United States Patent [19]

Morton et al.

[11] **3,742,993**

[45] **July 3, 1973**

[54] **MACHINE FOR CUTTING PEELER CORES ON LOGS INTO STUDS AND CHIPS**

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[22] Filed: **Mar. 30, 1971**

[21] Appl. No.: **129,338**

Related U.S. Application Data

[62] Division of Ser. No. 816,355, April 15, 1969, Pat. No. 3,627,005.

[52] **U.S. Cl.** ..... **144/248,** 144/39, 144/162 R

[51] **Int. Cl.** **B27c 9/04,** B27l 11/02

[58] **Field of Search** ..... 144/37, 39, 41, 3 P, 144/312, 246, 247, 248, 162 R, 176 R, 242; 143/55 R, 55 A

[56] **References Cited**

UNITED STATES PATENTS

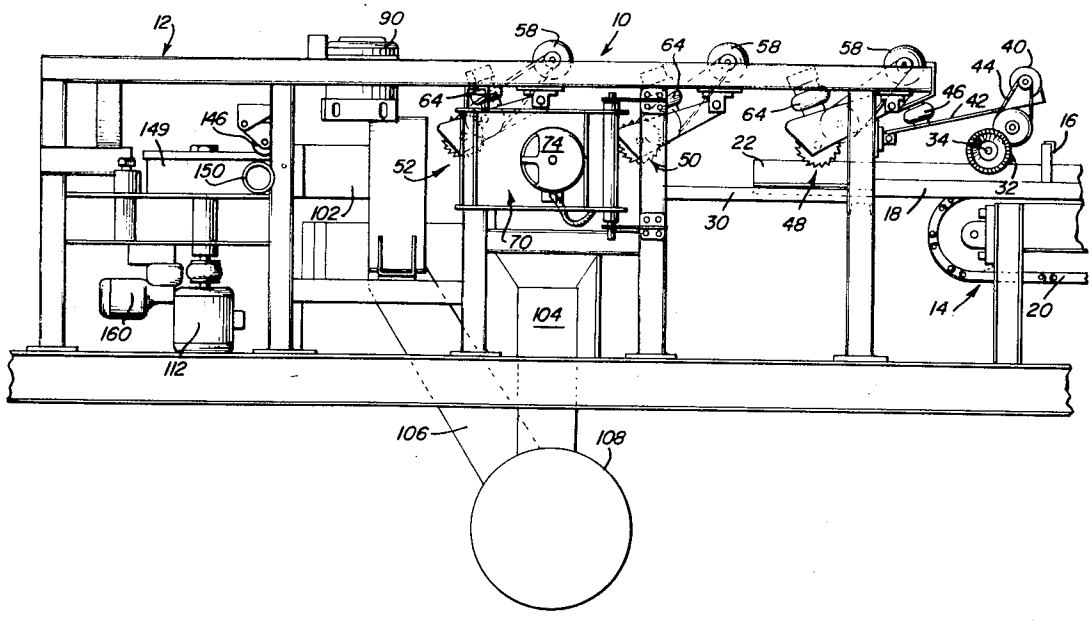
3,487,866	1/1970	Mitten	144/312
2,819,744	1/1958	Chuet et al.	144/247
2,779,363	1/1957	Laughton	144/247

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[57] **ABSTRACT**

A core handling apparatus for supporting a core or log for horizontal longitudinal advancement along a path past various tool heads operable to cut the core or log into a plurality of studs and chips. The core and log handling apparatus includes structure operable to move cores or logs along a predetermined path, independent of any displacement of the core or log other than longitudinally of the path, and the tool heads are disposed along the intended path of movement of the associated cores and logs and operable to sequentially chip material from the opposite sides of the cores or logs to form parallel opposite side planar faces on the cores or logs, chip material from the upper and lower portions of the cores or logs to form planar parallel upper and lower surfaces on the cores or logs, and form at least one horizontal kerf through the cores or logs after the latter have been shaped.

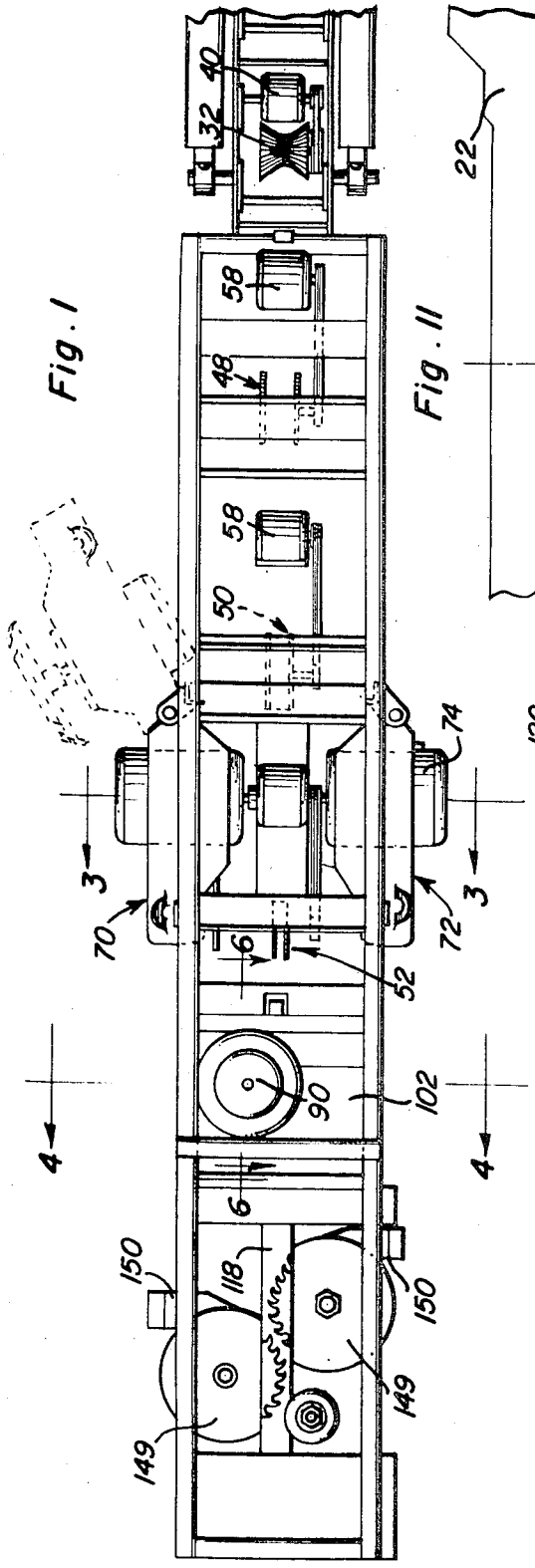
6 Claims, 12 Drawing Figures

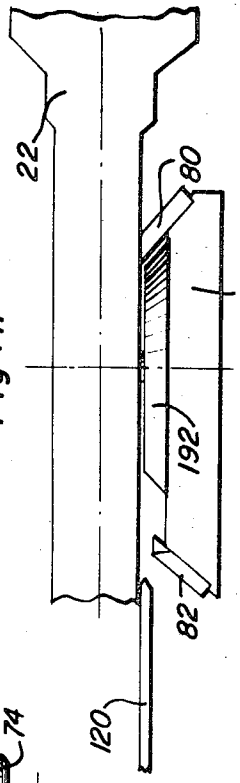


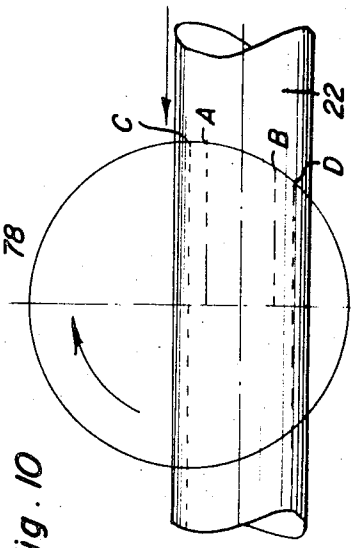
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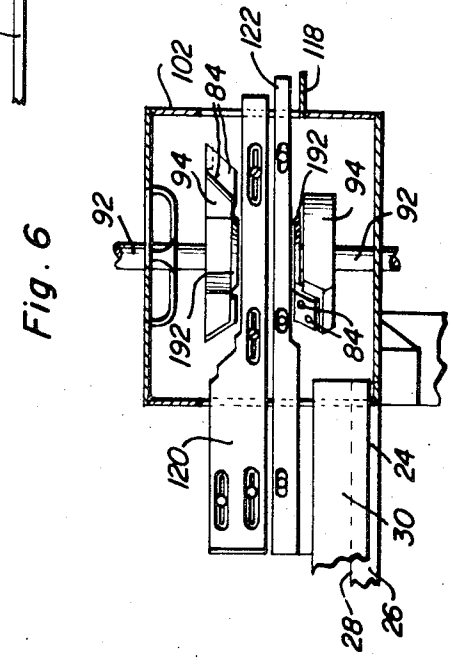
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Fig. 2

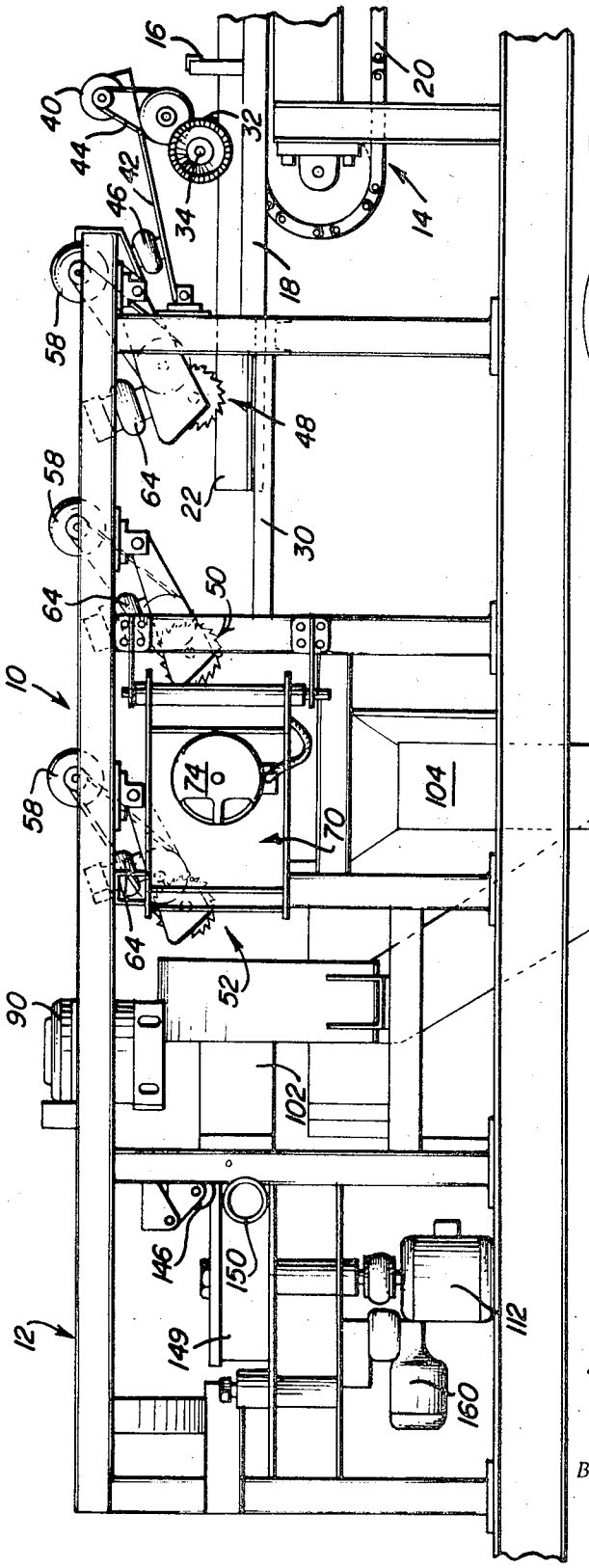
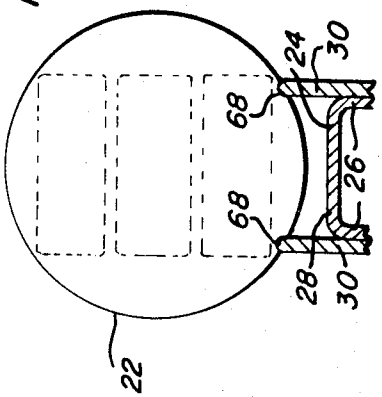


Fig. 12



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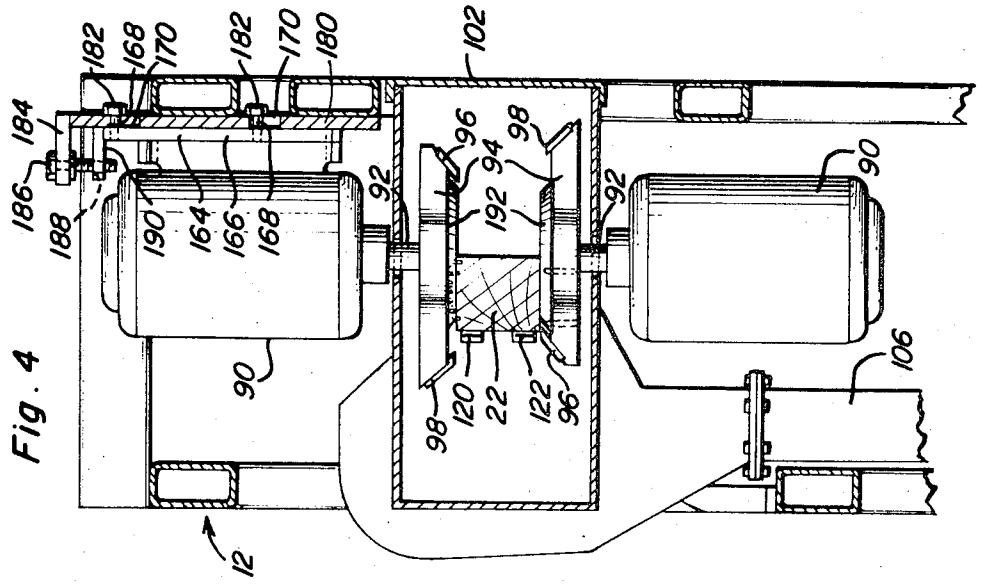


Fig. 4

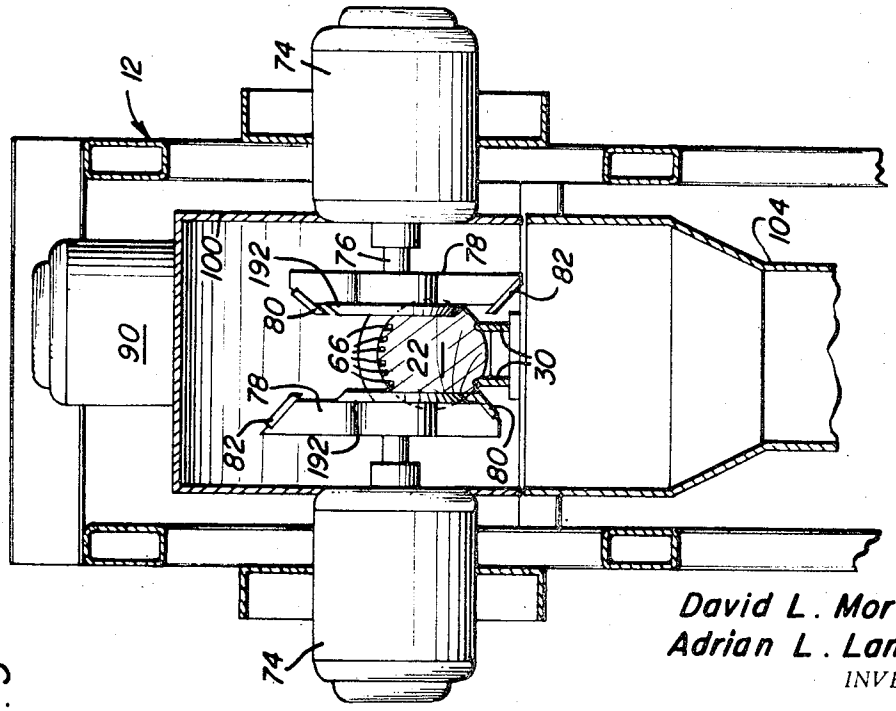
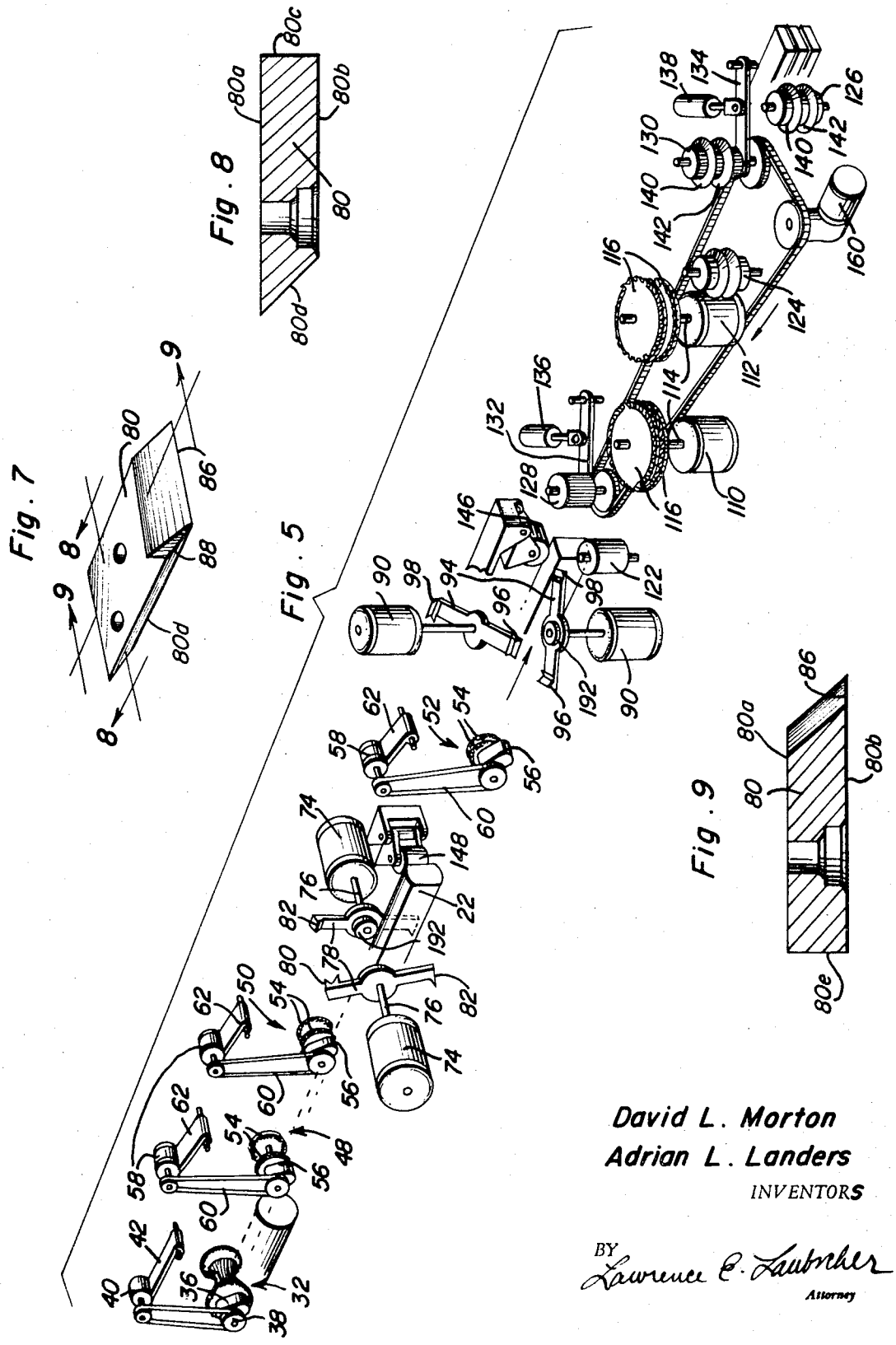


Fig. 3

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Fig. 8
80c
80a
80b
80
80d
Fig. 7
9
80
86
8
88
80d
Fig. 5
Fig. 9
86
80a
80b
80
80e
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MACHINE FOR CUTTING PEELER CORES ON LOGS INTO STUDS AND CHIPS

This application is a divisional application of application Ser. No. 816,355 filed Apr. 15, 1969 now U.S. Pat. No. 3,627,005.

The machine of the instant invention has been specifically designed to support and longitudinally displace a peeler core or log along a predetermined path having tool heads spaced therealong operable to transform the cylindrical core or log into a plurality of pieces of lumber in a single pass of the core or log through the machine. In addition, the machine of the instant invention is operable to first transform the cylindrical core or log into a single piece of lumber which is generally rectangular in cross-section and which is thereafter cut into a plurality of smaller pieces of lumber of rectangular cross-section. Further, during the process of transforming the cylindrical core into a single large piece of lumber of rectangular cross-section, instead of merely forming four longitudinal kerfs in a core or log in order to form the first large rectangular cross-section piece of lumber, the cylindrical core or log is initially transformed into the single large cross-sectional area piece of lumber by rotary chipping heads operable to rapidly chip away the necessary wood in order to transform the cylindrical core or log into a single large cross-sectional area piece of lumber. By this method of transformation, the waste material is already cut up into fine chips and may therefore be readily commerically disposed of for the production of wood pulp.

The machine is constructed in a manner whereby the cylindrical core or log to be transformed into rectangular pieces of lumber are precisely guidingly supported for movement along their intended path and driven along their intended path at a prescribed rate proportional to the speed of operation of the chipping heads which are to act upon the cylindrical cores or logs during their transformation into single large pieces of lumber of rectangular cross-sectional shape.

The main object of this invention is to provide a machine which will be capable of cutting peeler cores or logs into a plurality of studs.

Another object of this invention, in accordance with the immediately preceding object, is to provide a machine which will be capable of rapidly cutting a peeler core or logs into studs with a single pass of each peeler core or log through the machine.

Still another object of this invention is to provide a machine in accordance with the preceding objects which, in the transformation of a peeler core or log into a plurality of studs, is operable to transform all of the waste material either into chips or into sawdust for ready processing into wood pulp.

A further object of this invention is to provide a machine in accordance with the preceding objects which will be capable of efficiently transforming cylindrical peeler cores or logs into a plurality of studs while the peeler cores or logs are being rapidly advanced through the machine at a speed slightly greater than 1 foot per second, or at any speed proportional to the speed of operation of the chipping heads.

A still further object of this invention is to provide a machine including a guidance and propelling system of unique design and construction so as to give exceptional accuracy in the sizing of the studs or cores and

exceptional quality to the surfaces on the lumber developed by the machine.

A final object of this invention to be specifically enumerated herein is to provide a machine in accordance with the preceding objects which will conform to conventional forms of operation, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble-free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a top plan view of the machine of the instant invention with open positions of the pivotally supported opposite side chipper heads of the machine illustrated in phantom lines;

FIG. 2 is a side elevational view of the assemblage illustrated in FIG. 1;

FIG. 3 is an enlarged fragmentary transverse vertical sectional view taken substantially upon the plane indicated by the section line 3—3 of FIG. 1;

FIG. 4 is an enlarged fragmentary transverse vertical sectional view taken substantially upon the plane indicated by the section line 4—4 of FIG. 1;

FIG. 5 is an exploded schematic view of most of the working components of the machine;

FIG. 6 is a fragmentary enlarged longitudinal vertical sectional view taken substantially upon the plane indicated by the section line 6—6 of FIG. 1;

FIG. 7 is a perspective view of one of the cutter blade members of the machine;

FIG. 8 is a somewhat enlarged vertical sectional view taken substantially upon the plane indicated by the section line 8—8 of FIG. 7;

FIG. 9 is a somewhat enlarged vertical sectional view taken substantially upon the plane indicated by the section line 9—9 of FIG. 7;

FIG. 10 is a fragmentary schematic side elevational view illustrating the manner in which the opposite side chip cutting heads of the machine act upon a peeler core or log being advanced through the machine;

FIG. 11 is a schematic top plan view of the assemblage illustrated in FIG. 10; and

FIG. 12 is a fragmentary enlarged transverse vertical sectional view illustrating a peeler core or log slidingly supported and cradled from the lower peeler core support means of the machine and with the outline of the plurality of studs into which the core or log is to be cut illustrated in phantom lines.

Referring now more specifically to the drawings, the numeral 10 generally designates the machine of the instant invention. The machine 10 includes a frame structure referred to in general by the reference numeral 12 and has one end thereof aligned with the outlet end of a supply conveyor assembly referred to in general by the reference numeral 14. The supply conveyor assembly 14 includes an elevated transversely extending stop bar 16 adjacent its discharge end against which a peeler core or log greater in diameter than that which may be handled by the machine 10 will abut. In addition, the supply conveyor assembly 14 includes opposite side plates 18 between which an endless conveyor 20 has its upper reach disposed and which guide a peeler core or

log such as core or log 22 from the discharge end of the supply conveyor assembly 14 to the inlet end of the machine 10.

The machine 10 includes a longitudinally extending inverted channel-shaped member 24 at its inlet end including a pair of depending sides or flanges 26 interconnected at their upper edges by means of a bight portion 28. A pair of upstanding flanges 30 are secured to and project above the upper marginal edge portions of the flanges 26. The ends of the flanges 30 at the inlet end of the machine 10 are disposed between the adjacent ends of the opposite side plates 18 and a peeler core or log 22 being discharged from the supply conveyor assembly 14 is automatically guidingly engaged and supportingly cradled between the ends of the flanges 30 adjacent the supply conveyor assembly 14.

The machine 10 includes a centering and drive wheel assembly generally referred to by the reference numeral 32 mounted on the output shaft portion 34 of a gear reduction assembly 36 whose input shaft portion 38 is driven from a motor 40 supported from the free end of a vertically swingable support arm 42 mounted at the inlet end of the machine 10 in a manner such that the free end of the support arm 42 overlies the discharge end of the supply conveyor assembly 14. The motor 40 and gear reduction assembly 36 are each supported from the free end of the arm 42 and the output shaft of the motor 40 is coupled to the input shaft portion 38 of the gear reduction assembly 36 by means of an endless flexible belt 44.

The centering and drive wheel assembly 32 is toothed and concavo-convex in longitudinal cross-sectional shape and therefore has a centering effect as well as a driving action on the forwardly advancing end of each core or log moved toward the assembly 32 on the supply conveyor assembly 14. The support arm 42 is limited in downward swinging movement at its rear end by means of a movement limiting assembly 46 and the machine 10 includes a plurality of further longitudinally spaced drive wheel assemblies generally referred to by the reference numerals 48, 50 and 52. Each of the drive wheel assemblies includes a pair of axially spaced toothed wheel disks 54 mounted on the output shaft portion of a gear reduction assembly 56 driven from an electric motor 58 through an endless flexible belt 60. Further, each of the drive wheel assemblies includes a support arm 62 similar to the support arm 42 and which is also limited in downward movement at its free end by means of a movement limiting assembly 64 corresponding to the movement limiting assembly 46.

It may be noted, however, from FIG. 5 of the drawings that the axial spacing between the disks 54 of the drive wheel assembly 48 is greater than the axial spacing between the disks 54 of the drive wheel assembly 50. Further, the spacing between the disks 54 of the assembly 50 is greater than the spacing between the disks 54 of the assembly 52. From FIGS. 3 and 4 of the drawings it may be seen thatthe toothed wheel disks 54 therefore engage the core 22 along six generally parallel and spaced apart paths 66 extending along the top of the core or log 22. In this manner, each of the driven and toothed wheel disks 54 frictionally engages the bits into the core or log in a manner such that constant forward linear speed of the core or log 22 is assured. Of course, inasmuch as the arms 42 and 62 are free to swing vertically at their free ends through limited arcs, the arms 42 and 62 automatically compensate for cores or logs of different diameters passing through the machine 10. Also, as previously set forth, the elevated transverse abutment 16 is provided to insure that a core or log such as core or log 22 but of a diameter too large to be handled by the machine 10 will not be able to be advanced forwardly by the conveyor assembly 14 toward the machine 10 past the elevated transverse abutment 16 and in position to be engaged by either of the drive wheel assemblies 32, 48, 50 or 52.

At this point it is believed that it should be pointed out that in addition to the axially spaced toothed disks 54 biting into each core or log 22 along parallel but spaced apart paths, each core or log 22 is pushed downwardly upon the upper marginal edge portions of the flanges 30 by its own weight and by the downward forces acting upon the cores or logs 22 by the arms 42 and 62 and their respective drive wheel assemblies. This of course causes the cores or logs 22 to bear downwardly upon the upper marginal edge portions of the flanges 30 with a greater force than the weight of the cores or logs with the result that the upper marginal edge portions of the flanges 30 not only serve to guidingly support and cradle the cores or logs 22 but also to score or inwardly depress the outer surface portions of the cores or logs 22 engaged by the flanges 30 so as to form shallow longitudinal grooves 68 in each of the cores or logs 22 passed through the machine 10. These grooves 68 and the paths 66, together with the cradling action of the flanges 30 on the cores or logs 22 insure that the cores or logs 22 will be guidingly supported and shifted through the machine 10 in a manner positively preventing lateral or rotational movement of the cores or logs. Accordingly, quite accurate machining or chipping and sawing of the cores or logs into a plurality of studs is made possible.

The frame 12 includes a pair of opposite side door assemblies 70 and 72 which are substantially identical except for being right and left handed and which are swingable from the solid line positions illustrated in FIG. 1 of the drawings to the phantom line positions illustrated in FIG. 1. Any suitable means (not shown) may be utilized for securing the door assemblies 70 and 72 in the closed positions and each of the assemblies includes an electric motor 74 including an output shaft 76 upon which a generally diametric fly bar 78 is mounted. The opposite ends of the fly bars 78 are spaced unequally from the axis of rotation of the output shafts 76 and the ends of the fly bars 78 include identical cutter blade members 80 and 82 removably secured thereto by fasteners such as fasteners 84 illustrated in FIG. 6. Referring to FIGS. 7–9 it will be seen that the cutter blade member 80 includes planar parallel upper and lower surfaces 80*a* and 80*b*, respectively, a vertical first side wall 80*c*, and an outwardly inclined second side wall 80*d*. At one end the cutter member includes a vertical end wall 80*e*, and at the other end the cutting member contains a V-shaped notch that defines a pair of bevelled angularly-arranged cutting edges 86, 88. The horizontal cutting edge 86 formed on the lower surface 80b is arranged at an angle of about 30° to the longitudinal axis of the cutting member, and the vertical edge 88 formed on the inclined wall 80e is arranged at an angle of about 45° to the horizontal, whereby an obtuse angle is defined between the cutting edges 86 and 88 as shown in FIG. 7. The cutter member 82 has a corresponding construction. As will be described in greater detail below with regard to FIG. 10, the cutter

members are so connected in an inclined manner to the ends of the fly bar that the cutting edges are generally parallel with the plane of rotation of the fly bar and face forwardly of the direction of rotation thereof.

The machine **10** additionally includes a second pair of electric motors **90** which may be seen to best advantage in FIG. **4** of the drawings and which also have output shaft portions **92** upon which fly bars **94** corresponding to fly bars **78** are mounted, the fly bars **94** including cutter blade members **96** and **98** corresponding to the cutter blade members **80** and **82.** From FIG. **4** of the drawings it may be seen that the fly bars are rotated about vertical axes spaced slightly to one side of the longitudinal centerline of the core or log **22** and from FIG. **3** of the drawings it may be seen that the fly bars **78** are rotated about axes spaced above the centerline of the core or log **22.**

The fly bars **78** are disposed in a housing-like structure **100** supported within the frame structure **12** and the fly bars **94** are supported in a similar housing structure **102** supported within the frame structure **12.** Suitable ducting **104** and **106** communicates with the interiors of the housing structures **100** and **102** for conveying chips cut from the core or log **22** by the fly bars **78** and **94** to a suitable chip removal system **108.**

Spaced toward the outlet end of the machine **10** from the motors **90** are a pair of vertically disposed motors **110** and **112** including upwardly projecting output shafts **114** upon which a pair of vertically spaced and horizontally disposed circular saw blades **116** are mounted. Corresponding saw blades are horizontally aligned and adjacent outer peripheral portions of the saw blades **116** extend through the same vertical plane extending longitudinally of the machine **10** whereby the kerfs cut in the cores or logs **22** by the saw blades **116** on opposite sides of the machine **10** will overlap each other.

As the cores or logs **22** leave the housing structure **102** the cores or logs **22** are supported from a horizontal bearing plate **118** which extends from the discharge end of the housing structure **102** to the outlet end of the machine **10,** the flanges **30** terminating at their ends adjacent the discharge end of the machine **10** in the inlet end of the housing structure **102.** Also, the housing structure **102** includes upper and lower anvil plates **120** and **122** which are adjustably supported from the frame structure **12** as desired so as to align with the corresponding planar side surface formed on the log, the anvil plates being provided on the side of the longitudinal centerline of the core or log **22** remote from the side of the centerline to which the axes of rotation of the output shaft portions **92** of the motor **90** extend. In this manner, the "climb out" cutting action of the fly bars **94** tend to urge the core or log **22** against the abutment plates **120** and **122.** Further, the axes of rotation of the shaft portions **76** are disposed above the center of the core or log **22** and therefore the "climb out" cutting action of the fly bars **78** on the core **22** tend to hold the core or log **22** down in contact with the flanges **30.**

From FIG. **10** of the drawings it may be seen that the axes of rotation of each of the fly bars **78** and **94,** the direction of the rotation of these fly bars and the depth of cut made by the cutting blade members of the fly bars **78** and **94** insure that the cutting action of the cutter blade members **80, 82, 96** and **98** is such that the cutting or chipping strokes are inclined at least slightly in the direction in which the core **22** is being advanced, the cutting blade members **82** and **98** cutting from point A to point B in FIG. **10** and the cutting blade members **80** and **96** cutting from point C to point D in FIG. **10.**

The cutting blade members **82** and **98** are spaced approximately ¼ inch to 1 inch back away from the planes in which the cutter blade members **80** and **96** swing. In this manner, the cutter blade members **82** and **98** remove all but the last ¼ inch to 1 inch of wood from the sides and top and bottom of the cores or logs **22** and the cutter blade members **80** and **96** remove the final ¼ inch to 1 inch of material. Of course, the cutter blade members **80** and **96** are carried by the shorter ends of the fly bars **78** and **94** and it is to be noted that the cores or logs **22** are longitudinally advanced at a linear speed proportional to the rotating speed of the fly bars **78** and **94** whereby the cores or logs **22** are advanced ⅝ inch to 1 inch each revolution of the fly bars **78** and **94.** As shown in FIGS. **3, 4** and **10,** each of the cutter members is connected with its respective fly bar in an inclined manner with the cutting edges thereof lying in a plane generally parallel with the plane of rotation of the fly bar.

As the squared cores or logs **22** move from between the fly bars **94** they are guided by vertical rollers **122, 124** and **126** journaled for rotation about fixed axes as well as drive rollers **128** and **130** disposed on the opposite side of the machine **10,** mounted on horizontally swingable arms **132** and **134** and yieldingly urged into contact with the cores or logs **22** by fluid actuators **136** and **138** acting upon the arms **132** and **134.** The rollers **128** and **130** are fluted and the rollers **124, 126** and **130** include horizontally aligned circumferential flanges **140** and **142** spaced axially of the rollers which are also horizontally registered with the saw blades **116** and are therefore receivable in the kerfs made by the saw blades **116.** Further, during movement of the cores or logs **22** from the housing structure **102** the cores or logs **22** are urged downwardly against the plate **118** by a vertically swingable overhead roller **146** and the cores or logs **22** are urged into tight sliding frictional engagement with the abutment plates **120** and **122** by means of a horizontally swingable pressure roller **148,** see FIG. **5.**

The plate **118** extends between the ripsaw assemblies defined by the saw blades **116,** see FIG. **1** and the ripsaw assemblies include partial cylindrical shrouds **149** in which the corresponding saw blades **116** are substantially fully enclosed and which include outlet neck portions **150** to which a suitable sawdust removal means may be connected.

In review of the operation of the machine **10** it is pointed out that the conveyor assembly **14** conveys peeler cores or logs **22** toward the inlet end of the machine **10.** Cores or logs **22** which are too large to be handled by the machine **10** abut the elevated horizontal transverse member **16** and these large cores are removed from the conveyor assembly **14** by hand or other means. As a core or log member **22** which is not too large to be handled by the machine **10** begins to move off the outlet end of the conveyor assembly **14,** the leading end of the core or log **22** is engaged by the centering and drive wheel assembly **32** which automatically properly centers the cylindrical core or log **22** in alignment with the center of the spacing between the flanges **30.** Therefore, the cor or log **22** moves from the conveyor assembly **14** and its forward or leading end

drops onto and is slidingly engaged with and supported from the flanges **30** in a cradling manner. Then, the leading end of the core or log member **22** passes under the drive wheel assembly **48** whose disk members **54** engage and bite into the core or log member **22** along the remote paths **66**, see FIG. **3**. Thereafter, the core or log passes under the drive wheel assembly **50** and the drive wheel assembly **52** with the disk members **54** of these assemblies engaging the cores or logs **22** along the corresponding paths **66**. As the leading ends of the cores or logs **22** pass beneath the drive wheel assembly **50** and move toward the drive wheel assembly **52**, the fly bars **78** form planar surfaces on the opposite sides of the cores or logs **22**. Thereafter, as the leading ends of the cores or logs **22** pass from beneath the drive wheel assembly **52**, the fly bars **94** form planar surfaces on the upper and lower portions of the cores or logs **22**. Thereafter, while the core or log is being driven by roller **128** and guided by roller **122** and also held down upon the plate **118** by roller **146**, the squared core or log **22** has a pair of horizontal kerfs formed therethrough by the saw blades **116** and the flanges **140** and **142** on the rollers **124**, **126** and **130** are received in these kerfs to prevent the plurality of studs formed thereby from pinching the saw blades **116**.

A suitable gear head motor **160**, see FIG. **2**, is provided and is drivingly connected to the rollers **128** and **130** in any convenient manner whereby these rollers may effectively drive the cores or logs **22** after the rear ends of the latter have moved from beneath the drive wheel assembly **52**.

Because of the precise cutting edges of the cutter blade members mounted on the fly bars **78** and **94** in radial as well as axial staggered relationship, the fly bars are able to chip material from the opposite sides, top and bottom of the cores or logs **22** in an efficient manner leaving a relatively smooth squared core or log to be cut into a plurality of studs by the saw blades **116**. The horsepower requirements of the various motors provided on the machine **10** is maintained at a minimum due to the efficient cutting action of the fly bars **78** and **94** and the flanges **140** and **142** which are received in the kerfs formed by the circular saw blades **116**.

The upper motor **90** is supported from an L-shaped and inverted mounting plate **164** whose vertical flange **166** includes outwardly projecting studs **168** slidable through vertical slots **170** formed in a second mounting plate **180** supported from the adjacent side of the frame structure **12**. The studs **168** have their free ends secured through the slots **170** by means of threaded nuts **182** and the mounting plate **180** includes a horizontal flange portion **184** hqving a threaded bolt **186** journalled therethrough against axial displacement relative to the flange portion **184**. The bolt **186** is vertically disposed and is threadedly engaged through a threaded bore **188** formed vertically through the upper horizontal leg **190** of the mounting bracket or plate **164**. Accordingly, in order to adjust the height of the upper motor **90**, the nuts **182** may be loosened and the bolt **176** may be rotated so as to cause vertical adjustment of the motor **90**. Thereafter, the nuts **182** are tightened so as to maintain the upper motor **90** in adjusted vertically shifted position.

Although not a part of the supporting and guiding system for logs which includes the flanges **30**, the horizontal bearing plate **118**, the anvil or abutment plates **120** and **122** and the various horizontally and downwardly urged guide rollers, the fly bars **78** and **94** each include a centrally disposed disk **192** which is generally truncated cone-shaped in configuration and disposed concentric relative to the axis of rotation of the corresponding fly bar. Each of the disks **92** includes a smooth outer surface disposed normal to the axis of rotation of the corresponding fly bar and this smooth surface is spaced very slightly from the surface generated on the associated core or log by the fly bar from which the disk **192** is supported. Accordingly, while the outer smooth faces of the disks **192** do not constantly engage the planar surfaces generated on the cores or studs **22**, they are spaced ever so slightly outwardly from these planar surfaces so as to immediately resist any tendency of the adjacent portions of the cores or studs to vibrate laterally due to the cutting action of the various fly bars.

By providing the disks **192**, extremely smooth planar surfaces may be generated on the four sides of the logs or cores **22**.

If it is desired, the guide or anvil plates **120** and **122** may be mounted so as to be horizontally adjustable transversely of the path of movement of the logs or cores through the machine and the motors **74** may also be supported for horizontal adjustment, when desired.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. Apparatus for use in connection with rotary chipping heads for forming planar side surfaces on a peeler core or log workpiece, comprising

a. a frame;

b. workpiece support means connected with said frame, said support means including a pair of parallel spaced horizontal upstanding support flanges (**30**) having laterally spaced upper marginal edge portions for slidably supporting and cradling the workpiece;

c. means (**14**) for introducing the workpiece longitudinally upon said support flanges; and

d. upper holddown and drive means for driving said workpiece longitudinally of, and for biasing said workpiece downwardly upon, said support flanges, said upper holddown and drive means including

1. drive wheel means (**48**) connected for free vertical movement relative to said frame, said drive wheel means applying to said workpiece a downwardly directed force of such a magnitude as to cause the adjacent upper marginal edge portions of said support flanges to score and form shallow longitudinal grooves in the workpiece; and

2. motor means (**58**) for driving said drive wheel means, whereby the workpiece is positively supported between said drive wheel means and said support flanges and is prevented from lateral or rotational movement relative to said support flanges by the cooperation between the upper marginal edge portions of said support flanges and the shallow grooves formed in the bottom of

the workpiece, thereby to permit accurate chipping of the workpiece by said chipping heads.

2. Apparatus as defined in claim 1, wherein the adjacent upper marginal edges of said support flanges are spaced apart by a distance of approximately 3 inches, and further wherein said drive wheel means include a toothed outer periphery, the downwardly directed force of said drive wheel means being sufficient to cause the toothed periphery of said drive wheel means to bite into the workpiece and thereby support the upper portion of the workpiece against lateral movement relative to the frame.

3. Apparatus for use in connection with rotary chipping heads for forming planar side surfaces on a peeler core or log workpiece, comprising

a. a lower support assembly including a pair of parallel spaced horizontal upstanding support flanges (30) having parallel upper marginal edge portions for lengthwise slidingly supporting and cradling the workpiece;

b. means (14) for introducing the workpiece longitudinally upon said flanges; and

c. an upper holddown and drive assembly including a plurality of upper holddown and drive means (48, 50, 52) spaced longitudinally above said support flanges for frictionally and drivingly engaging said workpiece and for yieldingly resisting upward movement of said core relative to said flanges, thereby to prevent lateral shifting of said workpiece relative to said support flanges,

1. each of said upper holddown and drive means including a drive wheel journaled for rotation about an axis extending transversely above the longitudinal path of travel of said workpiece, each of said drive wheels including a pair of externally toothed axially spaced end wheel disks (54) spaced equally on opposite sides of the vertical plane containing said path, respectively;

2. the axial spacing distance between the disks of successive drive wheels in the direction of travel of said workpiece being progressively reduced, whereby said toothed wheel disks engage the workpiece along separate parallel and spaced apart paths extending along the top of the workpiece.

4. Apparatus as defined in claim 3, wherein said upper holddown and drive assembly includes at least three drive wheels, and further including between a pair of said drive wheels chipping head means (80, 82) for forming vertical planar side wall surfaces on opposite sides of said workpiece during transport by said holddown and drive assembly.

5. Apparatus as defined in claim 4, wherein said upper assembly includes means yieldingly urging each of said drive wheels downwardly toward a lower limit position spaced above said lower assembly.

6. Apparatus as defined in claim 5, wherein said support flanges are spaced apart approximately 3 inches.

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