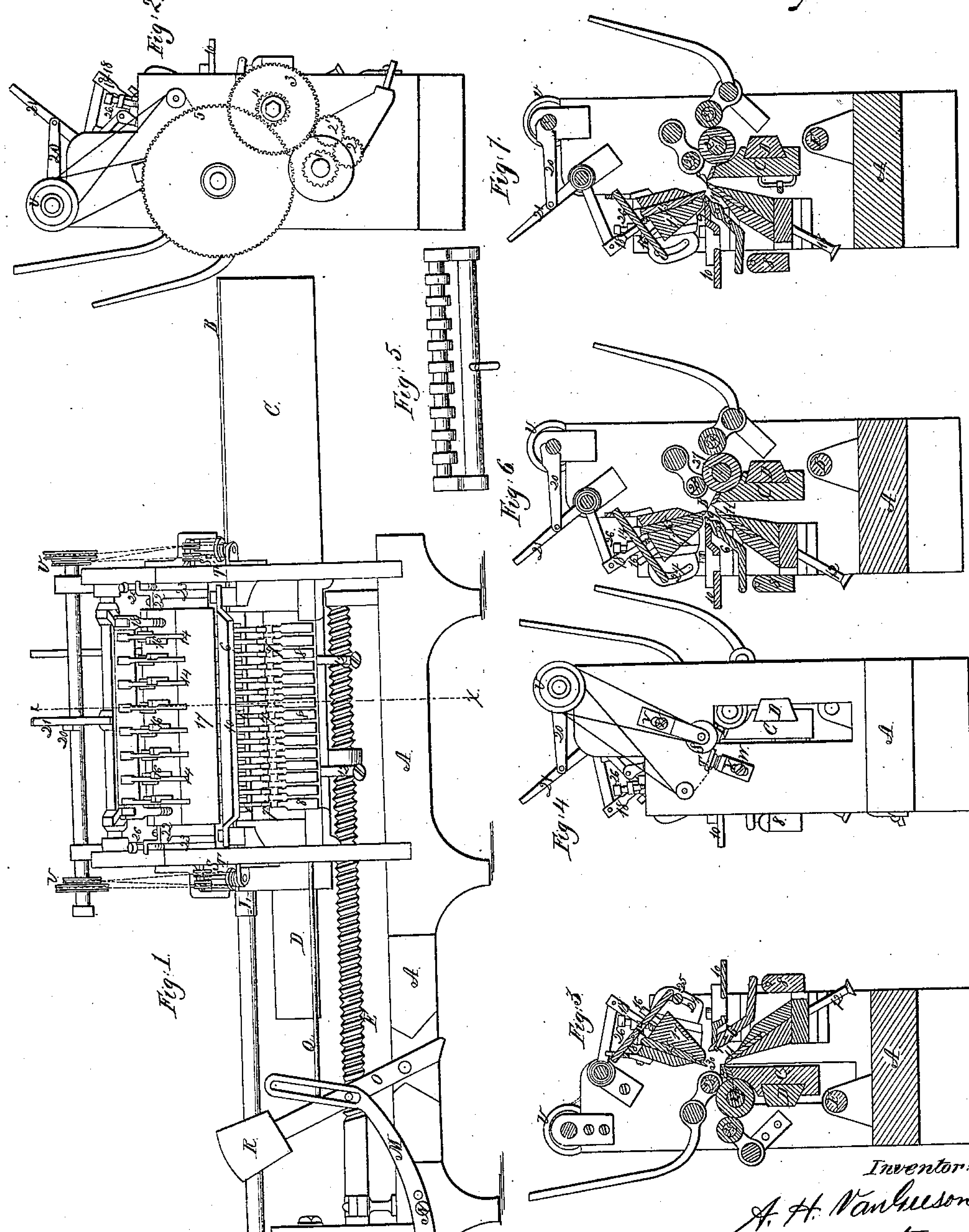
A. H. Van Gieson,

Splitting Leather,

No. 54,043. Patented Apr. 17, 1866



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UNITED STATES PATENT OFFICE.

A. H. VAN GIESON, OF NEWARK, NEW JERSEY.

IMPROVED LEATHER-SPLITTING MACHINE.

Specification forming part of Letters Patent No. **54,043**, dated April 17, 1866.

To all whom it may concern:

Be it known that I, A. H. VAN GIESON, of Newark, in the county of Essex and State of New Jersey, have invented an Improved Leather-Splitting Machine, of which the following is a specification.

The object of my invention is to cut from a side or other piece of leather a thin sheet or thin sheets of even thickness, or to cut off from the main body of the leather the inequalities which exist on the flesh side, leaving the remainder of equal thickness. To do this I provide a long straight knife having an extended lateral reciprocating motion, and kept sharp by devices hereinafter described, which, together with certain rollers and gages, hereinafter specified, accomplishes the object above set forth. These devices are fully described in the following specification, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my machine. Fig. 2 is an elevation of the end which is toward the left in Fig. 1. Fig. 3 is a vertical section, showing the parts to the right of the line *x x*, Fig. 1. Fig. 4 is an elevation of the end which is toward the right in Fig. 1. Fig. 5 is a detail view of a sectional roller used to apply additional drawing force on portions of the skin. Fig. 6 is a vertical section, showing the parts to the left of the line *x x*, Fig. 1, the gages being arranged in the proper position for cutting off the inequalities from the flesh side of the skin. Fig. 7 is a vertical section, showing the parts to the left of the line *x x*, Fig. 1, the gages being arranged in the proper position for cutting off sheets of even thickness.

A is the bed of the machine, on which the other parts rest or to which they are attached. B is the knife, with a backing or carriage, C. This carriage is very heavy and strong, giving to the knife great rigidity and firmness, and thus preventing its yielding or vibrating, which would, if it occurred, injure if not destroy the leather which was being cut by the machine. The carriage slides on the way or slide D and is driven by the screw E, which obtains its motion from power applied to the pulley H by means of a cross and a direct belt, each of which acts on it alternately.

F and G are loose pulleys on the same shaft with H, and they carry either the cross or the direct belt while the other is driving the screw E.

Motion is imparted to the rollers which draw the leather through in order to its being cut by the train of gearing 1, 2, 3, 4, and 5, or 1, 2′, 3, 4, and 5, in the following manner: The carrier or hanger I is pivoted at a point about equally distant from the centers of 2 and 2′, so that by raising the lever J the pinion 2′ meshes into the pinion 1 and also into the wheel 3, while at the same time the pinion 2 is released from the pinion 1, thus reversing the motion; but at the instant that this change is effected the direct belt, which has been acting on the pulley H, is slipped over so as to work on one of the loose pulleys, and the cross-belt, acting on the pulley H, drives the screw E in the reverse direction, while by the reversing of the train of gearing the roller L which draws the leather through continues to act in the same direction. By means of these devices the leather is instantly stopped when the knife changes its motion, which prevents the tearing or marking of the leather at the edge of the knife.

The lever J is operated to change the motion produced by the train of gearing by the lever M, which has its fulcrum at N and has slots at each end. In one end the lever J works and in the other the weighted bar or lever O, which is pushed just past the perpendicular by dogs on the carriage C, operating against the inner or right-hand end of the rod Q, after which the weight R completes the motion and prevents any stopping of the machinery.

The knife B is ground and kept sharp by the wheels S and T, which are faced with any suitable grinding substance, as crocus-cloth, for example. Motion is imparted to them by a belt which acts on the pulley U.

The motion of the knife should be sufficiently extended to allow the grinding-wheels on each side to act beyond that point on the knife where the wheels on the other side left it. The grinding-wheels are made adjustable as to their proximity to the knife, and also as to the angle at which they cut or grind, by means of the slots V V and screws W W.

6 6 are weighted levers, the outer end, 7, of each lever being held down by a weight, 8.

This causes the leather to be held up against the gage 30 by the ends 9 of the levers 6 6, and at the same time the said levers 6 6 are capable of yielding, so as to allow the thicker portions of the leather to pass through, and thus prevents the injuring of it by jamming.

The table 10 is for the purpose of receiving the leather previous to its being operated upon. This table, and with it the weighted levers 6 6, can be set nearer to or farther from the knife by means of set-screws.

11 is a rigid straight gage, over which the leather is drawn in passing to the knife. It is made adjustable by the screws 12 12. These gages are used for the purpose of flattening out the grain surface of the leather preparatory to the grain or a portion of it being cut off in a thin and perfect sheet by the knife. When it is desired to cut off from the leather the inequalities of the flesh side, leaving a sheet of even thickness, on which the grain may be left, I provide another gage, made in sections, and capable of being made wider or narrower, at the will of the operator, by removing the sections upward, so that they shall not be in contact with the leather. This is done by unhooking and raising the levers 14 14, which are attached to the upper ends of the sections 15 15. The lower ends of these sections form, when hooked down, the gage under which the leather passes. The object of reducing the width of this gage is to reduce the liability of the leather to become torn or cut. The outer sections of the gage are successively raised until the whole gage is a little less in width than the leather immediately under it, and as the wider portions of the leather pass under the width of the gage should be increased by successively forcing down and hooking the sections nearest those already hooked down.

16 16 are spring-hooks, under which the levers 14 14 are fastened when down.

17 is the carrier or bed in which the sections 15 slide. It is hung by means of the arms 18 18 and slides in the ways 23. It may be raised when desired by unhooking the stop 20 from its bearing and forcing over the lever 21, the slides 22 sliding in the ways 23. This gage is adjusted as to its position in relation to the knife by the slots 24 and screws 25, and also by the screws 26, which fix the distance to which the gage descends when the lever 21 is drawn outward. I use the weighted levers 6 6 in connection with this gage in the same manner as with the gage 11.

27 is a roller having a surface of rubber or other suitable material, and is used with the rollers 28 and 29 to draw the leather through the machine. It has rotary motion imparted to it by the train of gearing 1, 2, 3, 4, and 5. The roller 28 holds the leather in close contact with the roller 27 and prevents slipping, except when too heavy a strain would come upon portions of the leather, when the portions which are under the greatest tension slip upon the roller 27 and the loose or baggy portions are drawn through. By means of the sectional roller 29, the sections of which may be applied by pressure to such baggy portions, an additional drawing force may be applied to them, if required. This roller 29 is made in sections in such a manner that any portion of the leather which is passing over and being drawn through the machine by the roller 27 may be pressed upon by a portion of said roller 29, and thus, the drawing force being increased, the slack portions of the leather will be drawn through. The rollers 27 and 28 are connected by matched gearing of such relative size that their surfaces shall travel with equal speed and always move together.

By the above-described devices I am enabled to cut off from a side or other piece of leather a greater number of sheets, or, in other words, to divide the leather into a greater number of sheets than has heretofore been done. Such sheets may be cut from either the grain or the flesh side, as may be desired.

Having thus fully described my invention and the manner of operating it, I claim—

1. The combination of the wheels S and T with the knife B, the whole being constructed and operated substantially as herein set forth.

2. The combination of the elastic roller 27 and roller 28, geared together as described, with the sectional roller 29, constructed and operating substantially as herein set forth.

3. The combination of the elastic roller 27 and roller 28, constructed as described, with the knife B, as herein set forth.

4. The combination of the knife B, constructed and operating as described, with the devices for stopping the leather at the instant the motion of the knife changes, substantially as herein set forth.

5. The combination of the knife B and rollers 27 and 28, or their equivalents, with the sectional gage formed by the lower ends of the sections 15 15, substantially as and for the purpose set forth.

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Witnesses:

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