. 3, 4, 5 and 6, the outside surface of these pieces being covered with vulcanized rubber or any other desired flexible substance, seen at A^2, Figs. 1, 2, 3, 4, 5, and 6, which hold these pieces D^2 together, which with rubber A^2 constitute the carriage or apron, which is guided on the hexagons by the end pieces L^2, Figs. 3 and 4. The object of forming the hexagons in that shape and the pieces D^2, to fit them is for moving the carriage or apron by turning one of the hexagons D around which the aprons A^2 revolve by turning the crank E^2, Figs. 1 and 2.

The apron or carriage A^2, Figs. 1, 2, 3, 4, 5 and 6, is flexibly sustained at its center by rolls V, Figs. 5 and 6, which are suspended so as to revolve in the bar S, Figs. 3, 4, 5 and 6, and this bar which moves up and down in the grooves U, formed in the uprights A^3, Figs. 5 and 6, is pressed upward by the spring T, Figs. 5 and 6. This spring rests on and is fastened to the girt V^2 by the screws W, Figs. 5 and 6. By this arrangement the carriage and leather upon it is pressed up against the cylinder B with sufficient force to soften the leather, when it is moved around the edge of the blade I.

To each end of the frame A I fasten an upright A^3, Figs. 1, 2, 3, 4, 5 and 6, the upper ends of them being slotted, as seen at Z, Figs. 1, 4, 5 and 6, in which is placed the cylinder by its shaft X, the cylinder being covered by vulcanized rubber or any elastic substance, seen at M, Figs. 1, 2, 4, 5, and 6. This cylinder is provided with a pulley, seen at G, Figs. 1, 2, 3, 4 and 6, by which it is rotated by band E leading from the pulley F, on the hexagon D, Fig. 5.

Back of the cylinder B near its lower surface and just above the carriage or apron A^2 is placed a guide, seen at H, connected to the uprights A^3 by the hooks H^2, Figs. 3, 4 and 5. The front edge of this guide is made concave, as seen Fig. 5, so as to conduct the edge of the leather J up over the edge of the metal blade I, so that it may be conducted back by the cylinder B with its surface M, after the leather is passed in under the blade I, and softened or grained, as the case may be, in manner seen at J, Fig. 5. The blade I is held in the desired position, or to the uprights A^3, by the hooks G^2,

Figs. 1, 2, 3 and 5, and can be easily removed to place the side of leather in the machine for softening or graining by raising one end of the blade above one of the hooks G^2, and then drawing it from the other hook G^2, and may be as conveniently replaced with the side of leather, seen at J, Fig. 5, thereon, as will be readily understood.

I construct a rod, as seen at Q, Figs. 1, 2, and 3, through the top end of which passes the shaft X, of the cylinder B. The rod Q is prevented from slipping off the shaft X by the hook F^2, Fig. 4. The lower end of the rod Q is connected to the lever O by the joint J^2. This lever has its turning point or fulcrum at I^2. A spring P, Figs. 1, 2 and 4, fastened to the frame A holds this lever and cylinder B in position by means of the rod Q, while the leather is being softened or grained, as the case may be, and by pressing in the spring P, and moving down the out end of the lever O, the cylinder B is easily raised to allow the leather J, Fig. 5, and blade I to be conveniently removed from the machine after the leather has been softened or grained, or both, as may be desired.

I claim—

The combination of the blade I, with the cylinder B and M, and apron carriage A^2 and D^2 for softening and graining leather, when arranged and operated essentially in the manner and for the purposes fully set forth.

JOHN GREENLEAF.

Witnesses:

CHAS. E. BARNES,

E. W. SCOTT.