

No. 753,558.

PATENTED MAR. 1, 1904.

A. C. A. DUPUY.
CANE CUTTING AND STRIPPING MACHINE.

APPLICATION FILED JULY 3, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

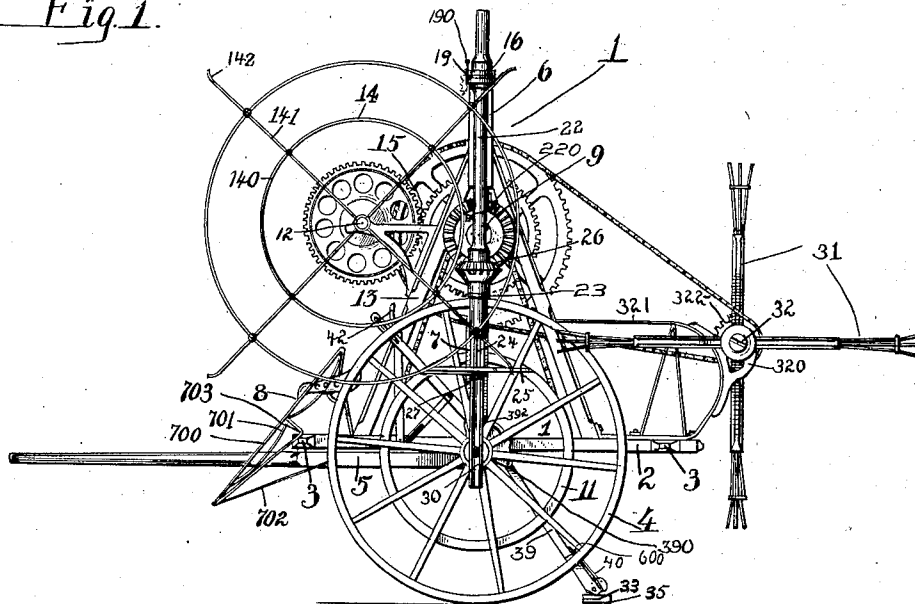
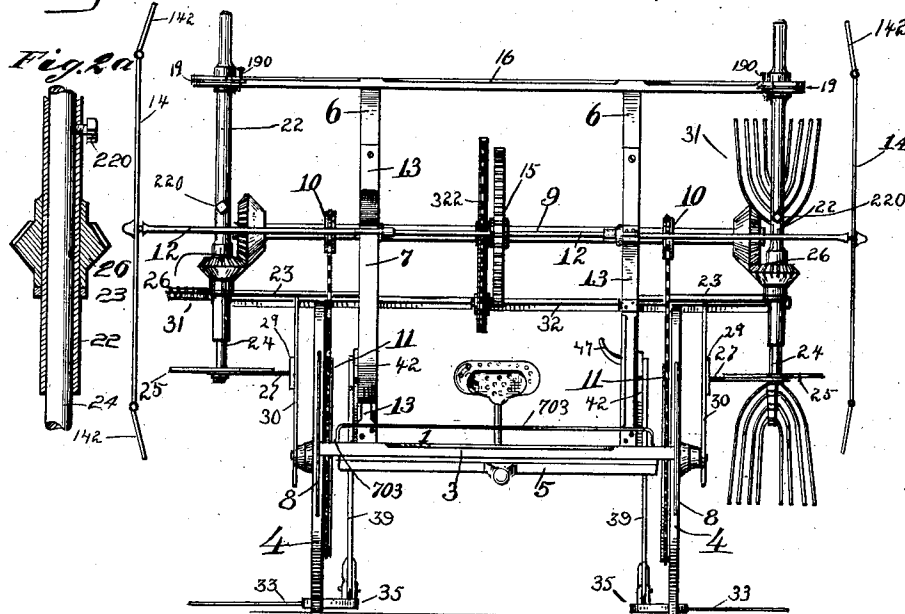


Fig. 2.



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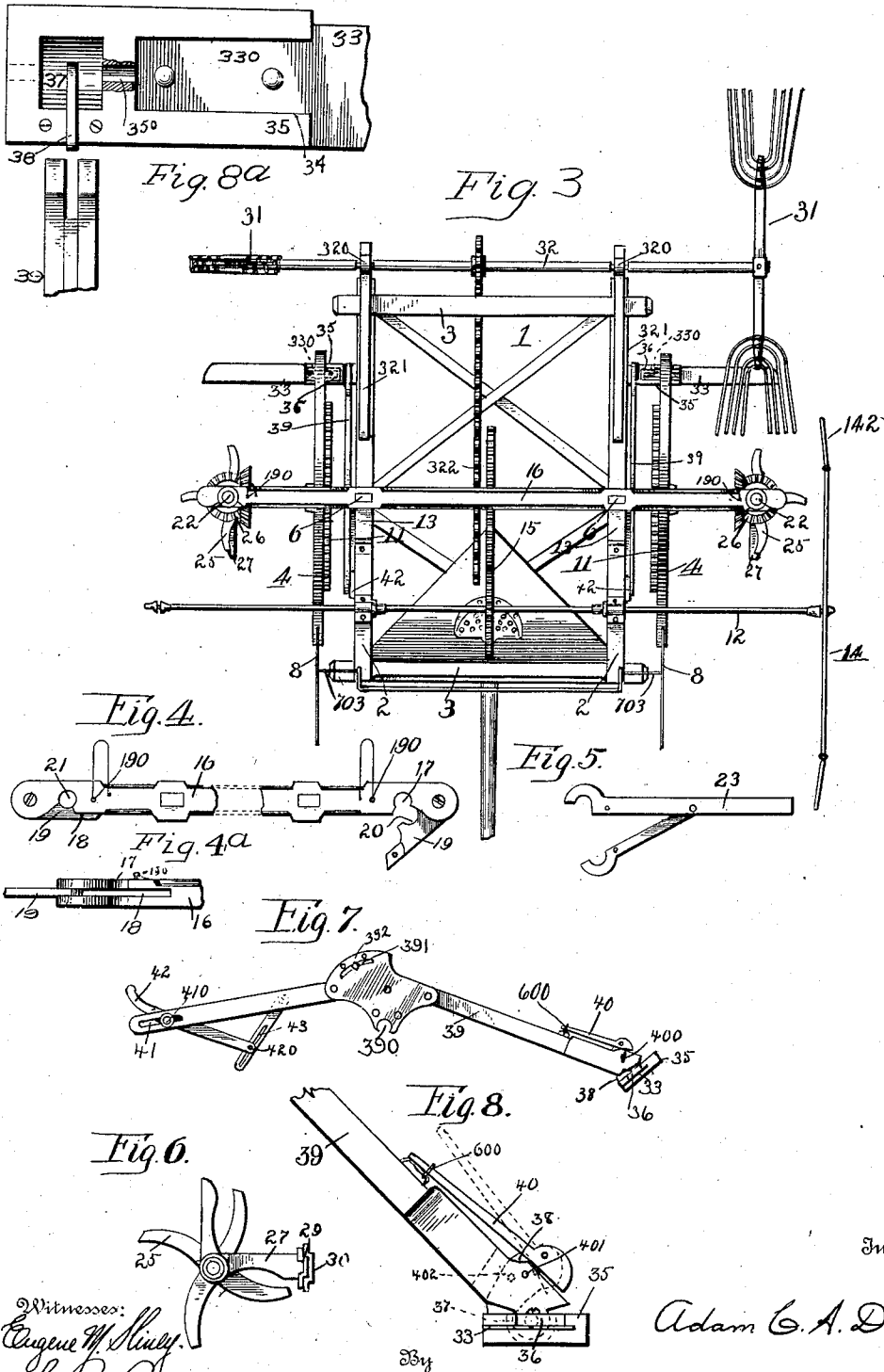
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ADAM C. A. DUPUY, OF NEW ORLEANS, LOUISIANA.

CANE CUTTING AND STRIPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 753,558, dated March 1, 1904.

Application filed July 3, 1902. Serial No. 114,312. (No model.)

To all whom it may concern:

Be it known that I, ADAM C. A. DUPUY, a citizen of the United States, and a resident of New Orleans, Orleans parish, State of Louisiana, have invented certain new and useful Improvements in Cane Cutting and Harvesting Machines; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with claims particularly specifying the novelty.

This invention relates to harvesters, and more particularly to that class known as "cane cutters and strippers;" and my object is to produce a machine simple and strong in construction which will top, strip, and cut the standing cane in one operation.

To this end my invention consists in certain novel constructions and arrangements of parts, as will be brought out in the following specification and illustrated in the annexed drawings, wherein—

Figure 1 is a side elevation of the machine. Fig. 2 is a front elevation with parts broken away. Fig. 2^a is a vertical section of part of the hollow shaft. Fig. 3 is a plan view with one of the propping-reels removed. Fig. 4 is a top view of the upper yoke-bar. Fig. 4^a is a side elevation of one end of the upper yoke-bar. Fig. 5 is a top view of one of the lower yoke-bars. Fig. 6 is a bottom plan view of the topping-knives and sliding brace. Fig. 7 is a side view of one of the ground-knife levers. Fig. 8 is a detail view of one of the ground-knife blocks with knife attached. Fig. 8^a is a plan view of the ground-knife block and the lower end of the ground-knife lever separated and with the adjusting-lever removed.

The numeral 1 indicates the main frame, comprising side sills 2 and front and rear braces 3 and supported on draft-wheels 4.

I preferably employ hounds 5 in order to accommodate the machine to the size of the draft-animals; but the pole may be attached directly to the main frame.

Mounted on each side sill is an upright 6, formed like an inverted Y, and beneath the angle of each Y-upright stands a post 7.

I prefer to mount fenders 8 in front of the

wheels, and, as shown, these comprise straight members 700, provided with curved braces 701 and straight braces 702, attached at one end to the straight members 700 and at the other to the frame. The two fenders are connected at their centers by an angled piece 703, secured to the top of the front brace of the frame, and which serves as a foot-rest for the driver.

Journaled upon the upper ends of posts 7 is a counter-shaft 9, provided with sprocket-wheel 10, connected with a large sprocket-wheel 11 on the inner face of one of the draft-wheels. I have shown the propping, topping, and stripping mechanism as being driven from this counter-shaft; but other suitable connections may be made.

The propping-reels.—The numeral 12 indicates a shaft journaled in brackets on the forward arms 13 of the Y-uprights and provided at each end with removable propping-reels 14. I have illustrated these as being formed of concentric rings 140, connected by spokes 141, having hooked outer ends 142, projecting beyond the outer ring. As the machine advances these propping-reels are driven by means of intermeshing gears 15 on the propping and counter shafts and prop up any fallen cane in order that it may be operated upon by the topping-knives, an operation which I shall next describe. When the cane is all erect, these propping-reels may obviously be dispensed with.

The topping-knives.—Secured to the upper ends of the Y-uprights is a yoke-bar 16, having near its ends semicircular notches 17 and also provided with horizontal openings 18, formed by the forking of the ends of said bar from points within the notches 17. Pivoted in the ends of the yoke-bar and standing in openings 18 are the latch-bars 19, provided with semicircular notches 20 to complement those of the yoke-bar. Bars 19 are adapted to be held latched by pins 190, thus forming a complete circle of the two notches. Removably journaled in the circular openings 21 thus formed are the upright hollow shafts 22. Two yoke-bars 23, similar in construction to the last one except that the latch-bar in each pivots inside the circle, are attached to posts

7 and removably embrace the lower ends of the hollow shafts. Within the lower ends of hollow shafts 22 are adjustably secured, by means of set-screws 220 or equivalent devices, stems 24, bearing at their lower ends the rotary topping-knives 25. These knives are driven by means of bevel-gears 26 on the counter and hollow shafts. The bolt which secures the knives 25 to the stem also engages a brace 27, which is illustrated in Fig. 6 as comprising a right angle having on one arm a vertical portion 29, having a tongue adapted to slide in the grooved trackway 30, secured at its upper end to the lower yoke-bar and at its lower end loosely surrounding the hub of the draft-wheel. As shown in Figs. 1, 2, and 3, the topping-knives are so located that they lie within the lateral or cylindrical projection of the operative path of the propping-reel. By this arrangement the propping-reel raises the fallen cane and supports it until the topping-knives operate upon it. As the machine advances and the cane is raised by the propping-wheels the revolving topping-knives remove the tops of the cane, and, being adjustable vertically, they can be set to remove the tops at any required height.

The strippers.—Behind and alined with the topping-knives are the strippers 31, shown as being formed with heads somewhat in the shape of ordinary brooms and with their handles secured perpendicularly to the ends of a shaft 32, journaled in brackets 320 on the Y-uprights and side sills and having chain-and-sprocket connection 322 with the counter-shaft, so as to revolve in the same direction. I have shown brackets 320 as being mounted on metal bands 321, secured to the Y-uprights and to the side sills. These bands are suitably braced and form strong supports for the stripping-brushes. It is of importance that the construction of these strippers be of yielding nature, so as to avoid danger of breaking the stalks during the downward movement of the brushes. I do not wish to be understood as confining myself to this form of stripper, as any suitable style might be used, their sole function being (after the cane has been topped by the topping-knives) to strip off the leaves by a downward motion. However, I intend to claim, broadly, the principle of a downward motion in stripping the cane-stalks, a motion which is very effective in removing the claspng leaves of such plants.

The ground-knives.—Operating near the surface of the ground and in rear of the forward position of the stripper-heads are the ground-knives 33. These are made of a stout piece of metal having a sharp cutting edge and a reduced stem 330, fitting within depression 34 of knife-block 35, where it may be secured in any suitable manner.

The numeral 39 indicates the ground-knife lever which is used in raising or lowering the knife-block and has a notch which rides the

main axle at 390 between the draft-wheel and frame. Struck on an arc about the notch 390 as a center is a slot 391, in which stands bolt 392 for holding the lever to post 7 against lateral motion. The lower end of lever 39 is rounded to fit a curved groove 37 in the knife-block and is slotted, so as to receive within it a vertical tongue 38, secured to the knife-block, the lever being pivoted to the block, as at 350, at a point near the surface of said knife-block.

40 indicates a depressing-lever pivoted to the outer end of the tongue and bearing against the base of the ground-knife lever.

The pin 400 ordinarily secures the knife-block by passing through an aperture 401 in the end of the knife-lever and one of a series of holes 402 in the tongue arranged in an arc about the pivot. The angle of the knife-block may be adjusted by removing pin 400 and raising the upper end of lever 40, after which the depressing-lever may be lowered again and secured beneath eye 600 on the ground-knife-lever.

The lever-adjuster.—The upper end of the ground-knife lever has a slot 41, in which slides a pin on hand-lever 42, which is pivoted at 420 to the side sill. 43 indicates a slotted keeper, pivoted at its upper end to lever 39 and provided with a slot 43^a, in which stands the fixed pivot 420. The operation of these parts will be readily understood by reference to Figs. 1 and 7, the latter of which shows the lever 39 with its securing-bolt 391 removed from the machine. When it is desired to use the ground-knife, the operator grasps hand-lever 42 and presses it forward and downward, causing pin 410 to slide forward in slot 41 and depress the upper end of lever 39. Meanwhile keeper 43 slides loosely downward upon pivot 420, slot 43^a allowing quite a range of movement. When the hand-lever is released, the weight of the knife-block will reëlevate the forward end of the lever 39 until the extremity of slot 41 contacts with pin 410. At the same time the lower extremity of the slot in keeper 43 engages pivot-bolt 420, and the knife-lever is thus securely braced. While I have illustrated these forms of depressing-lever and adjuster, it is obvious that others might be substituted or they might be dispensed with entirely.

I wish to reserve to myself the right to make such changes in details as may seem expedient without departing from the scope of my invention as indicated in the following claims.

What I claim is—

1. In a cane-harvester, the combination of horizontal topping-knives, a stripper operating in an upright plane in rear of said knives, and a stationary knife below and in rear of the operative position of said stripper and adapted to cut the cane near the surface of the ground.

2. In a cane-harvester, the combination with the topping-knives, of a propping-reel adapted to raise the fallen cane in advance of said knives, and a stripper operating in an upright plane in rear of said knives.

3. In a cane-harvester, the combination with means for propping the fallen cane, of cutting and stripping mechanism in rear thereof comprising topping-knives, a stripper operating in an upright plane in rear of and aligned with said knives, and a stationary knife below and in rear of the operative position of said stripper and adapted to cut the cane near the surface of the ground.

4. In a cane-harvester, the combination with a main frame, of inverted-Y-shaped uprights thereon, a cross-bar connecting their upper ends, a propping-reel having its shaft journaled upon the forward arms of the uprights, topping-knives suspended from the cross-bar, brackets braced from the other arms of the uprights, and a stripper journaled in said brackets.

5. In a cane-harvester, the combination with the main frame, of inverted-Y-shaped uprights thereon, a cross-bar connecting their stems, posts standing beneath the angles of said uprights, a power-shaft journaled upon said posts, a propping-reel having its shaft journaled upon the forward arms of the uprights, topping-knives suspended from the cross-bar, brackets braced from the rear arms of the uprights, a stripper journaled in said brackets, and connections between the power-shaft and the moving parts.

6. In a cane-harvester, a resilient stripper for removing the leaves from the standing cane, and mechanism for giving said stripper a downward operative motion.

7. In a cane-harvester, a stripper for removing the leaves from the standing cane, and mechanism for giving said stripper a downward operative motion; combined with knives located in advance of the stripper for removing the tops of the cane.

8. In a cane-harvester, a stripper for removing the leaves from the standing cane, and mechanism for giving said stripper a downward operative motion; combined with propping mechanism for raising the stalks in advance of the stripper.

9. In a cane-harvester, a stripper for removing the leaves from the standing cane, and mechanism for giving the stripper a downward operative motion; combined with knives located in advance of the stripper for removing the tops of the cane, and propping mechanism for raising the stalks in advance of the knives.

10. In a cane-harvester, the combination of a rotating propping-reel operating in an upright plane, and suitable cutting mechanism located to one side of and within the lateral projection of the path of said reel and adapted to top the cane while the latter is propped by the reel.

11. In a cane-harvester, the combination of a rotating propping-reel in an upright plane, and a knife located to one side of and within the lateral projection of the path of said reel and rotating in a plane perpendicular to the plane of the reel.

12. In a cane-harvester, the combination with a rotatable hollow shaft, and a trackway parallel therewith; of a stem adjustable in said shaft and adapted to rotate therewith; a knife fixedly mounted on said stem, and a non-rotatable brace swiveled on the stem and provided with a perpendicular tongued portion adapted to slide in the trackway.

13. In a cane-harvester, the combination with the shaft bearing the topping-knives, of means for rotatably supporting said shaft comprising a yoke-bar having a notch, a latch-bar pivoted to said yoke-bar and provided with a notch adapted to complement that of the yoke-bar to loosely embrace the shaft, and means for securing said latch-bar in its closed position.

14. In a cane-harvester, a stripper having resilient stripping-fingers, combined with mechanism for causing said stripper to operate upon the cane with a downward motion.

15. In a cane-harvester, the combination with a stripper having integral resilient stripping-fingers, of mechanism for causing said stripper to operate upon the cane with a downward motion.

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

ADAM C. A. DUPUY.

Witnesses:

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C. D. STURTEVANT.