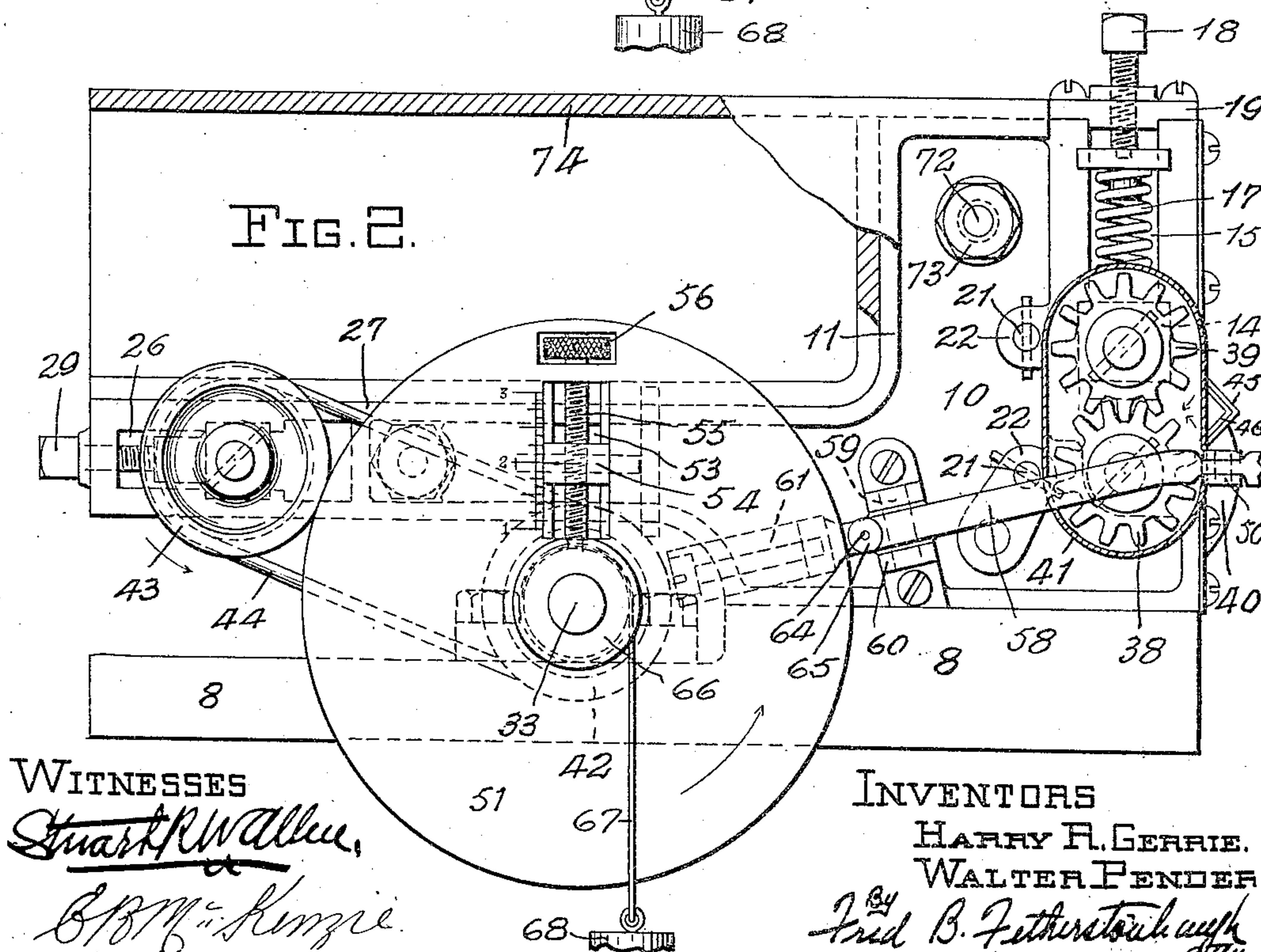
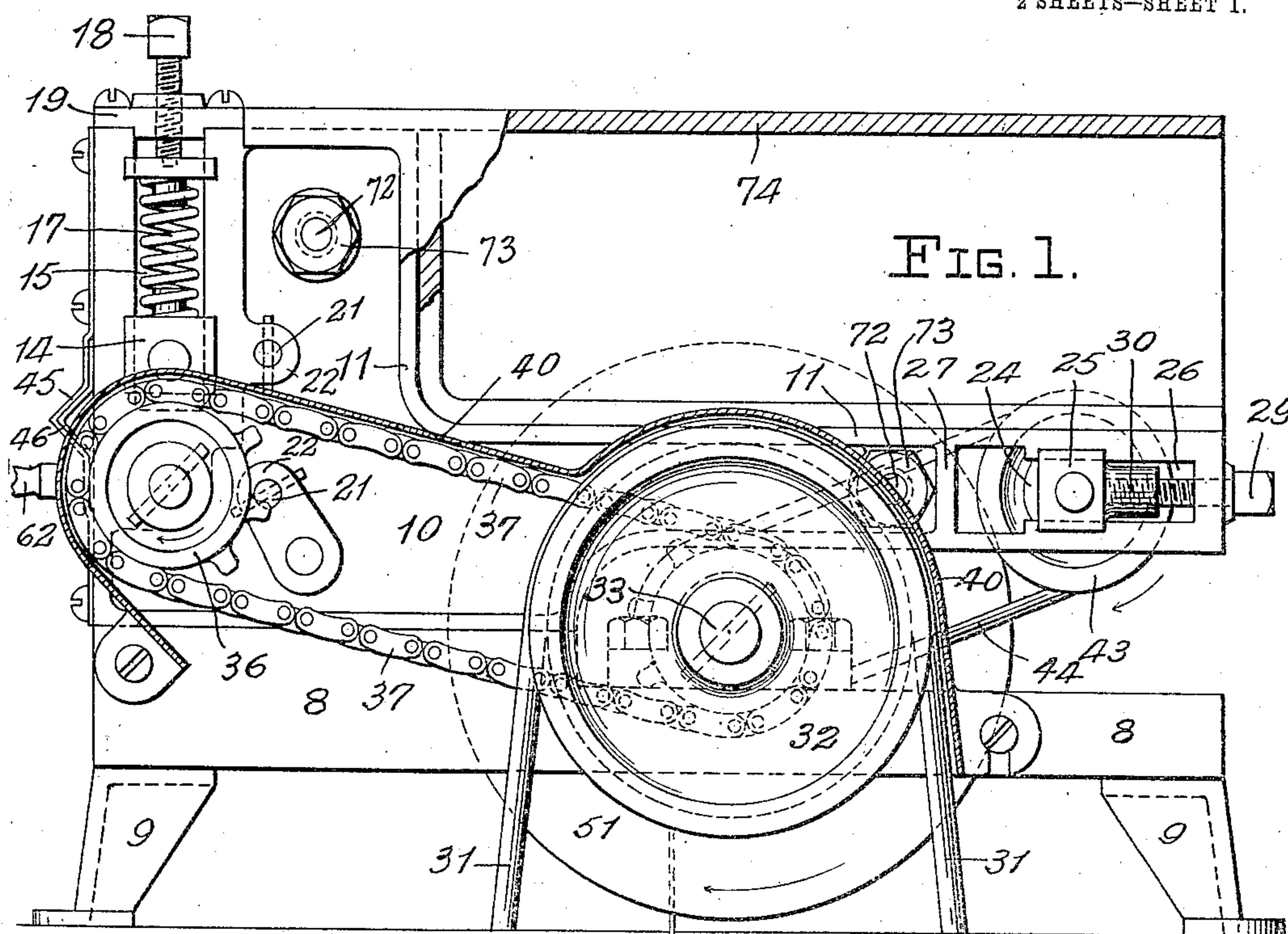


H. R. GERRIE & W. PENDER.
TOBACCO LEAF STEMMING MACHINE.
APPLICATION FILED JULY 10, 1908.

915,342.

Patented Mar. 16, 1909.

2 SHEETS—SHEET 1.



WITNESSES
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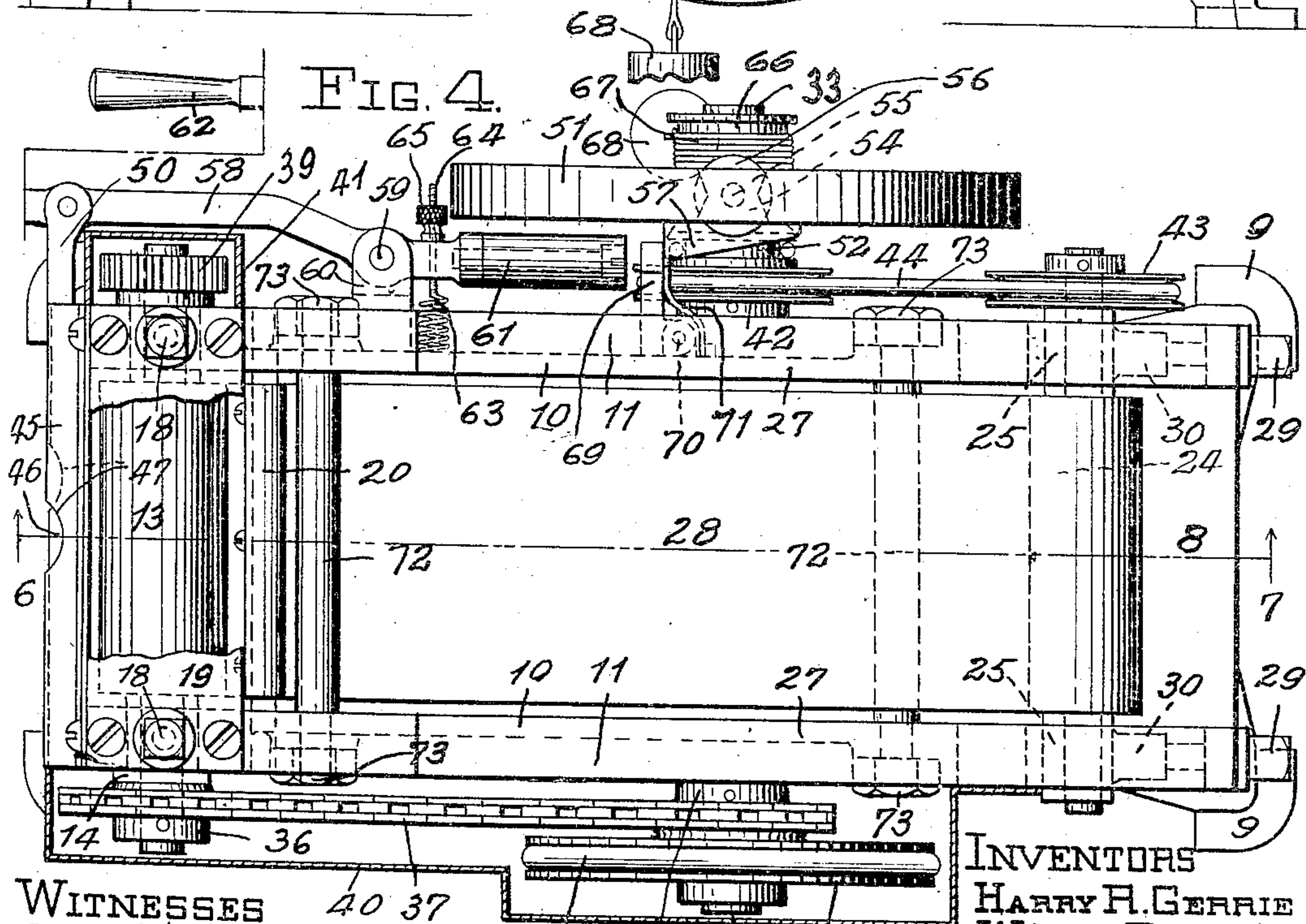
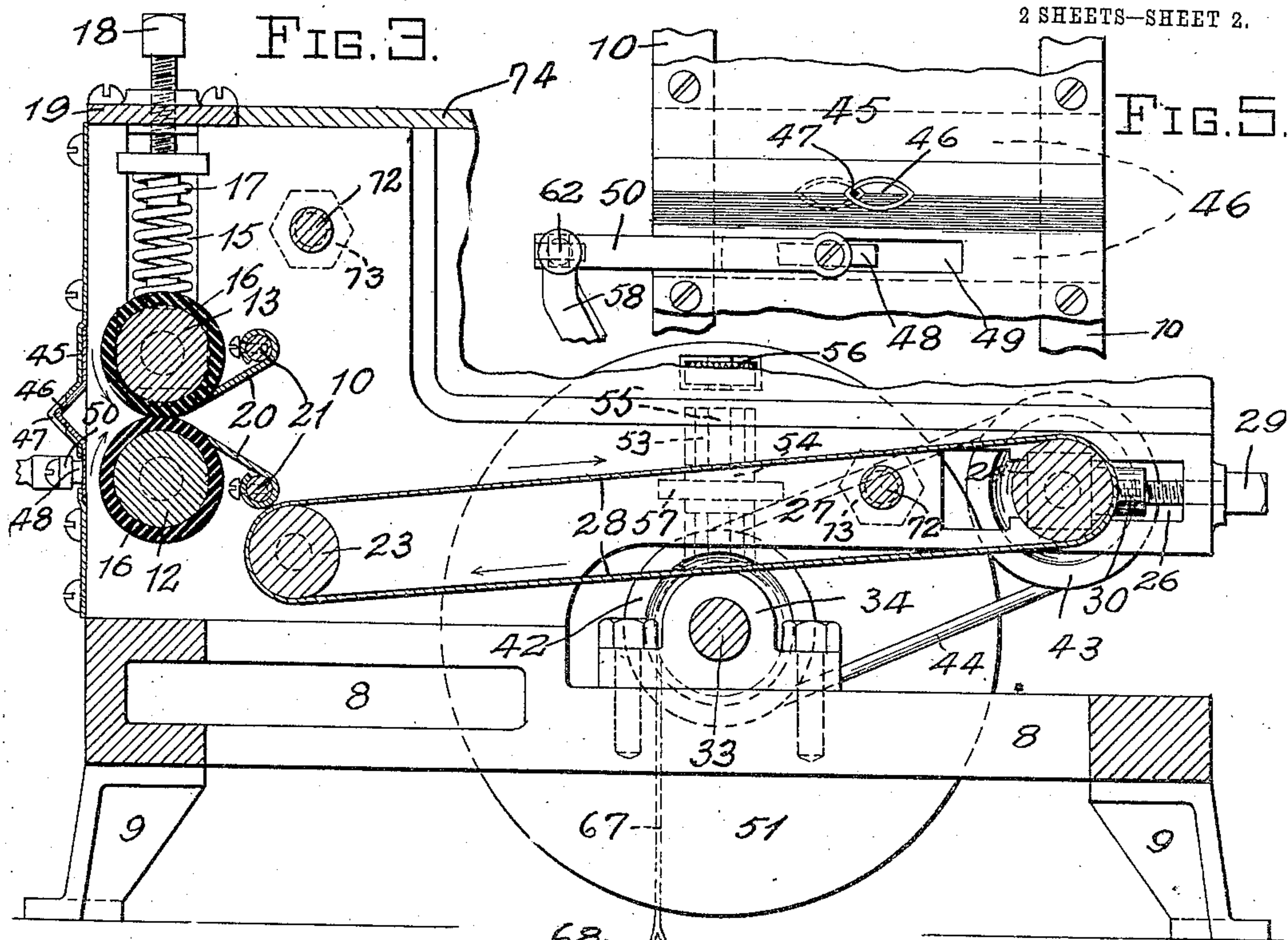
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WITNESSES

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UNITED STATES PATENT OFFICE.

HARRY R. GERRIE AND WALTER PENDER, OF MONTREAL, QUEBEC, CANADA.

TOBACCO-LEAF-STEMMING MACHINE.

No. 915,342.

Specification of Letters Patent.

Patented March 16, 1909.

Application filed July 10, 1908. Serial No. 442,826.

To all whom it may concern:

Be it known that we, HARRY R. GERRIE and WALTER PENDER, of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Tobacco-Leaf-Stemming Machines, of which the following is a full, clear, and exact description.

Our invention relates to improvements in tobacco leaf stripping machines and the main object is to provide a simple and inexpensive machine which will rapidly strip the tobacco leaves from the stem without waste.

A further object is to provide a machine that will operate on packed leaf tobacco without the necessity of moistening or spreading same.

A still further object is to provide an adjustable cutter adapted to sever the stem in different varieties of tobacco at any desired length.

Heretofore nearly all tobacco leaf has been stripped by hand, which operation is both expensive and wasteful. Furthermore this method necessitates moistening the leaf before it can be handled, which destroys the flavor and also the color of the tobacco.

Our invention is designed to eliminate the above difficulties and consists essentially of a framework carrying feed rolls, operating mechanism, and a stem conveyer. The stripping knives, which are an important part of the machine, are located at the front thereof and comprise a pair of annular plates having elliptical orifices therein, said orifices being normally partially out of register with each other.

In the drawings which illustrate our invention:—Figure 1 is an elevation of the right hand side of the machine. Fig. 2 is an elevation of the left hand side of the machine. Fig. 3 is a vertical sectional view on the line 6—7 of Fig. 4. Fig. 4 is a plan view with the cover removed. Fig. 5 is a partial front elevation.

In the above defined figures, 8 designates a foundation mounted on suitable legs 9, and supporting the substantially L-shaped side frames 10 which are provided with peripheral stiffening flanges 11. A roll 12 is mounted between the frames 10 and a corresponding roll 13 is mounted above the roll 12 by means of bearing blocks 14 operating in slots 15 in side frames. The rolls 12 and 13 are preferably provided with resilient coverings 16, such as rubber or other suitable

material but may be of solid material such as steel. The pressure of the rolls is regulated by means of helical springs 17 and set screws 18 passing through the top plate 19 of the machine and adjusting the compression of the springs. The rolls are kept clean by means of scrapers 20 carried by shafts 21 which are rigidly secured to the bosses 22 through which they pass in the side frames. An idler roll 23 is mounted below the scraper of the lower roll. A second roll 24 is mounted in blocks 25 operating in slots 26 in the arms 27 of the frames. A conveyer 28 connects the rolls 23 and 24. The tension of the conveyer 28 is regulated by screws 29 which pass through the ends of the arms 27 and engage threaded bosses 30 on the blocks 25.

The motive power of the machine is transmitted by a belt 31 to a pulley 32 mounted on the shaft 33, which is supported in bearings 34 secured to the foundation. A chain gear 35 is fixed to the shaft 33 inside the drive pulley 32. A similar gear 36 is fixed to the extremity of the journal of the lever roll 12 and the two gears 35 and 36 are connected by a chain 37. The opposite ends of the rolls 12 and 13 from the drive chain 37 are connected by long tooth gears 38 and 39 to insure the equal rotation of both rolls. The gears 35 and 36 with the chain 37 and the pulley 32 are inclosed in a suitable casing 40, and the back gears 38 and 39 are also inclosed in a casing 41, thus preventing liability to accident. On the opposite side of the machine from the chain, a small pulley 42 is fixed to the shaft and a corresponding pulley 43 to the extremity of the roll 24, both pulleys being connected by a belt 44 whereby motion is transmitted from the shaft 33 to the conveyer 28. The stripping knives consist of a fixed plate 45, forming the front of the machine, which is bent angularly outwardly opposite the junctions of the rolls 12 and 13, as best seen in Fig. 3. The plate 45 forms a support for the second plate 46 which is similar in form and slides between the plate 45 and the ends of the side frames 10. Each of the plates is provided with a substantially elliptical opening 47 in the angular edge thereof. The inner plate 46 is provided with a block 48 which projects through a slot 49 in the outer plate 45 and carries one extremity of a bar 50, the purpose of which will be hereinafter described. A disk 51 is mounted on the end of the shaft 33, outside the pulley 42, by means of a clutch

52. The disk 51 is provided with a radial slot 53 having beveled edges in which a block 54 is slidably adjusted by means of a screw 55 having a finger nut 56. The block carries a wedge shaped cam 57 on the inner face of the disk. A lever 58 is pivoted at 59 in a bracket 60 mounted in one of the side frames. One portion of the lever extends inside the disk 51 in the path of the cam 57 and is provided with an outer revolving sleeve 61 to minimize the friction with the cam. The other portion of the lever 58 extends forwardly and terminates in a handle 62 adjacent the base of which the bar 50 is pivoted. A helical tension spring 63 is fixed to the frame and provided with a threaded extension 61 which passes through the lever 58 so that the tension of the spring 63 may be adjusted by means of a finger nut 65. A small flanged drum 66 is fixed to the disk 51 and has wound thereon a cord or chain 67 from which depends a weight 68. The cord is wound so that the weight tends to rotate the disk in the opposite direction from the rest of the machine. A small one way stop 69 is pivoted at 70 to the frame and lies in the path of the cam 57. A spring 71 insures the stop being in position to arrest the cam when the disk moves under the impulse of the weight. The side frames are braced and maintained a suitable distance apart by means of shouldered bars 72 secured to the members by nuts 73. The top of the machine is inclosed by a removable cover 74 open at the end to allow the egress of tobacco stems.

The operation of the device is as follows:—
The operator grips the handle 62 and presses it inwardly so that the knife openings 47 register with each other. He now introduces the stalk end of a tobacco leaf into this orifice sufficiently to be caught between the rolls 12 and 13, and releases the handle 62, whereupon the spring 63 actuates the lever 58 and bar 50 to maintain the knife openings as much out of register as the tobacco will allow, thus insuring a knife pressure on all sides of the stem. The resilient covering 16 of the rolls 12 and 13 grips and holds the tobacco stem while the rotation of the rolls draws the stem into the machine, thus stripping the tobacco leaf off on the edges of the knife openings. The spring mounted upper roll 13 maintains an even pressure and grip on the stem, while the rolls, being geared together, further insures a perfect grip. Any matter adhering to the rolls is removed by the scrapers 20, which discharge such matter into the rapidly traveling conveyer 44, which also carries the tobacco stems. When the operator judges that sufficient stem has been removed from a tobacco leaf, he either presses the handle of the lever 58 outwardly causing the knives to move out of register sufficiently to sever the tobacco stem, or

under certain conditions he throws in the clutch 52, thereby connecting the disk 51 with the revolving main shaft 33. As the disk rotates, the cam 57 carried thereby is brought into contact with the revoluble sleeve 61 on the extremity of the lever, moving said lever so that it actuates the inner knife 46 through the bar 50 to move sufficiently to sever the tobacco stem. As soon as the stem is severed, the operator releases the clutch and frees the disk, whereon the weight 68 acting through the cord 67, which has been wound on the drum 66 by the rotation of the disk, rotates the disk in the opposite direction until the back of the wedge shaped cam 57 comes in contact with the stop 69 and arrests the motion of the disk. The stripped stalk is carried by the conveyer and discharged at the rear of the machine. A small clutch may be used on the driving pulley 32 so that the machine can be stopped independently of the line shaft or individual motor drive may be employed to replace the belt drive.

The invention possesses a great variety of advantages, the principal ones being; first, a great saving of tobacco by clean stripped stems due to uniform knife pressure and speed; second, rapidity of operation; third, simplicity of construction giving low cost and reliability; fourth, protection of operatives by covering all moving parts; and fifth, ease and simplicity of operation.

Having thus described our invention, what we claim is:—

1. In a tobacco leaf stripping device, a stationary apertured plate, a movable apertured plate, a lever adapted to reciprocate said movable plate, a revolving shaft, a disk provided with a radial slot, mounted on said shaft, a block carrying a wedge shaped cam, slidably adjustable in said radial slot and adapted to actuate said lever.
2. In a leaf stripping machine, a pair of cooperating apertured knives, an adjustably tensioned lever connected to one of said knives and provided at its inner end with a revoluble sleeve, a revolving shaft, a slotted disk, a wedge shaped cam radially adjustable on said disk and co-acting with said revoluble sleeve, a clutch connecting said disk and shaft and means located on said shaft for rotating the disk in an opposite direction from that in which said shaft moves.
3. In a leaf stripping machine, a pair of stripping knives comprising a stationary apertured plate and a movable apertured plate, a spring actuated lever connected to said movable plate, operating to normally move said plates into position to strip the blade of a leaf from the stem, rolls for engaging the stem in drawing the same through the plates, and a rotary cam arranged to operate said lever to cause said knives to sever the stem, substantially as described.

4. In a tobacco leaf stripping device, a pair of plates having cutting apertures therein, a manually operated and tensioned lever adapted to normally maintain said plates in position to strip the tobacco leaf passing through said apertures, a pair of pressure rolls adapted to grip the stem of the leaf and means arranged to operate said lever to cause the knives to sever the stem, substantially as described.

5. In a leaf stripping machine, a pair of superposed stripping plates, a lever connected to one of said plates, operating to normally maintain them in tensioned contact with the tobacco leaf being stripped, a pair of rolls adapted to draw the stem through the plates, a cam cooperating with said lever to intermittently reciprocate one of said plates, said cam being carried by and adjustably mounted upon a revoluble disk, substantially as described.

6. In a leaf stripping machine, a pair of knives consisting of a fixed plate bent angularly outwardly and provided with an elliptical opening in the angular edge thereof, and a movable plate similar in form, supported by and slidably mounted on said fixed plate, a tensioned lever adapted to reciprocate said movable plate and to normally maintain said elliptical openings out of register, and means operating to sever stems of different thicknesses.

7. In a leaf stripping machine, a pair of cooperating apertured plates, having cutting apertures therein, a spring actuating said lever to normally move said plates into position to strip the leaf from the stem, a revolving shaft, a slotted disk, a cam adjustably mounted on said disk and adapted

to actuate said lever, a clutch connecting said disk and shaft, a pair of rolls, and scrapers for said rolls, substantially as described.

8. In a tobacco leaf stripping device, a stationary apertured plate, a movable apertured plate, a spring held lever adapted to actuate said movable plate, and means arranged to move said lever to cause the plates to sever the stem and said means being adjustable to actuate said lever different degrees to cause the plates to sever stems of different thicknesses.

9. In a tobacco leaf stripping machine a pair of stripping knives comprising a stationary apertured plate, and a movable apertured plate, a lever connected to said movable plate, a spring controlling said lever to normally maintain the plates in stripping position, said lever being manually operable to move the plates to receive the stem of the leaf being stripped and also to finally sever the stem.

10. In a tobacco leaf stripping device a pair of stripping knives comprising a stationary apertured plate, and a movable apertured plate, a lever connected to said movable plate and normally maintaining said plates in tensioned contact with the leaves being stripped, said lever being manually operable to move the plate to receive the stem of the leaf and also to finally sever the stem.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

HARRY R. GERRIE.

WALTER PENDER.

Witnesses:

C. W. TAYLOR,

E. B. MCKENZIE