J. W. POINDEXTER.

BREAKING AND SCUTCHING MACHINE.

APPLICATION FILED JUNE 17, 1907.

962,783.

Patented June 28, 1910.

4 SHEETS—SHEET 1.

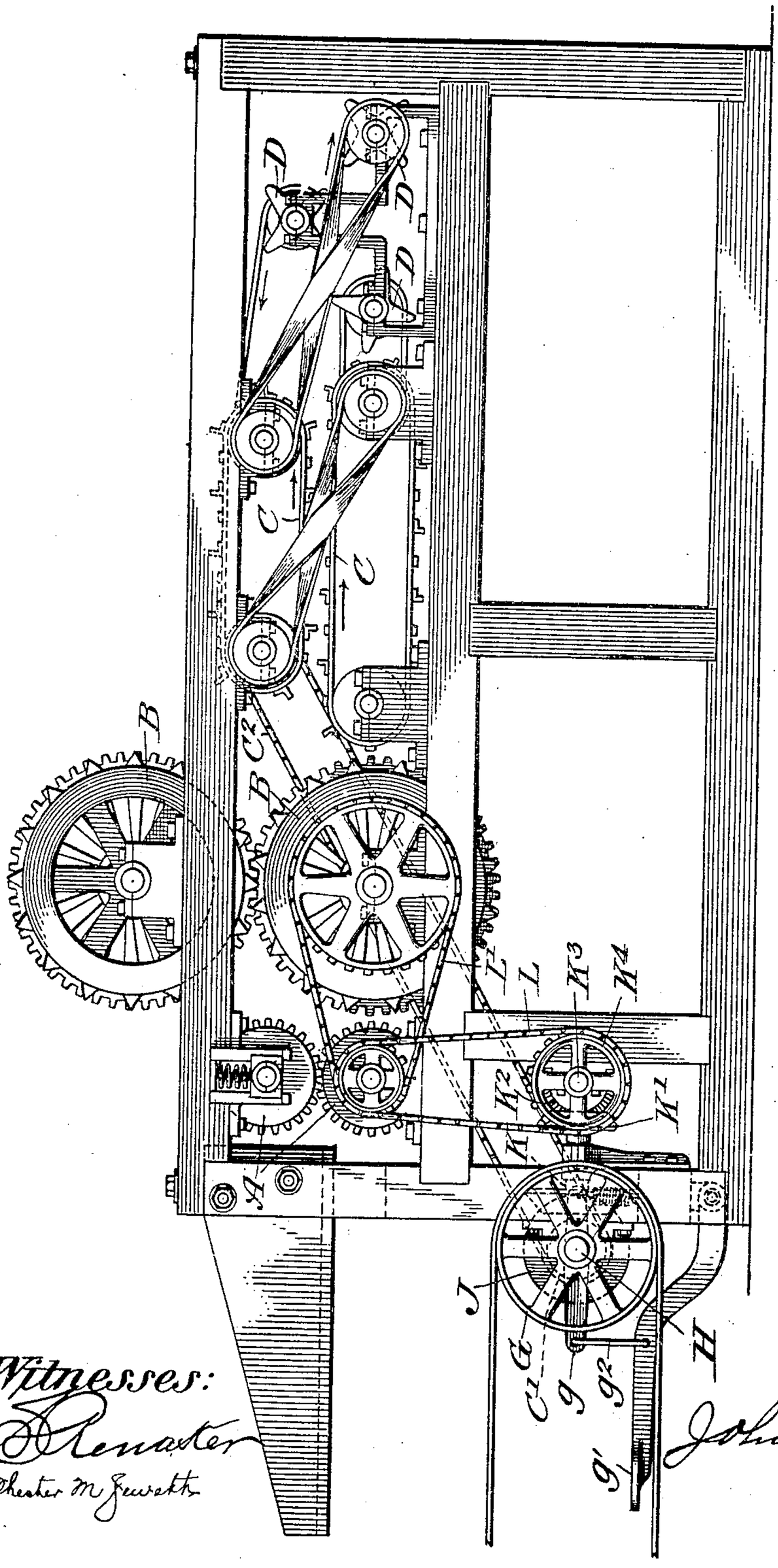

Fig. 1.

Witnesses:
Chester M. Jewett

Inventor,
John W. Poindexter

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

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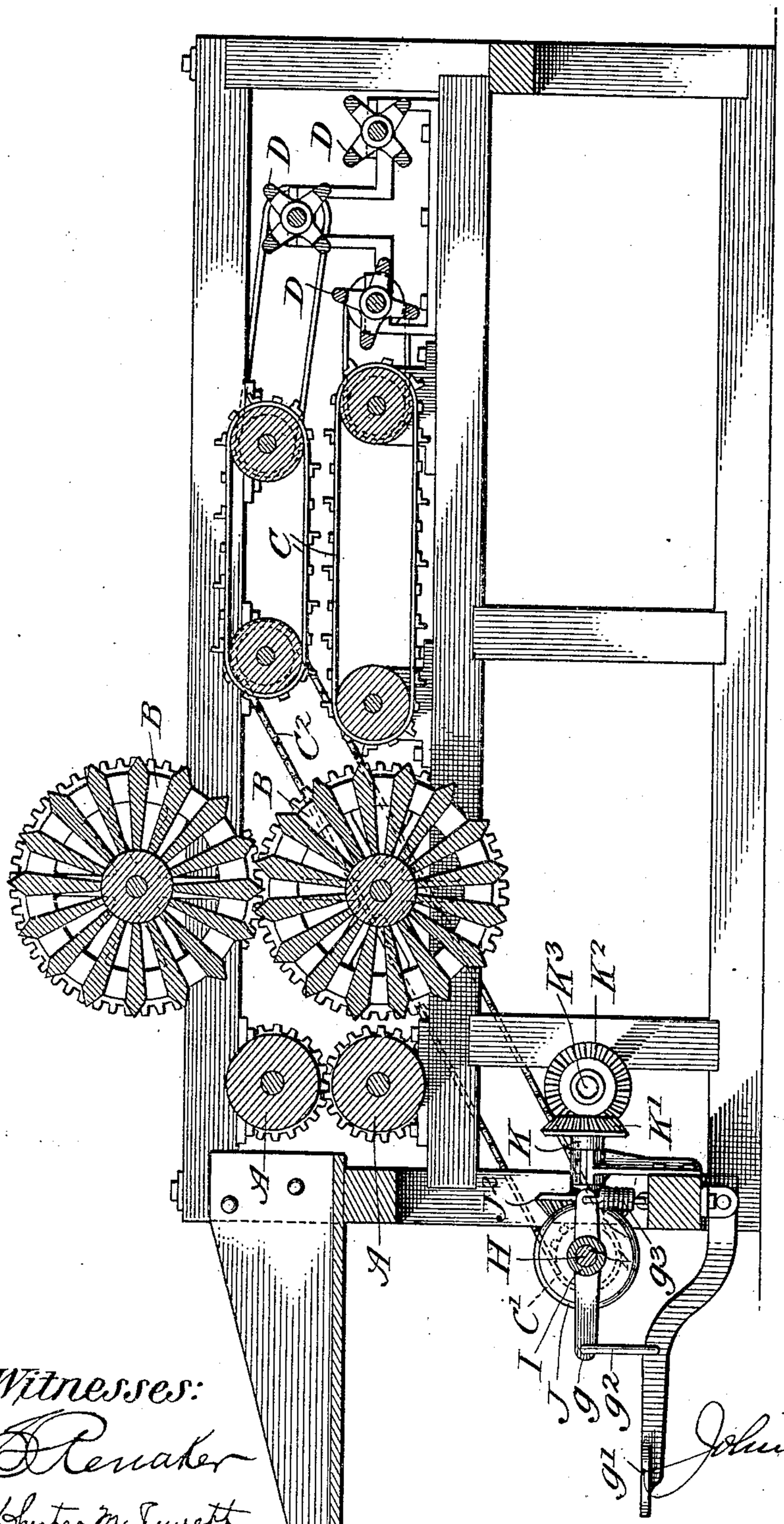

Fig. 2.

Witnesses:

E. Renaker

Chester M. Jewett

Inventor,

John W. Poindexter

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C

J. W. POINDEXTER.

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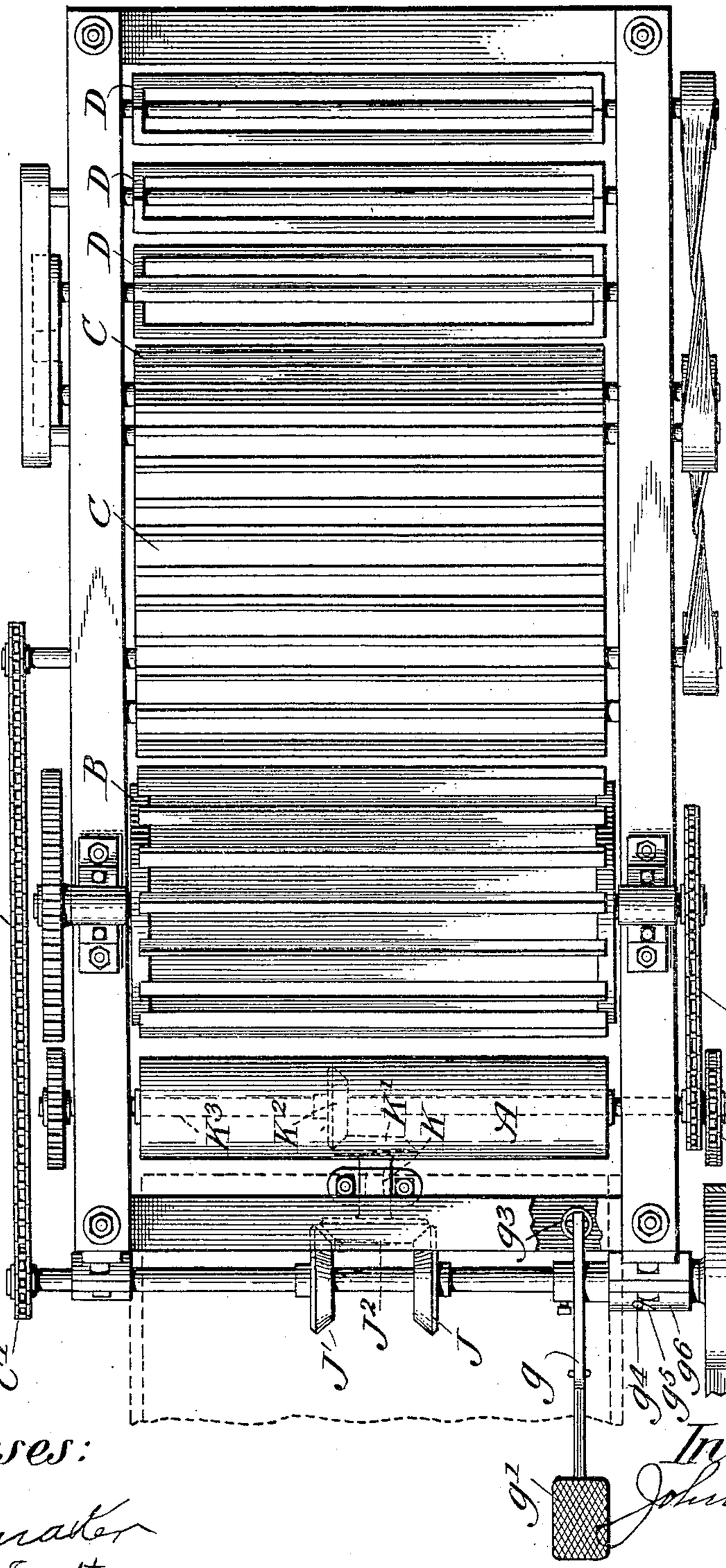

Fig. 3.

Witnesses:

Chester M Jewett

Inventor,

John W Poindexter

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

J. W. POINDEXTER.

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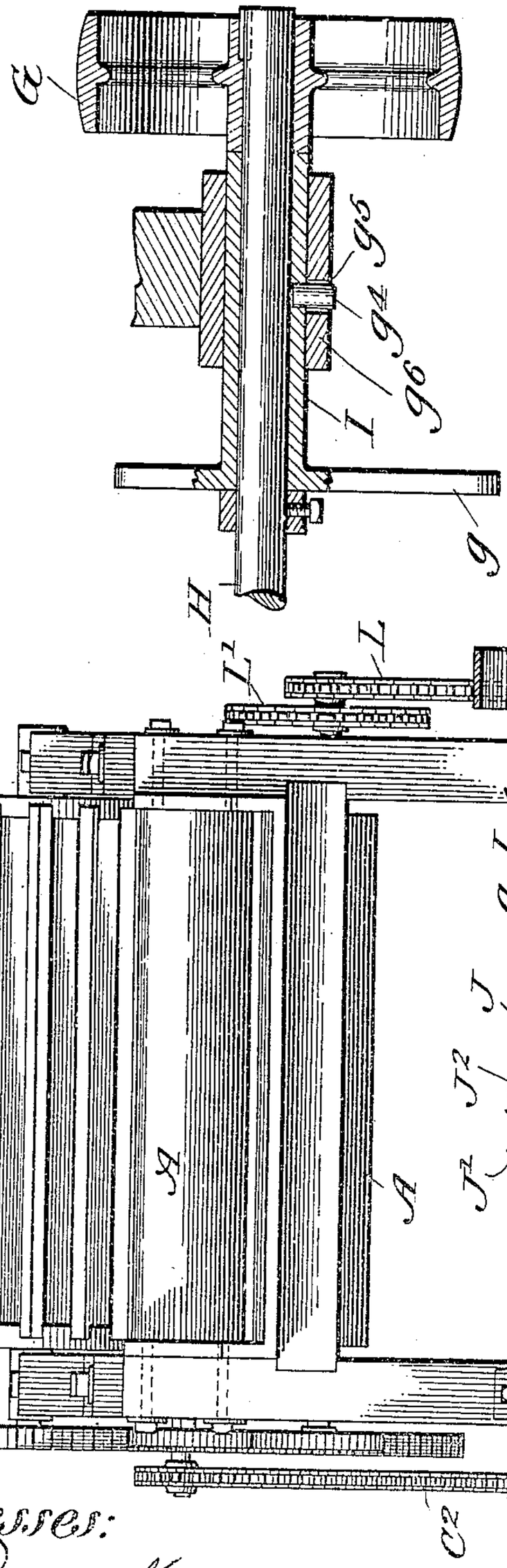

Fig. 5.

Fig. 4.

Witnesses:

Chester M Jewett

Inventor,

Jno. Poindexter

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN W. POINDEXTER, OF CYNTHIANA, KENTUCKY, ASSIGNOR TO KENTUCKY HEMP BRAKE CO., OF CYNTHIANA, KENTUCKY.

BREAKING AND SCUTCHING MACHINE.

962,783. Specification of Letters Patent. **Patented June 28, 1910.**

Application filed June 17, 1907. Serial No. 379,317.

To all whom it may concern:

Be it known that I, JOHN W. POINDEXTER, a citizen of the United States, residing at Cynthiana, county of Harrison, and State of Kentucky, have invented certain new and useful Improvements in Breaking and Scutching Machines, of which the following is a specification.

My invention relates to machines for breaking and machines for scutching and cleaning fibrous materials, such as hemp, flax, ramie or other fiber yielding plants after the plants have been properly treated, as by field retting or by other processes ordinarily employed.

The object of my invention is to enable the breaking and scutching of such materials to be performed by other than manual labor and to provide a machine for performing such operations, that will not involve the liability of damage either to the fibrous material or to the machine itself while operating on such material.

My invention consists in the combination of feed rolls and breaking cylinders normally rotating outwardly, manually actuated and controlled means for reversing the rotation of the feed rolls and breaking cylinders to feed material into the machine and break the stalks thereof, cleaning or scutching mechanism adapted to receive the material from the breaking cylinders while in their reversed rotation, the feed rolls and the breaking cylinders being adapted to resume their normal direction of rotation automatically, through cessation of manual actuation of said manually actuated and controlled means and thereby withdraw the material from the machine, and the cleaning or scutching mechanism being adapted to perform a secondary operation on the material during its withdrawal from the machine.

My invention also consists in the parts and in the details of construction and arrangement of parts as will hereinafter be more fully described and claimed.

In the drawings: Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a plan view of the machine. Fig. 4 is a front elevation of the same. Fig. 5 is a sectional view, illustrating the construction of part of the device for laterally moving the power shaft.

As above stated, and as is well known, the operation of breaking and cleaning or scutching hemp by hand is, owing to its extreme length, an exceedingly laborious one, with the result that the operation is not only frequently not thoroughly completed, but the hemp itself is injured, while the time consumed in the operation adds considerable to the expense of preparing hemp fiber for carding and weaving. My invention is adapted to overcome all of these difficulties by enabling the operator to break the hemp stalks and thoroughly scutch or clean their fiber by merely inserting a bunch of them into the hopper of the machine, operating the machine to cause it to draw them into it to the extent of about half of the length of the stalks, and then to expel them, upon which the operator may reverse the bunch of stalks and operate the machine to cause it to act upon the remaining portions of the stalks in the same manner, as it did upon the portions of the stalks at first inserted into the machine, operating to break the stalks while they are being drawn into the machine and operating to scutch or clean them both during the action of drawing them in and during the action of expelling them.

The mechanism for rotating the feed rolls and breaking cylinders is so constructed that these rolls and cylinders are normally given a rotation by means of which they are normally adapted to expel material from the machine, rather than to draw it into the machine, and are rotated to draw material into the machine only when caused to do so through the action of mechanism adapted to be operated manually and to be under the complete control of the operator of the machine. This machine for rotating the feed rolls and breaking cylinders includes gearing adapted to transmit power by frictional contact whereby any obstruction of their rotation, which would be liable to derange or injure the mechanism or damage the fiber operated upon, will only result in the slipping of the surfaces in frictional contact, thus allowing the obstructed parts to remain stationary and relieved from strain which would otherwise be imposed.

As I prefer to construct my improved machine for the purpose of operating upon hemp, and as illustrated in the drawings, A A represents the feed rolls. The break-

ing cylinders are represented at B B and are provided with blades extending parallel with their axes at intervals around their convex surfaces. The blades on one cylinder mesh with the blades on the other cylinder and serve the purpose of breaking the stalks when they pass inwardly of the machine, and also serve the purpose of completing the secondary cleaning or scutching operation on the fiber after the hurds have been removed therefrom, and when the fiber is being withdrawn from the machine. The feeding of the stalks into the machine and the withdrawal of the fiber therefrom is accomplished by the feed rolls, and one of these rolls is journaled so that it is yieldable with respect to the other, in order to provide an adjustment for slight variations of thickness of the bunch of stalks while feeding into the machine, as well as to cause the rolls to grip the fiber tightly during the process of withdrawal of the material from the machine.

The cleaning aprons are represented at C C, being positioned adjacent to the breaking cylinders and being adapted to receive the broken stalks from the breaking cylinders as they are being fed into the machine. These cleaning aprons pass the stalks to the whipping rolls D D D, which are mounted on shafts journaled transversely of the machine, and, as here illustrated, are each provided with four blades extending parallel to their shafts. Each of the aprons C C consists in a series of slats, extending transversely of the machine, mounted on endless belts passing around two pulleys or rollers, which are journaled on shafts journaled transversely of the machine. These aprons are so mounted that the upper one passing from one of its rollers to the other in its lower path, and the lower one passing from one of its rollers to the other in its upper path, are brought closely adjacent to each other, and it is between these adjacent parts of the aprons that the material passes as it emerges from between the breaking cylinders.

The entire machine receives its motion from a suitable source of power through the main shaft H and driving pulley G rigidly mounted thereon. This main power shaft H is journaled transversely of the machine outside the frame at the lower part near its forward end. Near the middle of the machine, spaced from each other, two bevel transmission wheels J and J^1, with their bevel or conical surfaces smooth, are rigidly mounted on the main power shaft H, each with its bevel or conical surface inclining toward that of the other. Another shaft K is journaled longitudinally of the machine about midway between the two transmission wheels J and J^1, and has rigidly mounted on it a third transmission wheel J^2, which is substantially like the transmission wheels J and J^1. However, the transmission wheels J and J^1 on the main power shaft H are spaced such a distance apart that only one of them can engage its bevel or conical surface with the bevel or conical surface of the wheel J^2 at one time. This shaft K extends only a short distance rearwardly of the machine and has, on the other side of its bearing, a toothed bevel pinion K^1, which is in mesh with another similar bevel pinion K^2, rigidly mounted on a shaft K^3 journaled transversely of the machine and extending laterally outside the frame thereof, where it has a sprocket wheel rigidly mounted upon it. This shaft K^3 occupies a position substantially vertically under the feed rolls A A and another sprocket wheel is mounted on the shaft of the lower feed roll A in alinement with the sprocket on the shaft K^3, and around these sprockets a sprocket chain L passes to transmit power to the feed rolls. The lower feed roll A turns the upper feed roll due to the contact of the upper roll therewith, or, when the material is being fed by them into the machine, by the contact of the material with the respective surfaces of the feed rolls.

As illustrated, the feed rolls are provided with corrugations running parallel to their axes, so that they are able to more firmly grip the material upon which they are operating. Another sprocket wheel is mounted on the shaft of the lower feed roll and a sprocket wheel is mounted on the shaft of the lower breaking cylinder B, while around these sprocket wheels a sprocket chain L^1 passes to transmit power to the breaking cylinders. The upper breaking cylinder is driven by the lower one as a result of its blades meshing with the blades of the lower cylinder.

From the foregoing description, it will be seen that the power for the rotation of the feed rolls and the breaking cylinders must be transmitted by the frictional engagement of the bevel or conical transmission wheels J and J^2 or J^1 and J^2. In consequence of this, should the feed rolls or the breaking cylinders receive any excessive thickness of material between them, or otherwise be obstructed, to such an extent as would result in injury to some part of the machine due to the strain imposed, the contacting surfaces of the transmission wheels would slip over each other and allow the feed rolls or breaking cylinders to remain stationary, without damage.

The main power shaft H is rotated toward the rear of the machine and the wheels J and J^1 are so mounted thereon that normally the wheel J^1 will be in engagement with the wheel J^2, in consequence of which the feed rolls and the breaking cylinders will be rotated in such direction that they

will expel material from the machine rather than draw it into the machine. In order to allow the other transmission wheel J^1 to be brought into contact with the wheel J^2, and consequently draw the wheel J out of contact with the wheel J^2 and thus reverse the rotation of the feed rolls and breaking cylinders, so that they will draw the material into the machine, the shaft H is mounted so that it may have a slight movement laterally of the machine and parallel to its length, and a mechanism is provided for shifting this shaft laterally of the machine manually, so that the rotation of the feed rolls and breaking cylinders may be constantly under the control of the operator. As illustrated, this mechanism consists in a bearing sleeve I, capable of movement laterally of the machine. In this bearing sleeve I the shaft H is journaled, with respect to which bearing sleeve the shaft is immovable longitudinally, the hub of the pulley G contacting with one end of this bearing sleeve, and a collar rigidly mounted on the shaft contacting with the other end. This bearing sleeve I is mounted in a block g^6, secured to the frame of the machine and thereby forming a support for it, and the bearing sleeve I is rotatable, as well as capable of movement laterally of the machine in the block g^6. This block g^6 has a slot g^5 in it extending spirally of it, the slot having its upper end nearer the wheel J^2 than its lower end is. A pin g^4 is rigidly mounted in the bearing sleeve I and extends into this spirally extending slot g^5 in the block g^6. The parts are so proportioned that when the pin g^4 is at the upper end of the slot g^5 the wheel J will be in contact with, and the wheel J^1 out of contact with, the wheel J^2, and if the bearing sleeve I be rotated sufficiently to bring the pin g^4 to the lower end of the slot g^5, the wheel J^1 will be brought into contact with the wheel J^2 and the wheel J out of contact therewith. The bearing sleeve I is provided with a forwardly extending arm g and a treadle g^1 is pivoted to the frame of the machine and extends forwardly below the arm g and is connected to the arm by means of a link g^2, so that when the treadle g^1 is depressed it will draw the arm g downward, rotating the bearing sleeve I to draw its pin g^4 downward in the slot g^5, and thus move the shaft H laterally of the machine, and change the relations existing between the transmission wheels J, J^1 and J^2, as above noted. The bearing sleeve I also has an arm extending rearwardly, and a tension spring g^3 is secured to this arm and to the frame of the machine in such a manner that the spring will act to maintain the pin g^4 in the upper end of the slot g^5 and consequently maintain the wheel J in contact with the wheel J^2. Thus, the automatic and normal action of the mechanism for controlling the direction of rotation of the feed rolls and breaking cylinders is to cause these rolls and cylinders to rotate in the direction for expelling material from the machine, as above noted, and the rolls and cylinders can be rotated in the opposite direction to feed material into the machine only by depressing the treadle g^1, which is accomplished manually by placing the foot thereon during the action of feeding a bunch of the material into the machine, the material being placed in a suitable hopper mounted on the frame of the machine directly to the rear of the feed rolls and above the controlling mechanism just described.

While the feed rolls and breaking cylinders are thus capable of being rotated in either direction, and are controlled by mechanism adapted to be manually actuated, the cleaning aprons C C and the whipping rolls D D D are driven continuously, during the operation of the machine, in one direction, this direction being such as tends to draw the material into the machine from the forward end. The cleaning aprons C C are driven by means of a sprocket wheel C^1 rigidly mounted on the main power shaft H, and a sprocket chain C^2 passing around this sprocket wheel C^1 and around another sprocket wheel on the shaft of the forward roller of the upper cleaning apron C. The lower cleaning apron C is driven by means of a cross belt passing around a pulley on the shaft of the forward roller of the upper cleaning apron C and around a pulley on the shaft of the rearward roller of the lower cleaning apron C. Thus, the adjacent parts of the two aprons move in the same direction toward the rear of the machine. As illustrated, two of the whipping rolls D D are placed in horizontal alinement below, and the third whipping roll D is placed above and about midway between the two lower ones. The forward lower whipping roll D is driven by means of a belt passing around a pulley on its shaft and around a pulley on the shaft of the rear roller of the lower cleaning apron C. The rear lower whipping roll D is driven by a cross belt passing around a pulley on the shaft and around a pulley on the shaft of the rear roller of the upper cleaning apron C, while the upper whipping roll D is driven by means of a belt passing around a pulley on its shaft and around another pulley on the shaft of the rear roller of the upper cleaning apron C. Thus, the lower whipping rolls D D are rotated in direction opposite to that of the rotation of the upper whipping roll, so that their parts coming into contact with the material are moving rearwardly of the machine. It will be noted that, as the parts are proportioned, the speed of rotation of the cleaning aprons C C and of the whip-

ping rolls D D D will be considerably greater than the speed of rotation of the feed rolls A A and breaking cylinders B B.

Constructed, and with its parts operating, as above described, the machine is used in treating hemp by introducing a bunch of the hemp stalks endwise into the hopper with their ends adjacent to the feed rolls A A which are revolving outwardly, then depressing the treadle g^1 with the foot and inserting the stalks between the feed rolls upon which they will draw the stalks inwardly of the machine, passing the ends between the breaking cylinders B B, the intermeshing blades of which will effectually break the hurds of the stalks and loosen them from the fiber. The ends of the stalks with their hurds thus broken and loosened, emerging from between the breaking cylinders, pass between the adjacent rearwardly moving surfaces of the cleaning aprons C C, which are moving much faster than the advancing stalks and bringing their transverse slats into contact with the bulky and hard parts or hurds of the stalks, effectually detaching them from the fibers which are constrained to move only with the speed of the feed rolls between which the stalks are held, and carrying these hurds toward the rear of the machine and discharging them therefrom. Then, still advancing, and with the fibers strained to the tension desired to keep them straight by the action of the cleaning aprons, these fibers come into contact with the rapidly revolving whipping rolls, which effectually remove particles which were not removed by the action of the cleaning aprons C C and whipping and working the fiber to remove the hard substance from it. In addition to their direct action on the fibers, these whipping rolls D D D have a fan like action and create a strong air current rearwardly of the machine, adapted to effectually carry the detached particles of hurd away from the fiber. When the stalks have passed into the machine as far as it is advisable to allow them to pass, in view of the necessity of retaining the hold upon them with the feed rolls A A, the operator removes his foot from the treadle g^1 and the spring g^3 acts to automatically remove the wheel J^1 from contact with the wheel J^2 and to bring the wheel J into contact therewith, driving the feed rolls A A and the breaking cylinders B B in their normal direction and expelling the material from the machine into the hopper again.

The functions which my improved breaking and scutching machine possess by virtue of the above features of its construction are highly desirable in view of the fact that the material handled is extremely long and, therefore, unwieldy, requiring a considerable part of the operator's attention in merely handling it to insert it into the machine, while the machine for performing the necessary operations upon such material is necessarily large, and powerful in its operation, so that, unless some precaution is provided against such an occurrence, the operator may be injured by accidental contact of some part of his person with the feed rolls of the machine, which would have the tendency to draw his body into the machine. With the feed rolls of the machine normally rotating outwardly, and only rotating inwardly upon the actuation of the controlling mechanism by the operator, this danger is only present when the attention of the operator is directed to it, and reduces the danger of injury of the operator to a minimum. Also, if the feed rolls rotate inwardly while the bunch of stalks is being placed in the hopper, preliminary to their being inserted between the rolls, some projecting stalks might be engaged by the feed rolls and draw them in, to the exclusion of the other stalks, so that the bunch of stalks would be disarranged and the proper and rapid feeding of the machine interfered with. By causing the feed rolls to normally rotate outwardly and making their inward rotation dependent upon the actuation of their controlling mechanism by the operator, this difficulty is also avoided. Furthermore, if the feed rolls and breaking cylinders operated continuously inwardly without any provision for either a normal or temporary outward rotation, such operation would involve the passage of the material completely through the machine. This passage of the material completely through the machine, as will be seen, is impracticable, inasmuch as when the material has passed, successively, the breaking cylinder and the cleaning or scutching mechanism, it has been reduced to the cleaned fiber, which has insufficient stiffness to enable it to be passed onward through the machine without causing the fibers to become entangled and deranged to such an extent that they would be rendered entirely useless for the purposes for which they are intended.

By causing the cleaning or scutching elements to act upon the material in one continuous direction inwardly of the machine and making their operating mechanism independent of the controlling mechanism peculiar to the feed rolls and breaking cylinders, and with a rapidity considerably greater than the rapidity of the feed rolls and breaking cylinders, a tension is exerted on the fibers of the material, both while it is being drawn into the machine and while it is being expelled therefrom, this tension, as will be readily understood, being considerably greater while the material is being expelled, or during the secondary cleaning and scutching operation. The result of this constant tension on the fibers is to avoid any

possibility of entangling them and to deliver them from the machine in a perfectly smooth and unruffled condition, as well as thoroughly cleaned and uninjured from excessive strains on individual fibers, and other distortions of the fibers, such as would be caused if the fibers were allowed to become loose while under the action of the scutching or cleaning mechanism.

By mounting the feed rolls so that one of them is yieldable with respect to the other, they are not only adapted to adjust themselves automatically to slight variations in the thickness of the bunch of stalks during the initial insertion of the bunch into the machine, but are also adapted to firmly engage with the cleaned fiber, which constitutes one end of the bunch after that end has been operated upon by the machine, and which must form the medium for controlling the bunch of stalks after they have been reversed and their other ends passed into the machine between the breaking rolls and delivered to the action of the cleaning or scutching mechanism. It will thus be seen that all operations to which the stalks or fibers are subjected in my improved breaking and scutching machine involve only a tension on the fibers, whereby entanglement and injury of the fibers is at all times avoided. Then the bunch of material is reversed and the opposite end inserted between the feed rolls A A, the treadle g^1 is depressed again and this end of the stalks is carried between the breaking cylinders B B and broken, and between the cleaning aprons C C to the whipping rolls D D D and cleaned, the bunch of material being prevented from passing entirely through the machine, under the action of the cleaning aprons and whipping rolls, by being held between the feed rolls A A, which, being adjustable, will hold the parts of the stalks which have been reduced to cleaned fiber as effectually as they will the entire stalk before it has been so reduced, and thus the material is at all times under the complete control of the operator, and either end of the bunch may be passed into the machine just as far as is dictated by the experience of the operator by the simple action of depressing the treadle g^1 and immediately withdrawn by merely allowing the treadle to rise.

The entire action of the machine on the fiber results, not only in the breaking and removing of the hurds or woody substance of the material, but to increase the flexibility of the fiber without injuring it. This operation is provided by the whipping rolls, the blades of which strike the fiber in very rapid succession, and is also provided by the cleaning aprons, especially when the fiber is being withdrawn from the machine and is moving in the direction opposite to that in which the adjacent parts of the cleaning aprons are moving. The transverse slats on the cleaning aprons thus coming into contact with the fiber continue the process of rendering it flexible, as well as to render the fibers parallel to each other and avoid liability of tangling when they pass between the breaking cylinders as they are expelled from the machine. The intermeshing blades of the breaking cylinders operate on the fiber during the scutching operation to increase its flexibility and render it more suitable for use in the same manner as the blades of the whipping rolls did, but without such great rapidity, and when the fiber finally passes between the feed rolls on its outward movement, it is delivered in a smooth condition, with the fibers all running parallel, and in the best shape for handling in the subsequent processes to which it is to be subjected. The whipping rolls create an air current as has hereinbefore been stated, but it should also be stated that this air current is not depended upon for detaching the particles from the fibers or for maintaining the fibers in their proper condition or for improving their condition other than to remove the particles after they are detached.

While I have shown and described specifically a machine designed to operate under certain conditions and for operation upon hemp, it will be understood that my invention is susceptible to considerable modification to adapt it for use under slightly varying conditions and for operating upon other materials of a similar nature, such as those hereinbefore referred to, and in view of this I do not wish to be understood as limiting myself to the precise illustration and description contained herein, but

What I claim as new and desire to secure by Letters Patent is:

1. In a breaking and scutching machine, the combination of feed rolls and breaking cylinders normally rotating outwardly, manually actuated and controlled mechanism whereby the feed rolls and breaking cylinders are reversed to feed the material into the machine and break the stalks, cleaning aprons adapted to receive the fiber from the breaking cylinders, whipping rolls adapted to whip the fiber after it has passed the cleaning aprons, said manually actuated and controlled mechanism being adapted, when the manual actuation is removed, to automatically cause the feed rolls and breaking cylinders to resume their normal direction of rotation, expelling the material from the machine, and the material being subjected to a secondary operation when thus expelled, substantially as and for the purposes herein set forth.

2. In a breaking and scutching machine, a pair of feed rolls journaled transversely of the machine, forwardly thereof, a pair of breaking cylinders journaled parallel to

the feed rolls, adjacent to and to the rear thereof, one of the feed rolls driving the other feed roll and one of the breaking cylinders driving the other breaking cylinder, the driving breaking cylinder being driven by the driving feed roll, blades on the breaking cylinders intermeshing with each other, a lower cleaning apron and an upper cleaning apron adjacent to and to the rear of the breaking cylinders, the lower cleaning apron passing around two rollers journaled parallel to the breaking cylinders and the upper cleaning apron passing around two other rollers journaled parallel to the breaking cylinders, whipping rolls journaled transversely of the machine to the rear of the cleaning aprons, a main power shaft journaled transversely of the machine, means for transmitting power from the main power shaft to the cleaning aprons and breaking cylinders and means for transmitting power from the main power shaft to the driving feed roll, means for operating said main power shaft manually to reverse the rotation of the feed rolls and breaking cylinders, the normal direction of rotation of the feed rolls and breaking cylinders being in such direction as to withdraw material from the cleaning aprons and whipping rolls, substantially as and for the purposes herein set forth.

3. In a breaking and scutching machine, feed rolls and breaking cylinders, means for manually controlling the direction of rotation thereof, whipping rolls, cleaning aprons intermediate of the breaking cylinders and the whipping rolls, the cleaning aprons being carried on rollers, and slats on the cleaning aprons extending transversely of the machine, the slats of one cleaning apron being adapted to pass adjacent to the slats of the other cleaning apron, the feed rolls being adapted to feed material between the breaking cylinders and between the adjacent slats of the cleaning aprons, the whipping rolls being adapted to operate on the material when it emerges from between the slats of the cleaning aprons, the normal direction of rotation of the feed rolls and breaking cylinders being in the direction to withdraw material from between the slats of the cleaning aprons, said feed rolls and breaking cylinders being adapted to feed material between adjacent slats of the cleaning aprons only when reversed under the action of said means for manually controlling the direction of their rotation, substantially as and for the purposes herein set forth.

4. In a breaking and scutching machine, feed rolls, breaking cylinders and cleaning aprons, slats on the cleaning aprons extending transversely of the machine, rollers to carry the cleaning aprons, means for rotating the feed rolls and breaking cylinders and means for rotating the rollers on which the cleaning aprons are carried, whereby the slats thereon are carried longitudinally away from the breaking cylinders and move faster than the peripheries of the breaking cylinders, and means for manually controlling the direction of rotation of the feed rolls and breaking cylinders to feed material to the cleaning aprons, spring actuated means for controlling the direction of rotation of the feed rolls and breaking cylinders to withdraw material from said cleaning apron, the normal direction of rotation of the feed rolls and breaking cylinders being such as to withdraw material from the cleaning aprons and expel it from the machine, substantially as and for the purposes herein set forth.

5. In a breaking and scutching machine, feed rolls journaled transversely of the machine, breaking cylinders adjacent to and to the rear of the feed rolls, journaled parallel thereto, cleaning or scutching mechanism to the rear of the breaking cylinders, a main power shaft journaled transversely of the machine, forwardly thereof, means for transmitting power from the main power shaft to the cleaning or scutching mechanism, two transmission wheels on the main power shaft, a third transmission wheel adapted to engage with either of the two transmission wheels on the main power shaft and means for transmitting power from said third transmission wheel to the feed rolls and breaking cylinders, a bearing sleeve for the main power shaft immovable longitudinally thereof but movable laterally of the machine, whereby the main power shaft may be moved laterally of the machine to alternately bring its transmission wheels into contact with said third transmission wheel and impart direct and reverse rotation to the feed rolls and breaking cylinders, and a treadle operatively connected with the slidable bearing sleeve of the main power shaft, the treadle being adapted to be manually actuated, whereby the rotation of the feed rolls and breaking cylinders may be manually controlled to draw material into the machine and deliver it to the cleaning or scutching mechanism, said treadle being spring actuated to control the rotation of said feed rolls and breaking cylinders to expel material from the machine, the direction of rotation of the feed rolls and breaking cylinders, except when reversed by the manual actuation of the treadle, being in the direction to expel material from the machine, substantially as and for the purposes herein set forth.

6. In a breaking and scutching machine, the combination of breaking cylinders normally rotating outwardly, manually actuated and controlled mechanism whereby the breaking cylinders are reversed to feed the material into the machine and break the

stalks, cleaning aprons adapted to receive the fiber from the breaking cylinders, whipping rolls adapted to whip the fiber after it has passed the cleaning aprons, said manually actuated and controlled mechanism being adapted, when the manual actuation is removed, to automatically cause the breaking cylinders to resume their normal direction of rotation, expelling the material from the machine, and the material being subjected to a secondary operation when thus expelled, substantially as and for the purposes herein set forth.

JOHN W. POINDEXTER.

Witnesses:
S. RENAKER,
CHESTER M. JEWETT.