S. Boyden,

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Splitting Leather,

Patented Jan. 7, 1809.

Fig. 1.

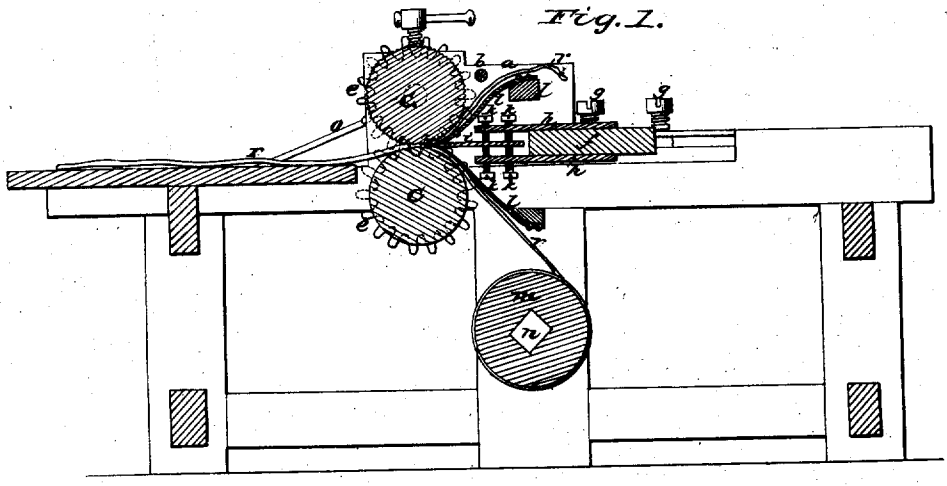
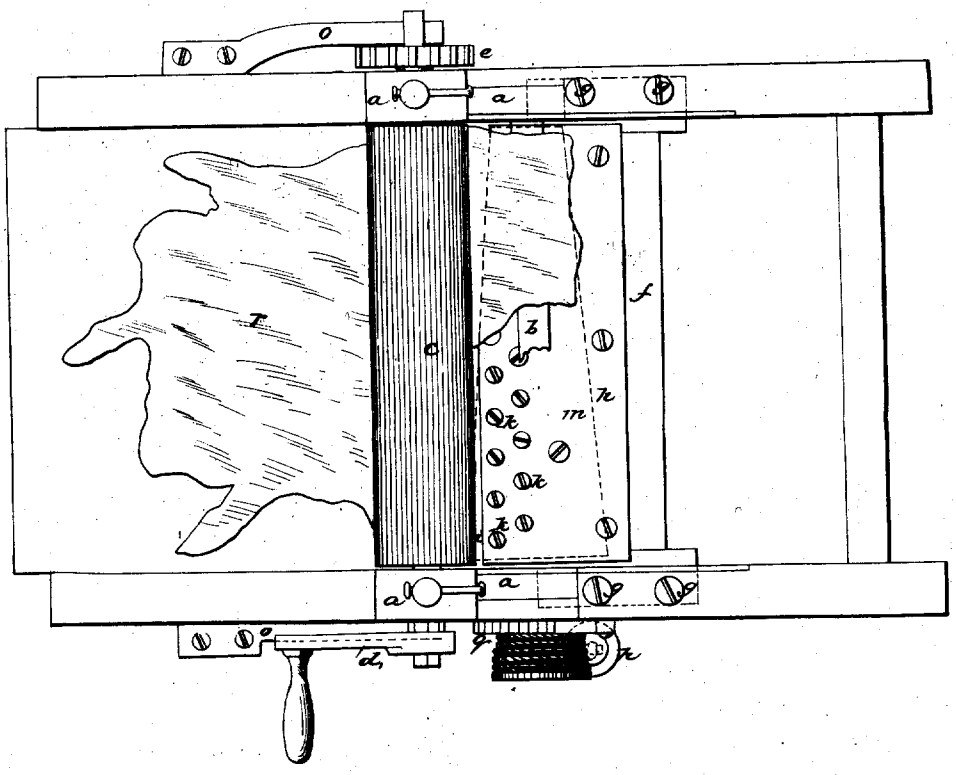


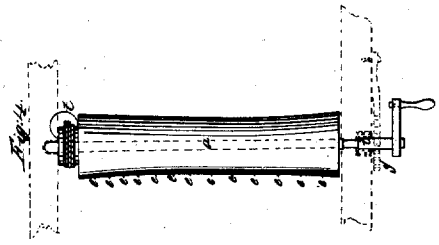
Fig. 2.

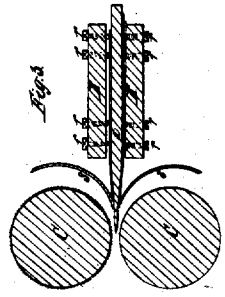


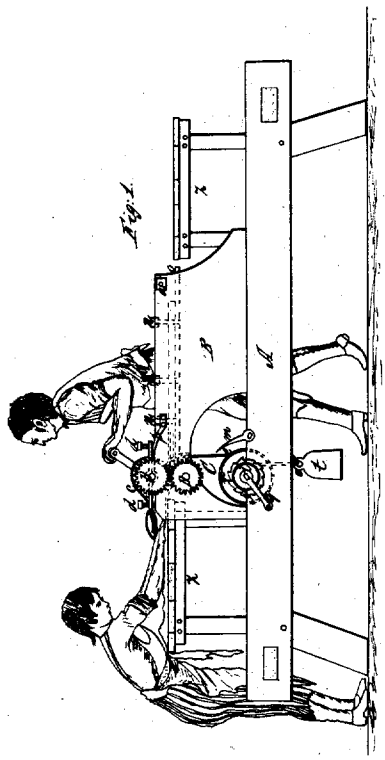
S. BOYDEN.

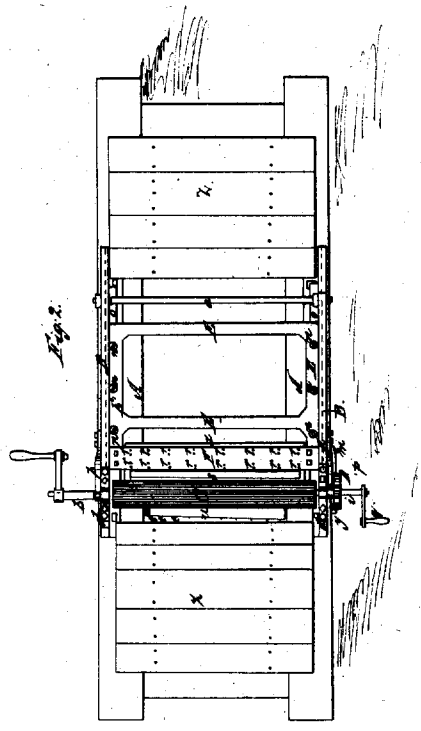
Splitting Leather.

Patented Jan'y 7, 1809.









N. PETERS. Photo-Lithographer. Washington, D. C.

Jan 7, 1809 Ex 1st 9800X 339

Seth Boyden

Letters Patent Dated Jan. 7. 1809.

The Schedule refers to the Letters Patent and making part of the same containing a description in the words of the said Seth Boyden himself of his machine for splitting Hides & shaving Leather

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The wooden frame of the machine consists of two parallel pieces of timber framed together at the ends & supported by four legs. From this frame rises the two pieces of the splitting machinery, made of iron or other metal & connected together by one or more metallic bars extending from side to side on the top. Within these sides in front are two iron or other sufficiently hard metallic cylinders with their pivots ends resting in the sides & placed perpendicularly one each. On the end of the uppermost of these rollers a cylinder is a spur gear or wheel projecting beyond the side for the purpose of receiving the crank by which the roller is turned. This uppermost roller is engraved or cut straight lines horizontally or lengthwise on its surface. This roller may be placed at any required distance from the lower one by raising the boxes in which its pivots turn by means of screw pins. On the opposite end of these rollers to that on which the crank is placed are two wheels the teeth of which work on each other so that when the upper roller is turned communicates motion to the lower roller. Behind these metal cylinders or rollers there is an horizontal frame for the purpose of holding the knife in the proper position for cutting the leather or skin. This frame is made of metal & of such substance or thickness as not to vibrate. It slides horizontally between the upright sides being guided by cleats on the side plates above mentioned. so that the edge of the knife within it can be brought to the leather to cut or removed back from it for the purpose of sharpening. This frame is confined within the sides in its proper place by screws the heads of which are above the sides. This frame has two horizontal plates extending from side to side so far apart as to admit of the knife lying horizontally between them & of any required thickness. The knife being introduced & its edge advanced as far beyond the front of the frame as is thought necessary is then secured in its place by screws passing thro' the upper & lower plates of the frame pressing with their ends

980X

rubs against the upper & lower surface of the knife plate. There are four rods of these screws extending from side to side near the edges of the upper & lower plate. There are two brass or other metallic gauges which extend from the upper & lower plates towards the edge of the knife and are nearly parallel to the corresponding upper & lower metallic cylinders so that as the skin passes between the cylinders & is cut by the knife one portion rides on the frame & the other part descends below it the lower cylinder & is attached by spindle & wooden roller underneath, which draws it around it as fast as the operation of cutting is performed. The wooden roller is larger at one end than the other & is turned by a square axis passing thro' a corresponding perforation in its centre, the ends or pivots of this axis are round & rest upon the wooden frame. On one end of this axis is a notch at right & left & a crank. The axis of the upper metallic cylinder are borne up & supported by means of springs attached to the outside of the side plates so that when the screws above are eased there is room to see how to set or place the edge of the knife. These springs lift when the upper cylinder is depressed by the screws. There is a disc or weight on the opposite end of the wooden roller to steady it for the purpose of gradually turning the roller & winding the lower half of the skin upon it as the operation of splitting is performed. The whole of this machine may be made of cast iron except the knife. The screws pins cranks the iron axis which passes thro' the wooden roller & the springs. The method of using this machine is as follows. The knife being placed in the frame behind the rollers it is brought so far forward that the cutting edge just touches the rollers between which it passes. Then gauge the knife by the screw pins in the frame to a proper distance from the roller so as to cut the under or grain side of the skin next desired. Confine the frame in its place by the screws in the side pieces & bring down the upper roller by the adjusting screws over its pivots to the thickness of the leather. After the machine is thus set in order & the leather laid on the table resting on the wooden frame in front of the rollers a man turns the crank on the axis of the upper roller whilst a boy directs the head part of the skin between the rollers. The skin is thus drawn forward between the rollers, pressed against the edge of the knife, confined over gauges

gauges on the offside side of the rollers which cuts it before it escapes from their action & whilst they confine and shave or plate it. The languages which come from the upper & lower plates of the frame divide the parts of the skin one upward & the other downward to the wooden roller from which the sharp with the weight has been wound previously by the crank & to which it is fastened by sticking it upon the pin in the roller by a wooden mallet. The pin being raised from the notched wheel on the axis of this roller the weight & sharp begins to act and draw forward the lower part of the skin as the cutting is performed winding it upon the roller. as the seam of the upper metallic roller is turned by the man, a boy at the same time inwardly loosens or lower the ends of the roller by means of the screws, as the thickness of the leather varies. The large hides the skin of the legs which is thin and never wants splitting passes through in the small part at each end of the rollers in a folded and wrinkled manner. When the knife wants whetting the screws which confine the frame are raised & the frame drawn out on the table which rests on the wooden frame of machine. It is then shaved again & adjusted to its proper place. When the knife is to be ground the two upper rows of screws pins are slackened and the knife taken out for that purpose. As sides of leather are sometimes longer on the belly edge than on the back & as the grain side must go down next to the smooth roller & head first. when all the right hand sides are shaved the iron axis is drawn out of the wooden roller & the ends of the roller are changed, when the skins of the leg go thro' between the small parts of the rollers. The metal roller being perfectly cylindrical in that part opposite the knife & the wooden roller of greater diameter at one end than the other the skin will not compress equally to both. When the boy in the stands at the table to feed the rollers observes that one edge of the wooden roller draws harder than the other he will ease the screws on the opposite end which holds down the upper roller. This will slack the motion of the leather thro' that end of the rollers whilst the other end grasps & it draws equally. When sheep & calf skins are to be shaved this wooden roller must be taken out and one put in that is a little smaller in the middle than at the ends. The force applied to this machine may be that of man, wind, water, steam as convenience shall dictate. Some

under this machine as highly useful to Farmers & Curriers for splitting Skins from the Lime and Lair. That is to shave off one skin what the Currier usually scrapes off to make the Leather of a proper thickness for the purpose to which it is to be applied. Such Sheep Skins as are designed for the upper Leathers of Shoes & Boots & for Chaise & other Carriages & the underside thin Leather or Serfice may be operated upon from the Lime so that it may be tanned sooner with less Lack & more thoroughly. Calf Skins should be intended for Binding & other purposes that require may their Leather may be shaved after Tanning. When the hides are shaved in this manner the price will be of considerable value whereas that scraped off in the usual way is of no use. A man or a boy of eight or ten years of age will shave 5 or 10 in this manner to one in the usual way whilst the value of the first can afford to work from 4/ to 5/ of the deepest shave

Seth Boyden

Witnesses { Lemuel Jones
Milton ——
Tyler ——

Lt. Hyll.