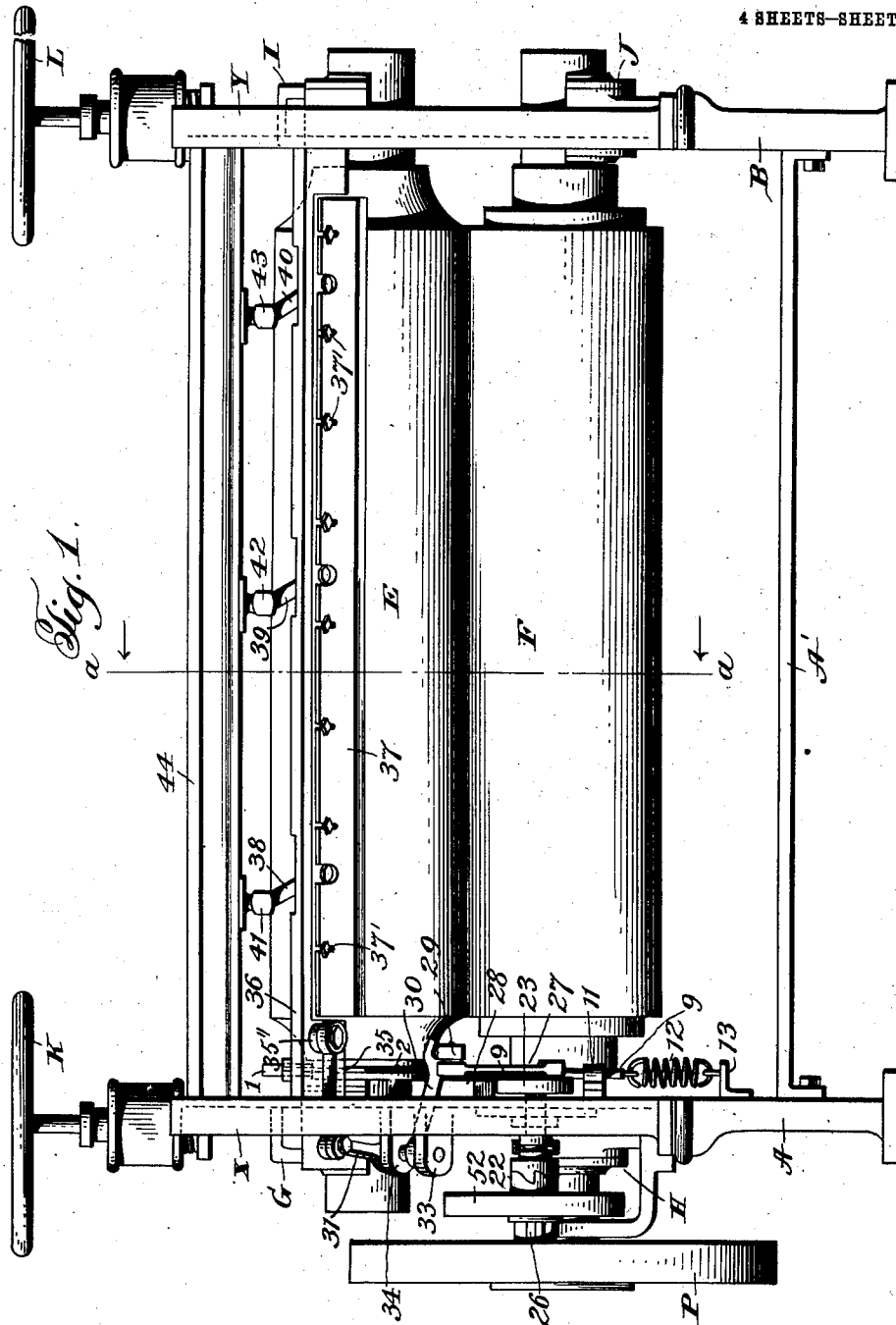


1,063,606.

4 SHEETS—SHEET 1.



Jas. Hutchinson:
E. Greenwald

Garret Schenck Jr

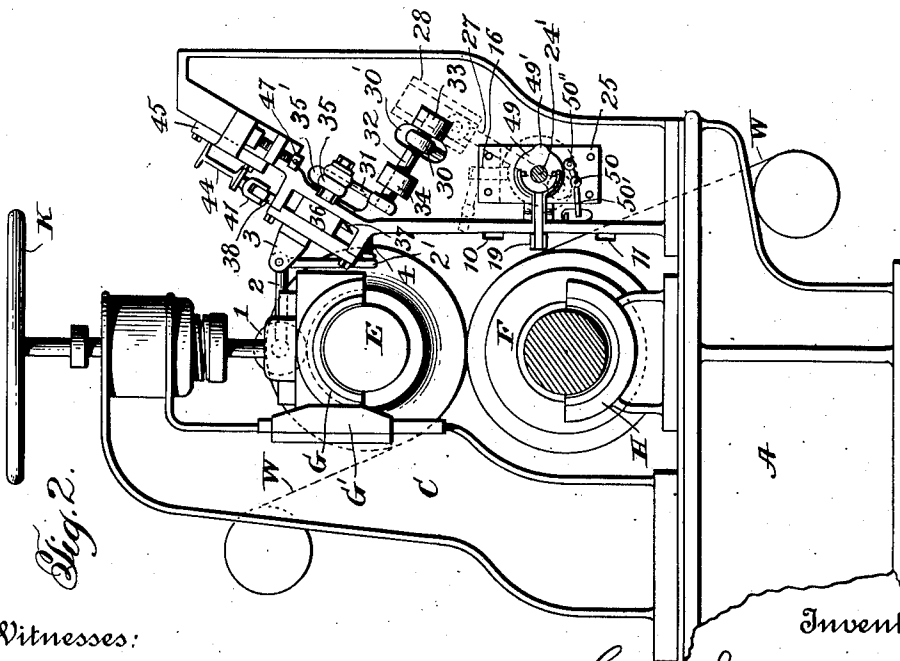
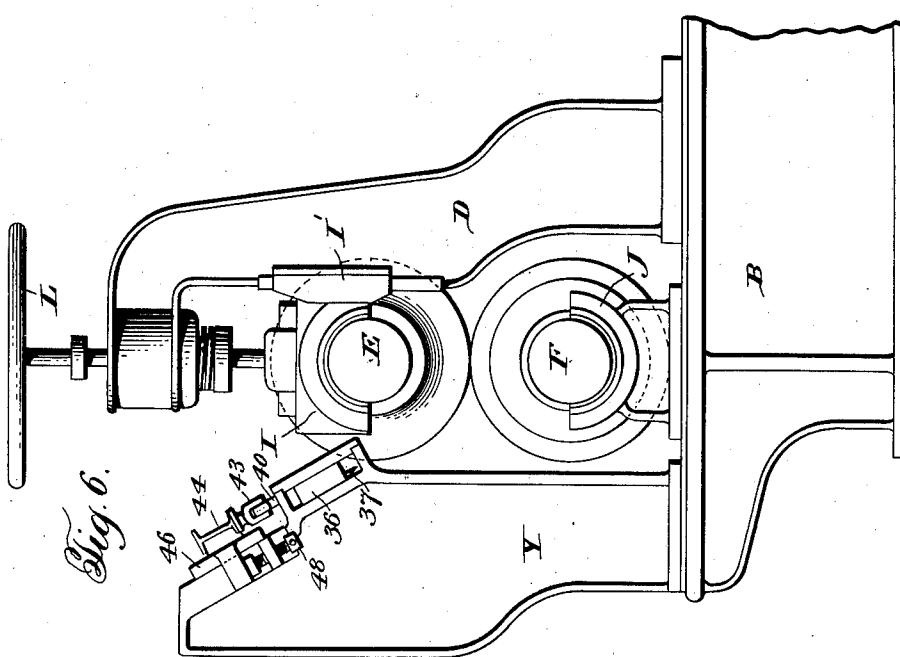
By Inter-Human Nature & Co. Attorneys.

G. SCHENCK, JR.
 DEVICE FOR REMOVING PULP LAPS.
 APPLICATION FILED APR. 8, 1912.

1,063,606.

Patented June 3, 1913.

4 SHEETS—SHEET 2.



Witnesses:

Jas. Hutchinson.
 E. L. Greenwald.

Inventor:

Garet Schenck Jr.

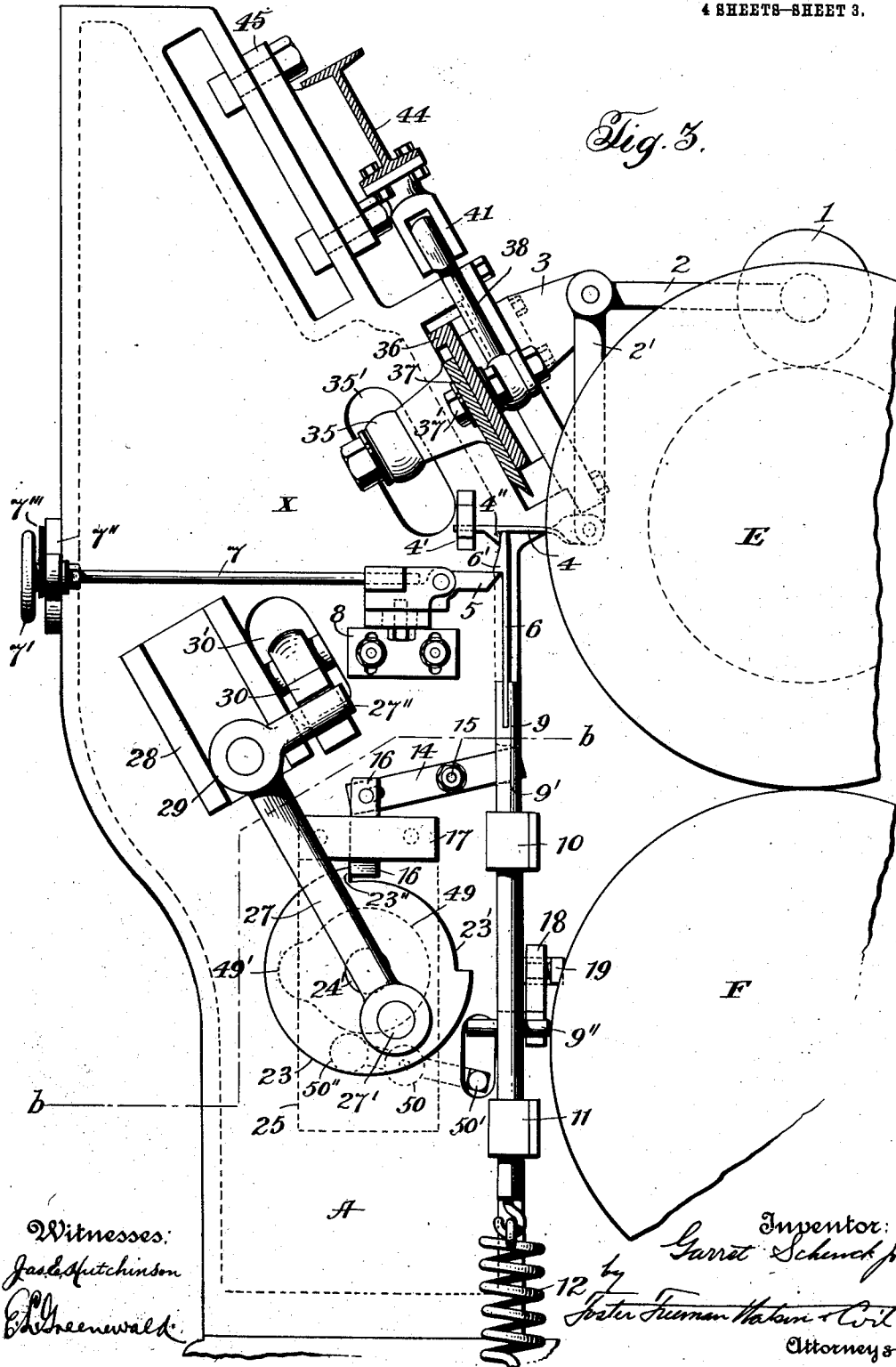
By Foster Furman Watson & Co. Attorneys.

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1,063,606.

Patented June 3, 1913.

4 SHEETS—SHEET 3.



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1,063,606.

Patented June 3, 1913.

4 SHEETS—SHEET 4.

Fig. 4.

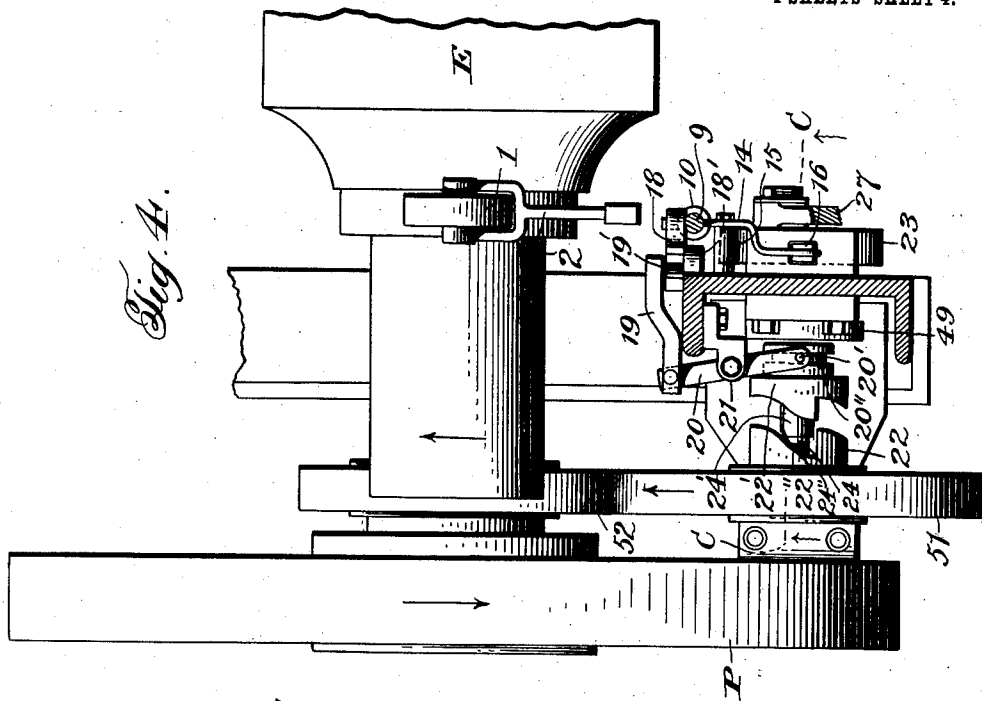
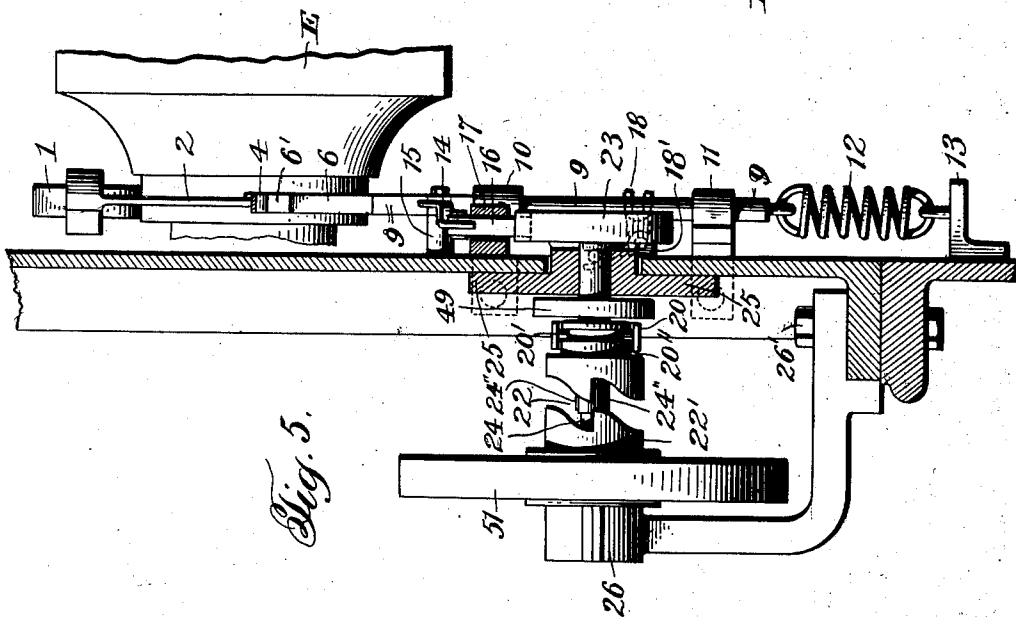


Fig. 5.



Witnesses:

Jas. Hutchinson:
 E. L. Greenwald.

Inventor:

Garet Schenck Jr.

By Foster Furman Watson & Co. Attorneys.

UNITED STATES PATENT OFFICE.

GARRET SCHENCK, JR., OF MILLINOCKET, MAINE, ASSIGNOR TO GREAT NORTHERN PAPER COMPANY, OF MILLINOCKET, MAINE, A CORPORATION OF MAINE.

DEVICE FOR REMOVING PULP LAPS.

1,063,606.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed April 8, 1912. Serial No. 689,253.

To all whom it may concern:

Be it known that I, GARRET SCHENCK, JR., a citizen of the United States, residing at Millinocket, county of Penobscot, State of Maine, have invented certain new and useful Improvements in Devices for Removing Pulp Laps, of which the following is a specification.

This invention relates to pulp machines generally known as ground wood and sulfite wet machines and more particularly to an attachment for such machines for automatically severing and removing the stock in the form of sheets from the receiving roll on the machine when a predetermined thickness of stock has been collected on said receiving roll.

One of the objects of this invention is to provide an improved attachment which will operate automatically and efficiently and which can be applied to most of said machines now in common use.

Other objects and the novel features of the invention will be apparent from the following description taken in connection with the drawings, in which:

Figure 1 is a front elevation of a machine embodying my improved attachment. Fig. 2 is a left side elevation of the machine shown in Fig. 1 with parts removed. Fig. 3 is a vertical sectional view taken along the line *a-a* of Fig. 1 looking in the direction of the arrows, with parts removed and parts shown in elevation. Fig. 4 is a horizontal sectional view taken along the line *b-b* of Fig. 3 with parts broken away. Fig. 5 is a vertical sectional view taken along the line *c-c* of Fig. 4 looking in the direction of the arrows showing parts in elevation. Fig. 6 is a right side elevation of the machine with parts removed and showing the attachment applied thereto.

The machine shown in the drawings is provided with main frame members or feet *A* and *B* and mounted on each of these feet respectively are the upper frames *C* and *D*. The members *A* and *B* may be suitably braced by rods *A'* or otherwise to provide a stable and rigid base frame for the mechanism carried thereby. The machine is provided with the usual felt roll *F* and collecting or receiving roll *E*. The collecting roll *E* is mounted in vertically movable bearings *G* and *I* which slide in guides *G'* and *I'*

carried by the frame members *C* and *D* respectively. The felt roll *F* is mounted on stationary journal bearings *H* and *J* which are carried by the frame members *A* and *B* respectively. The adjustment of the bearings *G* and *I* is effected by means of the wheels *K* and *L* mounted at the upper extremity of the frame members *C* and *D*.

The pulp stock is fed to the rolls by the belt *W* which may be of any approved construction. The pulp conveyed on the top of the belt *W* passes between the rolls and collects on the upper press roll *E* and as the pulp collects on this roll the latter gradually rises due to the increase in thickness of the stock, sliding freely in the guides *G'* and *I'*. The lower roll or felt roll *F* has its shaft connected to a pulley *P* which may be driven from any suitable source of power. The collecting roll *E* is driven by frictional contact with the felt roll *F*.

As thus far described the machine is substantially of the form now in general use.

In the present invention an improved attachment is applied to the machine for the purpose of automatically severing the stock collected on the receiving roll *E* when a predetermined thickness of stock has been collected thereon. The severing means or knife is normally out of contact with the roll and inoperative, but when the stock attains a predetermined thickness the knife is automatically set into operation severing the stock on the roll and the material is then conveyed to any desired point by means of a belt at the discharge side of the roll.

The attachment has for its supporting means the vertically extending frame members *X* and *Y* which are bolted to the frame members or supports *A* and *B* on the opposite sides of the roll from the members *C* and *D*. Bearing on the outer end of the receiving or collecting roll *E* is a tripping roll *1* which is pivoted to an adjustable support *3* on the frame *X* by means of a lever *2*. Rigidly secured to the lever *2* and extending at right angles thereto is a lever *2'*, which has rigidly connected to its lower end a tripping lever *4*. The lever *2'* is of a bell crank construction and operates as a rigid member and the lever *4* bolted thereto moves in unison with the lever *2'*, the movement of which is governed by the thickness of the stock on the roll *E* which raises the tripping

roll 1. The outer end of the tripping lever 4 engages in a guide 4' attached to the frame X. Intermediate the ends of the lever 4 I have provided a tooth 4'' which engages the upper end of a tripping spring 6. The tripping spring 6 is also provided with a tooth 6' which is engaged by a tripping pawl 5. The tripping pawl 5 is the means of determining the thickness of the stock on the roll which is necessary to trip the trip spring 6. The tripping pawl is supported on the side of the frame member X by means of an adjustable angle 8 and the adjustment of the tripping pawl is effected by means of the rod or adjusting screw 7, thereby adjusting the pawl 5 horizontally. The adjusting rod 7 may be provided at its outer end by a hand wheel 7' and a scale and indicating pointer 7'' and 7'''. The scale and indicator may be calibrated so that the operator can set the trips to operate at any thickness desired.

The lower end of the trip spring 6 is rigidly secured to a vertical operating rod 9, and guided on the frame member X by bearings 10 and 11, see Fig. 3. The lower end of the operating rod has connected thereto a tension spring 12 the lower end of which spring is connected to the frame A by means of the bracket 13 as indicated in Fig. 1.

The operating rod 9 is provided with a slot 9' near its upper end which slot extends through the rod 9 as shown in dotted lines in Fig. 3 and the outer end of a pivot lever 14 pivoted at the point 15 on the frame member X extends into the slot 9' so as to move with the rod 9. At its other end the pivot lever 14 loosely and pivotally supports a vertical movable locking pin or stop 16 the free end of which passes through and is guided by a guide bracket 17 attached to the frame X. The free end of the locking pin 16 is thus prevented from lateral movement and the end projecting below the bracket 17 engages in a recess 23' of the crank disk 23 to be described. The operating rod 9 also has a transverse pin 9'' rigidly secured to the rod. The pin 9'' extends through the rod and projects from opposite sides thereof. On one side of the rod the said pin engages in the forked end of one arm of a bell crank clutch lever 18 which is pivoted on the frame X at 18'. The other forked arm of the bell crank lever engages a pin 19' carried by a yoke lever 19.

The yoke lever 19 is pivotally connected to a forked yoke 20 which is intermediate its ends pivoted on the frame by means of a support 21. The yoke 20 is provided with inwardly extending pins 20' which engage in a groove 20'' of one member 22' of a clutch 22. The driving gear 51 is keyed to a driving shaft 24. Other members to be driven by the gear are keyed to a quill shaft 24' inside of which one end of the drive shaft 24 runs. The clutch member 22' slides

on a key 24'' on the quill shaft and when in mesh with member 22'' drives the quill shaft thereby operating the machine.

For actuating the cutting mechanism I have provided a crank disk 23 rigidly connected to the shaft 24'. The crank disk 23 has a cut-away portion 23' which affords a tooth 23'', against which the stop pin 16 may engage when the machine is driving in the direction indicated by the arrow. The quill shaft 24' is supported for rotation in the frame member by means of the inner bearing 25 and the outer end thereof is supported by telescoping over one end of the drive shaft 24 the other end of which is mounted on the out-bored bearing 26 which is bolted to the frame members X and A by means of bolts 26'.

The knife-operating means comprises a crank or connecting rod 27 suitably connected to the crank disk 23 by means of a crank pin 27'. The opposite end of the rod 27 is in the form of a cross head 29 which moves in the cross head guide 28. The rod 27 has rigidly connected thereto a right angled extension 27'' which engages in the forked end of a knife-operating lever 30. As will be seen from Fig. 3 the said lever extends through an opening 30' in the frame X and as shown in Fig. 2 is connected at its end on the opposite side to a lever shaft 32. The said lever shaft is journaled in the outer side of the frame by means of bearings 33 and 34 and carries adjacent the other end another knife-operating lever 31 which is set at an angle to the forked operating lever 30 and has connected thereto another knife lever 35. The said knife lever 35 extends through an opening 35' in the frame member X and is connected to the knife 37 by means of a stud 35''.

The knife 37 is adjustably mounted on a knife guide 36 by means of adjusting bolts 37'. The knife guide 36 is flexibly or loosely connected by means of the knife guide levers 38, 39 and 40 to supporting members 41, 42 and 43 respectively. The supporting members 41, 42 and 43 are each bolted to a cross beam 44 extending between the frame members X and Y and adjustably supported thereby. The cross beam 44 and frame members X and Y practically form an independent or auxiliary frame upon which the cutting mechanism and its operating means are mounted. Such a construction permits the removal of the entire automatic cutting mechanism as a unit when the bolts connecting members X and Y and A and B are removed and the spring 12 unhooked from member 13 on the frame A. Member 13 may be connected at some point on member X,—its function would not thereby be altered. The adjustable supporting means for the beam 44 comprises bearing blocks 45 and 46 on the frame mem-

bers X and Y respectively and the adjusting screws 47 and 48 which are mounted respectively on the frame members X and Y and engage the beam supports 45 and 46.

5 The crank shaft 24 has rigidly mounted thereon a cam 49 of the outline shown in Figs. 3 and 5 and is provided with a projecting portion 49'. The said cam 49 is for the purpose of restoring the operating rod 9

10 after the same has been tripped. In order to accomplish this function I have provided a lever 50 pivoted intermediate its ends and being at one end weighted and having an extension 50' thereon at said end extending

15 through the frame X and adapted to engage one end of the transverse pin 9'' on the operating rod 9. The opposite end of the lever 50 is provided with a roll 50'' which is held constantly in engagement with the cam

20 surface 49 by the weighted end 50'. A driving pulley or gear is rigidly secured to the loose clutch member 22' and operatively connected to the shaft of the lower roll F by means of the driving pinion 52, whereby

25 it will be possible to transmit power to the knife-operating mechanism.

The operating of the machine is as follows: To determine the thickness of pulp desired the indicator 7''' is set at the proper

30 position. The pulp collecting on the upper press roll E causes the latter to gradually rise in its guide bearings G' and I'. The tripping roller 1 gradually rises with the roll E and when the desired thickness is

35 reached the tripping lever 4 will have moved the trip spring 6 outwardly sufficiently to release the same and the operating rod 9 will be pulled vertically downward by the spring 12. The trip member 6 being of

40 flexible material will permit of bending when thus pulled out of engagement with the pawl 5 by the lever 4. The trip referred to hereinafter is to be considered as the trip members 6 and 9 acting as a unit.

45 Upon the release of the trip the stop pin lever 14 being engaged by the operating rod 9 will draw the stop pin 16 out of engagement with the crank disk 23 and put the latter in condition for operation when power or

50 driving means is applied thereto. Simultaneously with the unlocking of the crank disk the pin 9'' in engagement with the clutch lever 18 operates the yoke lever 19 and yoke 20 to move the clutch member 22' into engagement with the revolving clutch member 22'.

55 The driving means having been applied to the shaft 24' the crank disk 23 will revolve and reciprocate the rod 27 and through the leverage 30 to 35 will draw the knife 37 longitudinally of the roll E and into engagement with the stock thereon. It will be noticed that the parallel motion afforded by the levers 38, 39 and 40 will allow a draw cut and when in inoperative position

60 the knife is merely raised by moving the

lever 35 to the right in Fig. 1 while when the leverage has been set in operation the lever 35 will move to the left and allow the levers 38, 39 and 40 suspending the knife 37

70 to depend at right angles to the support 44, thereby bringing the knife into engagement with the stock on the roll. The various adjustable members permit a fine adjustment of the mechanism. At three quarters revolution of the crank disk 23 the cam 40 which

75 is also keyed to the shaft 24' and rotating therewith moves the vertical operating rod 9 upwardly when the projection 49' thereon engages the roll 50'' of the cam lever 50. This raises the outer end 50' of the said

80 lever which is already in engagement with one end of the pin 9'' and lifts the rod 9 vertically, catching the tooth 6' of the spring 6 on the pawl 5. At the same time the operating rod 9 moving vertically upward

85 throws one end of the stop pin lever 14 down, thereby engaging the stop pin 16 with the cut-away portion 23' of the crank disk 23, thereby stopping the crank disk at one revolution and causing the knife 37 to

90 return to and stop at its inoperative position. The collecting roll E having discharged its circular sheet of pulp settles downwardly causing the tripping roll 1 to settle also. The lever 2'' connected to the

95 tripping roll and operating therewith then moves the tripping lever 4 forwardly, and the tooth 4'' thereof catches over the upper end of the tripping spring 6, thereby resetting the mechanism for a repetition of the

100 step.

While I have shown and described a preferred embodiment of my invention it is to be understood that various changes within the scope of the claims may be made, and therefore I do not wish to be limited to the exact details as shown and described.

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Having thus described the invention what is claimed as new is:

1. In a machine of the class described, the combination with a collecting member, of means for cutting stock collected on said member, actuating means for the cutting means, said actuating means being normally

110 locked in inoperative position, and means for releasing the normally locked actuating means and simultaneously connecting driving means thereto.

115

2. In a machine of the class described the combination with a collecting member, of means for cutting stock collected on said member, actuating means for the cutting means, driving means for the actuating means, the actuating means being normally maintained in inoperative position, a reciprocable member operatively connected with the collecting member, and means operable by the reciprocable member for simultaneously releasing the actuating means and connecting the driving means thereto.

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3. In a machine of the class described, the combination with a collecting member, of means for cutting stock collected on said member, actuating means for the cutting means, said actuating means being normally locked in inoperative position, means including a trip and trip lever for releasing the normally locked actuating means and applying driving means thereto when the stock on the collecting member attains a predetermined thickness.

4. In a machine of the class described, the combination with a collecting member, of means for cutting and removing stock collected on said member, actuating means for the cutting means, means for locking the actuating means in inoperative position, means including a trip and trip lever for releasing the locking means, driving means for the actuating means, and means for connecting the driving means to the actuating means.

5. In a machine of the class described, the combination with a collecting member, of means for supplying stock to the member, means for cutting the stock collected on said member, means for actuating the cutting means, means for locking the actuating means in inoperative position, means including a trip and tripping lever for releasing the locking means at a predetermined thickness of the stock on the collecting member, driving means for the actuating means, and means operable by said releasing means for connecting the driving means to the actuating means upon release of the locking means.

6. In a machine of the class described, the combination with a collecting member, of means for cutting the stock collected on said member, means for actuating the cutting means, means for locking the actuating means in inoperative position, means including a trip for releasing the locking means, means in engagement with the collecting member for operating the trip, driving means for the actuating means, means for connecting the driving means to the actuating means upon release of the locking means, and means for restoring the trip, locking means and connecting means.

7. In a machine of the class described, the combination with a collecting roll, of means for cutting stock collected on the roll, a drive shaft, a crank disk mounted thereon for operating the cutting means, said disk being provided with a cut-away portion, a releasable locking pin adapted to engage in said cut-away portion and lock the crank disk in inoperative position, a lever connected to said pin, a trip member adapted to engage said lever and release said pin, and means for operating the trip member.

8. In a machine of the class described, the combination with a collecting roll, of means for supplying stock to the roll, means for cutting the stock collected on the roll, means

for actuating the cutting means, releasable locking means for the actuating means, means including a trip and trip lever for disengaging the locking means at a predetermined thickness of the stock on the roll, and means for restoring the locking means.

9. In a machine of the class described, the combination with a collecting roll, of means for supplying stock to the roll, means for cutting the stock collected on the roll, actuating means for the cutting means, releasable locking means for said actuating means, a spring held trip for disengaging the locking means, a pivoted member having a roll thereon in engagement with the collecting roll for operating the trip when the stock on the collecting roll attains a predetermined thickness, and means for restoring the locking means.

10. In a machine of the class described, the combination with a collecting roll, of means for feeding stock to the roll, means for cutting the stock collected on the roll, actuating means for the cutting means including a crank and crank disk, a rotatable shaft on which the crank disk is mounted, means for locking the shaft and disk against rotation, means including a trip for disengaging the locking means, means for determining the thickness of stock to be attained before release of the trip, a trip lever for operating the trip, and means for restoring the locking means and trip.

11. In a machine of the class described, the combination with a collecting member, of means for feeding stock to the member, means for cutting the stock collected on said member, said cutting means being supported independently of said collecting member and means for moving the cutting means longitudinally of the member.

12. In a machine of the class described, the combination with a frame, of a collecting roll supported thereby, means for feeding stock to the roll, cutting means supported on the frame, means for moving the cutting means longitudinally of said roll to cut the stock collecting on the roll when the stock attains a predetermined thickness.

13. In a machine of the class described, the combination of a frame, a collecting roll mounted thereon, means for feeding stock to the roll, a knife, adjustable means on the frame for supporting the knife, normally inoperative means for moving the knife toward the roll to cut the stock thereon, and means for setting the inoperative means into operation when the stock collecting on the roll attains a predetermined thickness.

14. In a machine of the class described, the combination of a frame, a felt roll and a collecting roll carried thereby, means for feeding stock to the rolls, a knife, adjustable means on the frame for supporting the knife, normally inoperative means for mov-

ing the knife longitudinally of the collecting roll and toward the same to cut the stock thereon, means including a trip and trip lever for setting the inoperative means into operation when the stock collecting on the roll attains a predetermined thickness, means for determining the thickness at which the tripping mechanism shall operate, and means for restoring the knife moving means to inoperative position.

15. In a machine of the class described, the combination of vertically disposed parallel frame members, a rotatably supported felt roll, a collecting roll rotatably mounted adjacent said felt roll and slidable along said frame members, other frame members, a beam connecting said other frame members, cutting means supported by said beam, and means arranged to move said cutting means into and out of position for severing stock collected on said collecting roll.

16. In a machine of the class described, the combination of vertically disposed parallel frame members, a rotatably supported felt roll, a collecting roll rotatably mounted adjacent said felt roll and slidable along said frame members, other frame members, a beam connecting said other frame members, a knife bar flexibly connected to the beam, a knife carried by said bar, and operating means connected to the knife bar to move the knife into and out of position for cutting stock collected on the collecting roll.

17. In a machine of the class described, the combination of vertically disposed parallel frame members, a rotatably supported felt roll, a collecting roll rotatably mounted adjacent said felt roll and slidable along said frame members, other frame members, a beam connecting said other frame members, a knife bar connected to said beam and arranged to move longitudinally of the collecting roll, a knife adjustably mounted on the bar, and actuating means for moving the knife bar including a normally locked and automatically releasable crank disk and means operatively connecting the disk to the knife bar.

18. In a machine of the class described, the combination with a main frame, of a felt roll and a collecting roll supported thereby and being relatively movable, mechanism for severing the stock collected on the collecting roll comprising, a knife extending longitudinally of said roll, means for moving the knife toward said roll to cut the stock collected thereon, and automatically releasable means for locking the knife in inoperative position, an auxiliary frame for supporting the stock severing mechanism, and means for mounting the knife thereon.

19. In a machine of the class described, the combination with a main frame, of a felt roll and a receiving roll supported for relative movement thereon, mechanism detach-

ably supported on the main frame for automatically severing the stock collected on the receiving roll comprising a knife extending longitudinally of the receiving roll, means for reciprocating the knife, means for locking the knife in inoperative position, means operable at a predetermined thickness of the stock for releasing the locking means, and means for restoring the knife into inoperative position after a single cutting operation.

20. In a machine of the class described, the combination with a frame, of a felt roll rotatably supported thereon, a receiving roll slidably and rotatably supported adjacent the felt roll, mechanism for automatically severing the stock collected on the receiving roll comprising a knife and knife guide extending longitudinally of the receiving roll, means for reciprocating the knife, means for locking the reciprocating means against movement, means including a trip and trip lever for releasing the locking means, means operable at a predetermined thickness of the stock for operating the trip lever, means for restoring the knife to inoperative position after a single cutting operation, and means for flexibly supporting the knife on the frame.

21. In a machine of the class described, the combination of vertically disposed parallel frame members, a rotatably supported felt roll, a collecting roll rotatably mounted adjacent said felt roll and slidable along said frame members, other frame members, a beam connecting said other frame members, a knife bar connected to said beam and arranged to move longitudinally of the collecting roll, a knife adjustably mounted on the bar, and actuating means for moving the knife bar including a recessed crank disk, a pin normally engaging in the recess to lock the crank disk against movement, means operable at a predetermined thickness of stock on the collecting roll for withdrawing the pin and connecting driving means to the disk, and rods operatively connecting the disk to the knife bar to draw the knife longitudinally of the collecting roll and cut the stock thereon.

22. In a machine of the class described, the combination with a collecting member, of means for cutting stock collected on said member, actuating means for the cutting means, driving means for the actuating means, normally inactive means adapted when operated to connect the driving means to the actuating means, a yieldable element tending to operate the connecting means, and means arranged to release said connecting means when the stock on the collecting member attains a predetermined thickness.

23. In a machine of the class described the combination with a base frame, of a felt roll, a collecting roll associated therewith

and bodily movable with relation to said felt roll, supporting and guiding means for said collecting roll, and mechanism for severing the stock accumulating on said collecting
5 roll comprising an auxiliary frame, normally inactive cutting means mounted on the auxiliary frame and a drive shaft on the auxiliary frame arranged to be operatively connected with the cutting means to actuate

the latter when the stock on the collecting roll attains a predetermined thickness. 10

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

GARRET SCHENCK, JR.

Witnesses:

FRED. M. GATES,
HARRY A. JONES.