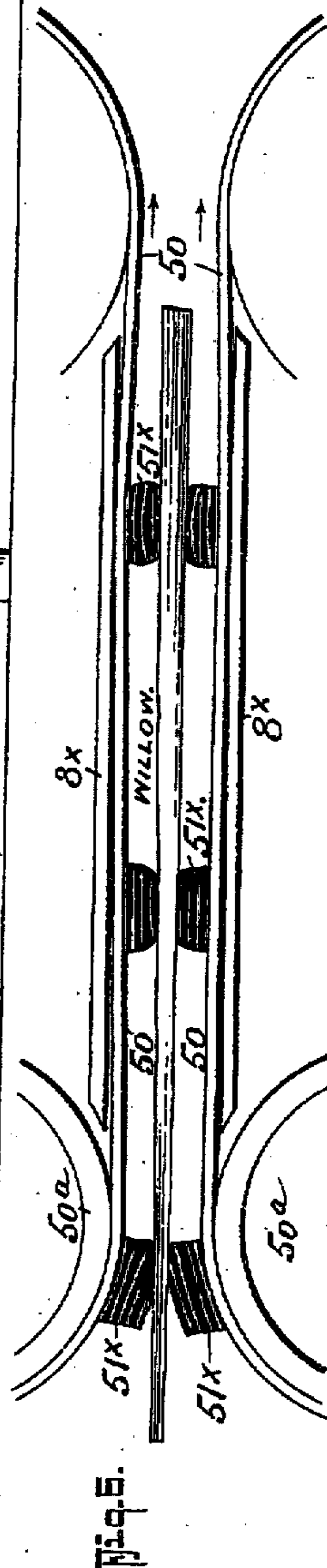
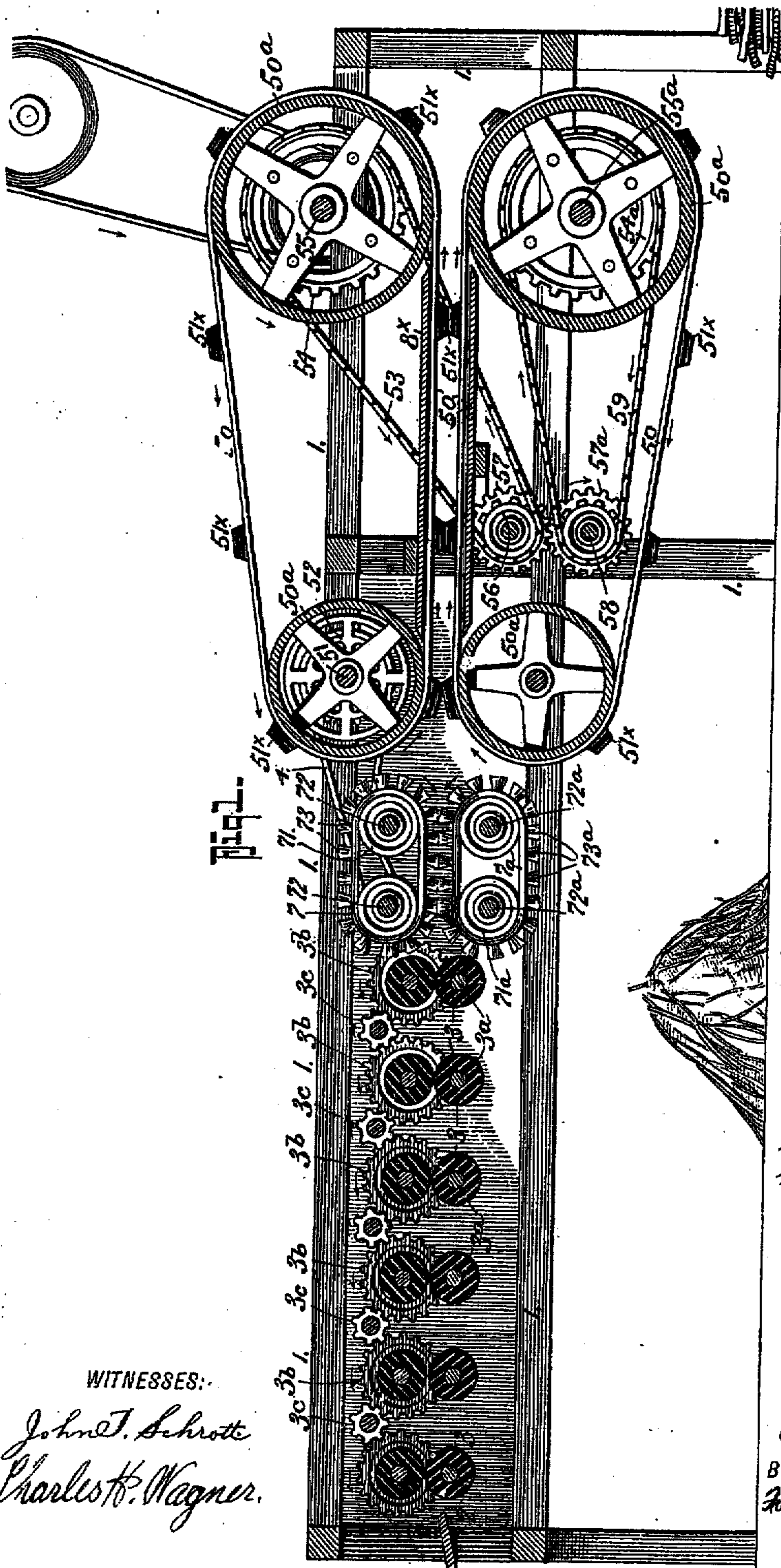


940,260.

C. C. LARSEN.
WILLOW STRIPPING MACHINE.
APPLICATION FILED DEC. 26, 1908.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.



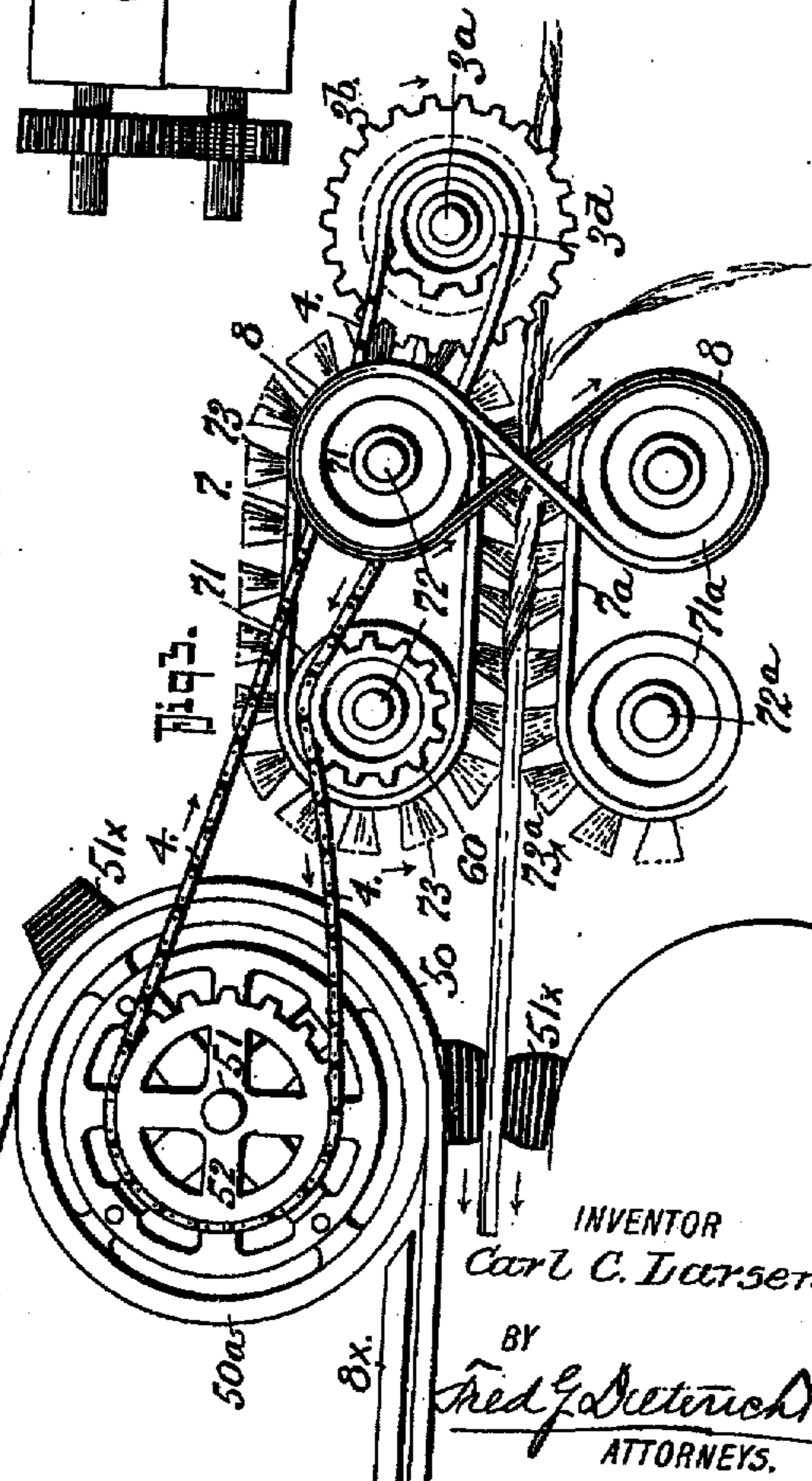
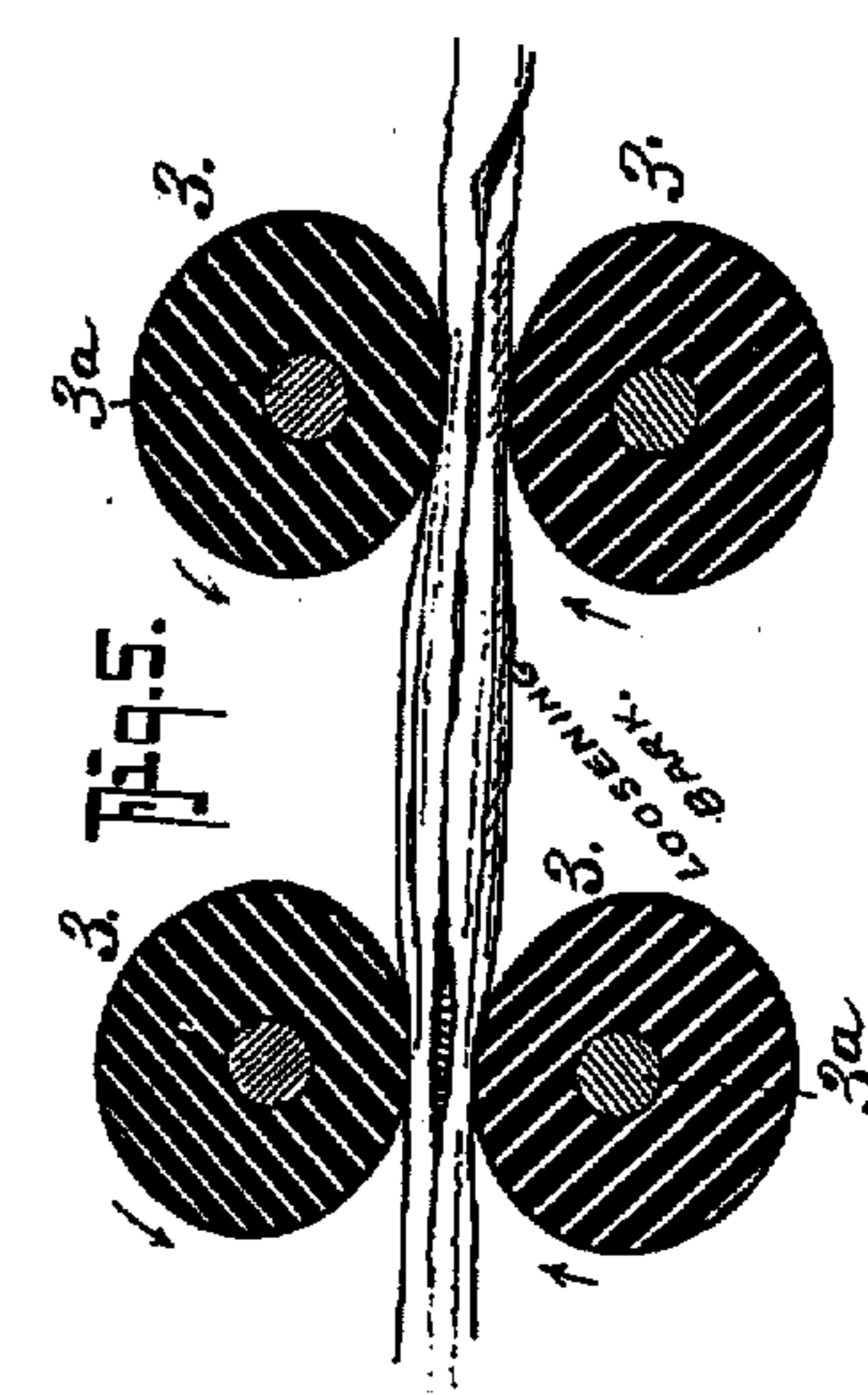
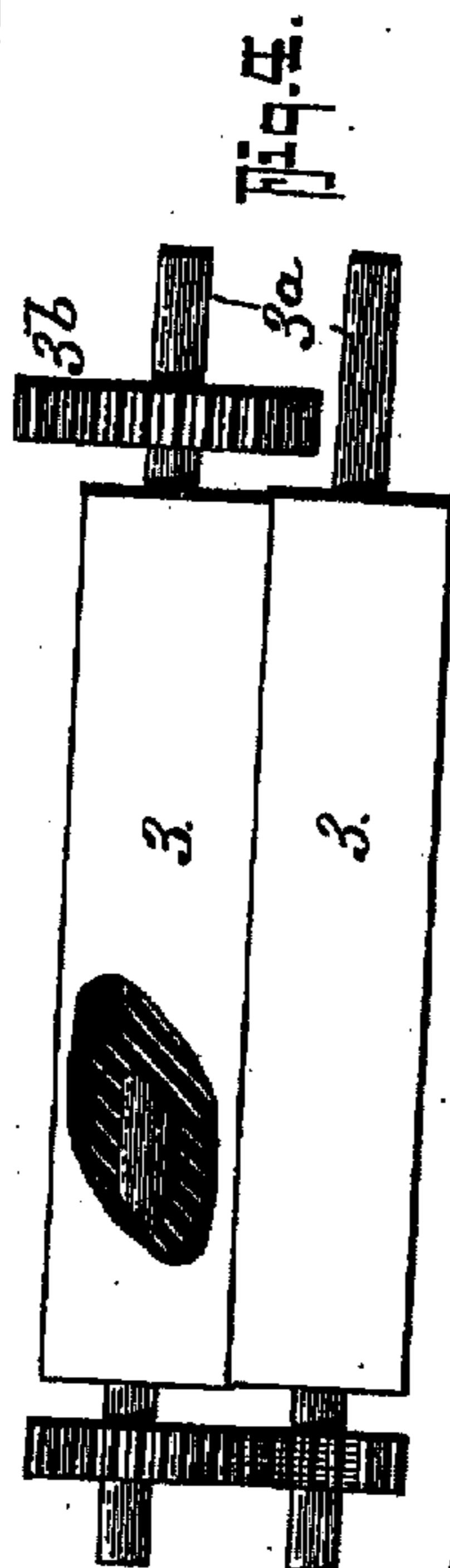
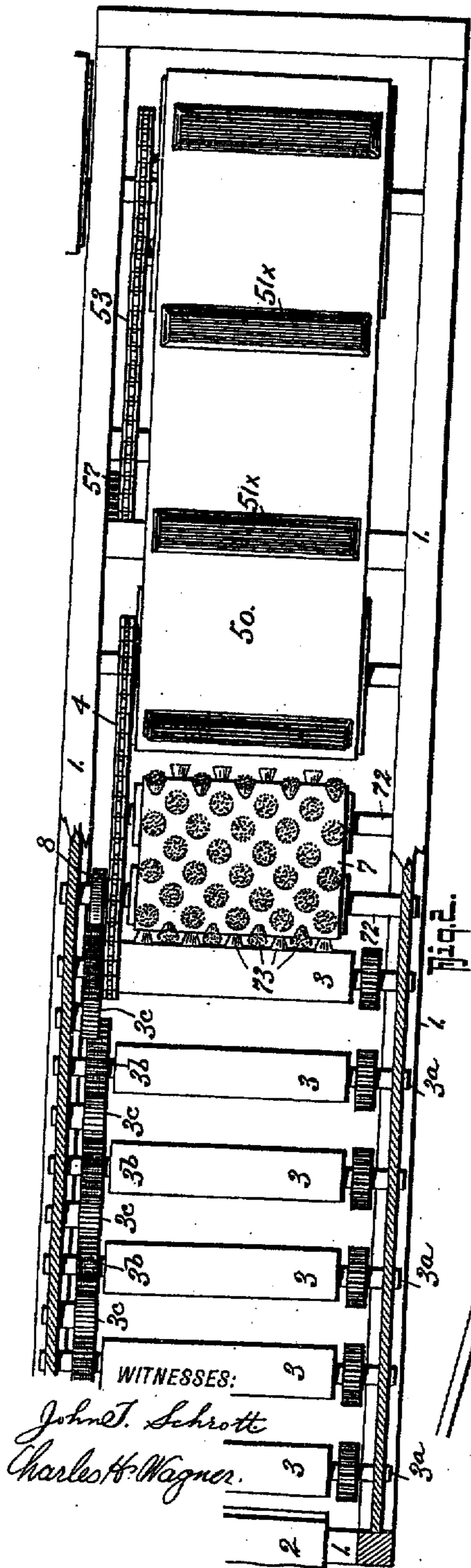
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940,260.

C. C. LARSEN.
WILLOW STRIPPING MACHINE.
APPLICATION FILED DEC. 28, 1908.

Patented Nov. 16, 1909.
2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CARL CHRISTIAN LARSEN, OF SIOUX CITY, IOWA, ASSIGNOR OF ONE-HALF TO FRANZ SHENKBERG, OF SIOUX CITY, IOWA.

WILLOW-STRIPPING MACHINE.

940,260.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed December 26, 1908. Serial No. 469,324.

To all whom it may concern:

Be it known that I, CARL CHRISTIAN LARSEN, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented
5 a new and Improved Willow-Stripping Machine, of which the following is a specification.

My invention relates to improvements in that type of machines that are especially designed for stripping the bark from willows
10 that are used in the manufacture of willow baskets and it has for its object to provide a machine of the character stated, of a simple and economical construction in which the
15 willow is so manipulated or gripped during a continuous longitudinal passage thereof through the machine that the bark is effectively removed, without the aid of scrapers, and in such manner that the willow
20 is not marred, cut or otherwise injured during the operation of stripping.

My invention comprehends an improved coöperative arrangement of means for feeding
25 in the willows and at the same time crush the bark, brushing mechanism for tearing back or peeling the bark from the willow combined with means for gripping the stripped willow to discharge it from the machine, that comprises yielding opposing
30 gripper members continuously movable in one direction and so arranged to provide for a positive gripping of the willow at different points, and in such manner that the gripping action is as positive at the tip or thin
35 end of the willows as at the butt end thereof.

In its more subordinate features, my invention consists in certain details of construction and peculiar combination of parts,
40 all of which will be hereinafter fully described, and specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1, is a longitudinal section of my improved construction of willow stripping
45 machine. Fig. 2, is a top plan view thereof. Fig. 3, is a detail side elevation of the brush mechanism and a portion of the discharging means. Fig. 4, is a front elevation of a set of the combined feed and compressing rolls.
50 Fig. 5, is a longitudinal section of a pair of sets of the said rolls. Fig. 6, is a detail view of a portion of the discharging means hereinafter referred to.

Referring now to the drawings, 1 designates a suitable frame for supporting the

operating mechanism, at the feeding in end of which is mounted a platform 2, on which the willows are laid, butt end forward, as they are fed into the machine.

Journalled in suitable bearings provided
60 therefor on the frame, are a number of sets of combined squeezing and compressing rolls, each set of which consists of a pair of superimposed rubber rolls 3—3 mounted on the shafts 3^a—3^a the ends of which engage the
65 frame bearings. In practice, I use a number of sets of the rolls 3—3, six sets being shown in the drawing, in longitudinal alinement, and the upper ones of each set of rolls have gears 3^b—3^b that mesh with idle gears
70 3^c—3^c so as to impart a uniform forward rotation to all the rolls, motion being transmitted to the rolls by an endless chain belt 4 that takes over a chain wheel 3^d on the innermost one of the gears 3^b and over
75 sprocket wheel 52 mounted on the shaft 51 that forms a part of the discharging mechanism hereinafter set out and clearly shown in Fig. 3, by reference to which it will be also seen that the chain belt 4 passes over
80 and transmits motion in the required direction to a sprocket wheel 60 mounted on one of the shafts 72 that forms a part of the brush mechanism and imparts motion thereto. The rolls 3—3 act as feeder in
85 rolls since they grip the willows and carry them forwardly through the machine and as the opposing rolls of each set of rolls 3—3 are held closely contacting and with their shafts in relatively fixed positions it
90 follows that the willows, which are fed with the butt end into the machine, are tightly squeezed by the rolls 3—3, the squeezing action being of such character so as to thoroughly split or break the bark on the willows,
95 as they are being fed to the brush mechanism that removes the split, cracked or broken bark.

The peeling or bark removing means consists of two endless belts, an upper one
100 and a lower one 7^a, that take over the upper and lower belt drums 71—71^a mounted on the shafts 72—72^a suitably journaled at their ends in the main frame, each of the said drums carrying a series of transversely
105 disposed brushes 73—73^a of suitable material that are caused to travel in the direction opposite to the movement of the willow, by reason of the shafts 72—72^a of the upper and lower belt drums being connected by
110

a crossed drive belt 8, see Fig. 3, and the drive chain that takes over the sprocket wheel 60 on the upper drum shaft 72.

Coöperating with the brushing means 5 that turn back the crushed and split bark and peel the willows as they pass forwardly, is a combined willow peeling and discharging means, that grips the butt end of the willows as they are projected through the 10 brushes by the innermost ones of the feed rolls and completes the action of drawing the willows through the brushes as the bark in peeling off accumulates on the tip end of the willow, and retards the feeding action 15 of the infeed rolls. The discharging and pulling means, the construction of which forms an essential feature of my invention, is best shown in Fig. 1, by reference to which it will be noticed the same consists of a pair 20 of opposed endless belts 50—50, an upper and a lower one that are mounted on the upper and lower belt drums 50^a—50^a, the upper one of which is mounted to turn with the shaft 51 that carries the chain driven sprocket wheel 52 with which the driving 25 chain belt 4 engages, as shown.

The belts 50—50 each have a series of transversely disposed ribs 51^{*} that coöperate and these ribs are of rubber or other yield- 30 able material and the two belts and the ribs 51^{*} 51^{*} are relatively so mounted that the rib members contact as they pass into the receiving end of the belts 50 and provide, as it were, a series of spaced opposing grip- 35 ping members for gripping the peeled willows.

Since the willows, as they pass peeled from the peeling or bark removing means, present smooth slippery surfaces, and since 40 the quality of the willow depends on having them pass from the machine without being cut or bruised, and further, since the thickness of the willow gradually decreases from the butt to the tip end, it follows that by 45 providing a conveyer discharging means with a series of yielding contacting surfaces the willow will be firmly gripped between the ribs at different points along its length and firmly held between the said ribs with- 50 out the slightest danger of marring the smooth surface thereof and with a tight gripping thereof at its different diameters or thicknesses.

Motion is transmitted to the lowermost 55 belt 50 by a chain belt 53 that takes around the chain wheel 54 on the upper belt drum shaft 55 and over a chain wheel 56 that has a gear 57 in mesh with a similar gear 57^a in an idler shaft 58, mounted on the main 60 frame and which is coupled by means of a chain belt 59 with the chain wheel 54^a on the shaft 55^a of the lower belt drum 50^a at the discharge end of the machine.

From the foregoing description, taken in 65 connection with the drawings the complete

construction, operation and the advantages of my invention will readily be apparent to those skilled in the art to which it apper- tains.

To hold the willow gripping portions of 70 the belts 50—50 in proper horizontal contact as the peeled willow strip is gripped thereby and carried forwardly to the dis- charging end of the machine upper and lower fixedly held guides 8^{*}—8^{*} are pro- 75 vided between the gripping portion of the belts 50—50 pass, as clearly shown in Fig. 1.

Having thus described my invention, what I claim as new and desire to secure by Let- 80 ters Patent, is:—

1. A willow stripping machine that com- 80 prises a frame, a stripping mechanism, means for forcing the willow through the said mechanism and a discharging means adapted to grip the peeled willow as it 85 leaves the stripping mechanism, said dis- charging means comprising a pair of coact- ing belts, having, at intervals transversely disposed rubber strips for gripping the peeled willow strips and a single drive gear 90 coöperatively connected with the stripping mechanism, the means for forcing the wil- low through the said mechanism and the discharging means.

2. A willow stripping machine that com- 95 prises a frame, a series of sets of superim- posed feeding in rolls mounted in one end of the frame, stripping means consisting of a pair of coacting endless belts, having transversely disposed brushes, said belts and 100 brushes being in longitudinal alinement with the feeding in rolls, a discharging means comprising a pair of coacting endless belts having, at intervals, transversely dis- 105 posed rubber strips for gripping the peeled willow strips and a single drive gear co- operatively connected with the feeder in rolls, the stripping and the discharging means.

3. A willow stripping machine that com- 110 prises a frame, a series of sets of superim- posed feeding in rolls mounted in one end of the frame, stripping means consisting of a pair of coacting endless belts, having transversely disposed brushes, said belts and 115 brushes being in longitudinal alinement with the feeding in rolls, a discharging means comprising a pair of coacting endless belts having, at intervals, transversely dis- 120 posed rubber strips for gripping the peeled willow strips, guides for holding the oppos- ing gripping portions of the belts in a con- tacting position and a single drive gear co- operatively connected with the feeder in 125 rolls, the stripping and the discharging means.

CARL CHRISTIAN LARSEN.

Witnesses:

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F. THEIMBERG.