

No. 871,296.

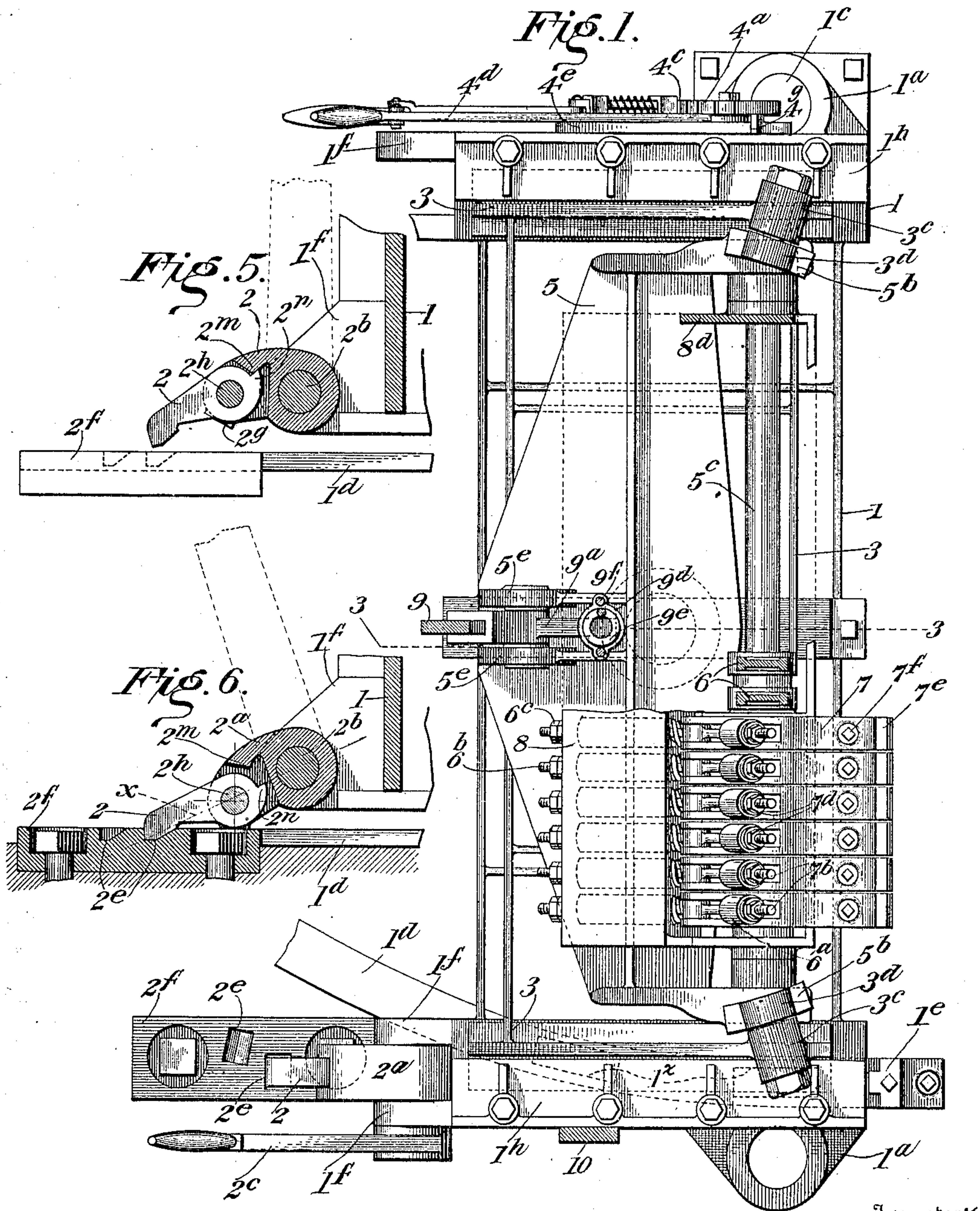
PATENTED NOV. 19, 1907.

J. J. RUSSELL & A. J. BAYLEY.

BARK PEELING MACHINE.

APPLICATION FILED FEB. 28, 1907.

4 SHEETS—SHEET 1.



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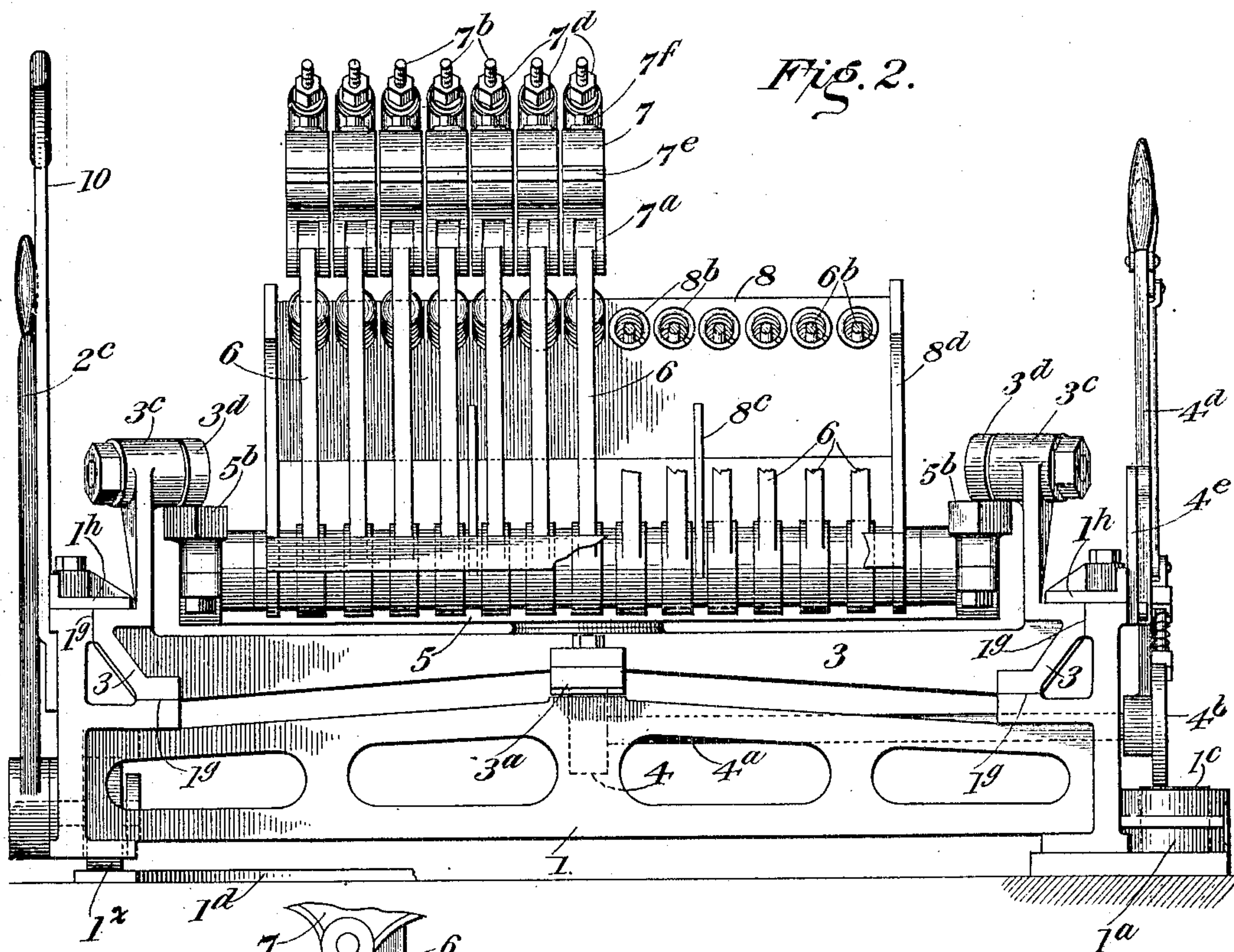


Fig. 2.

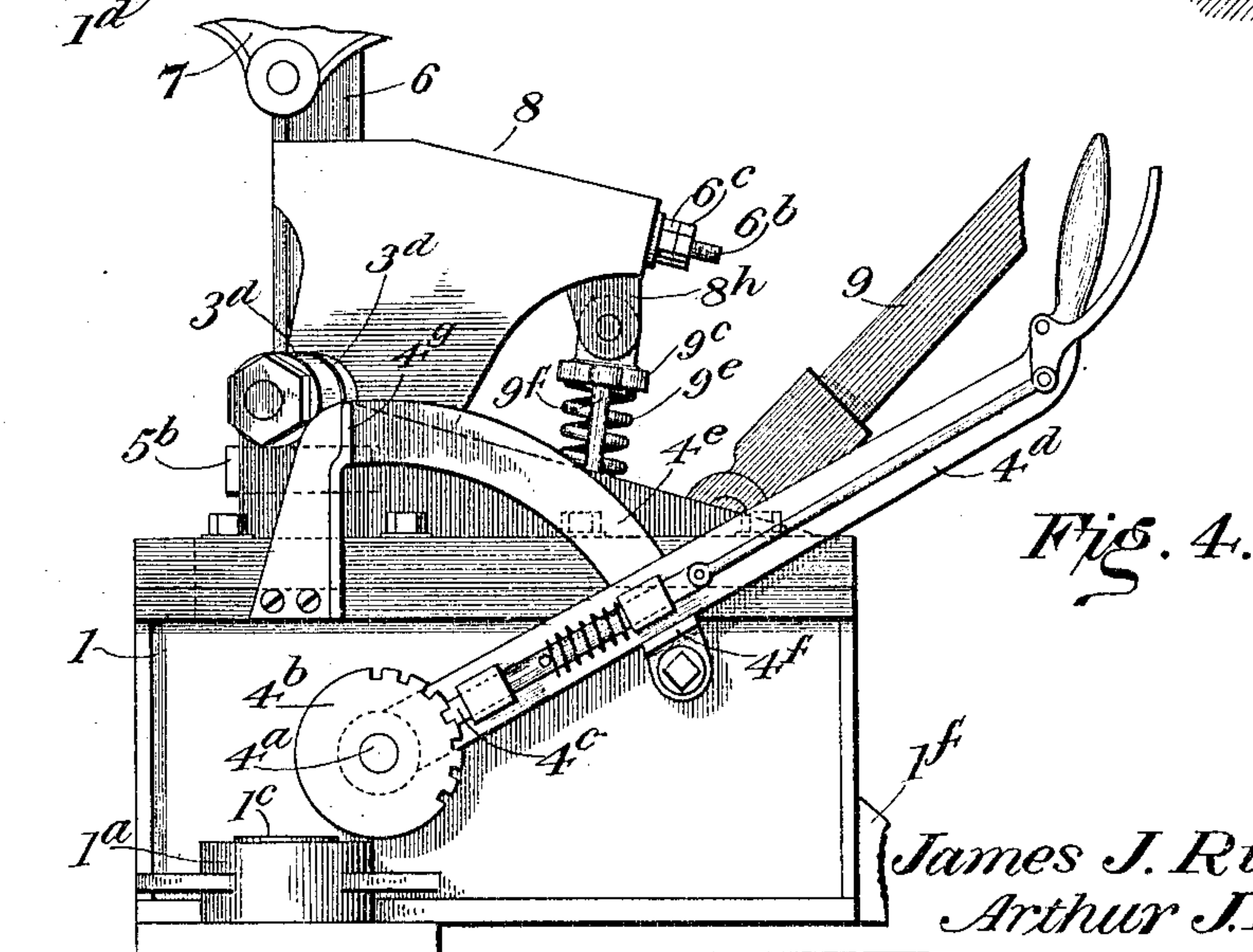


Fig. 4.

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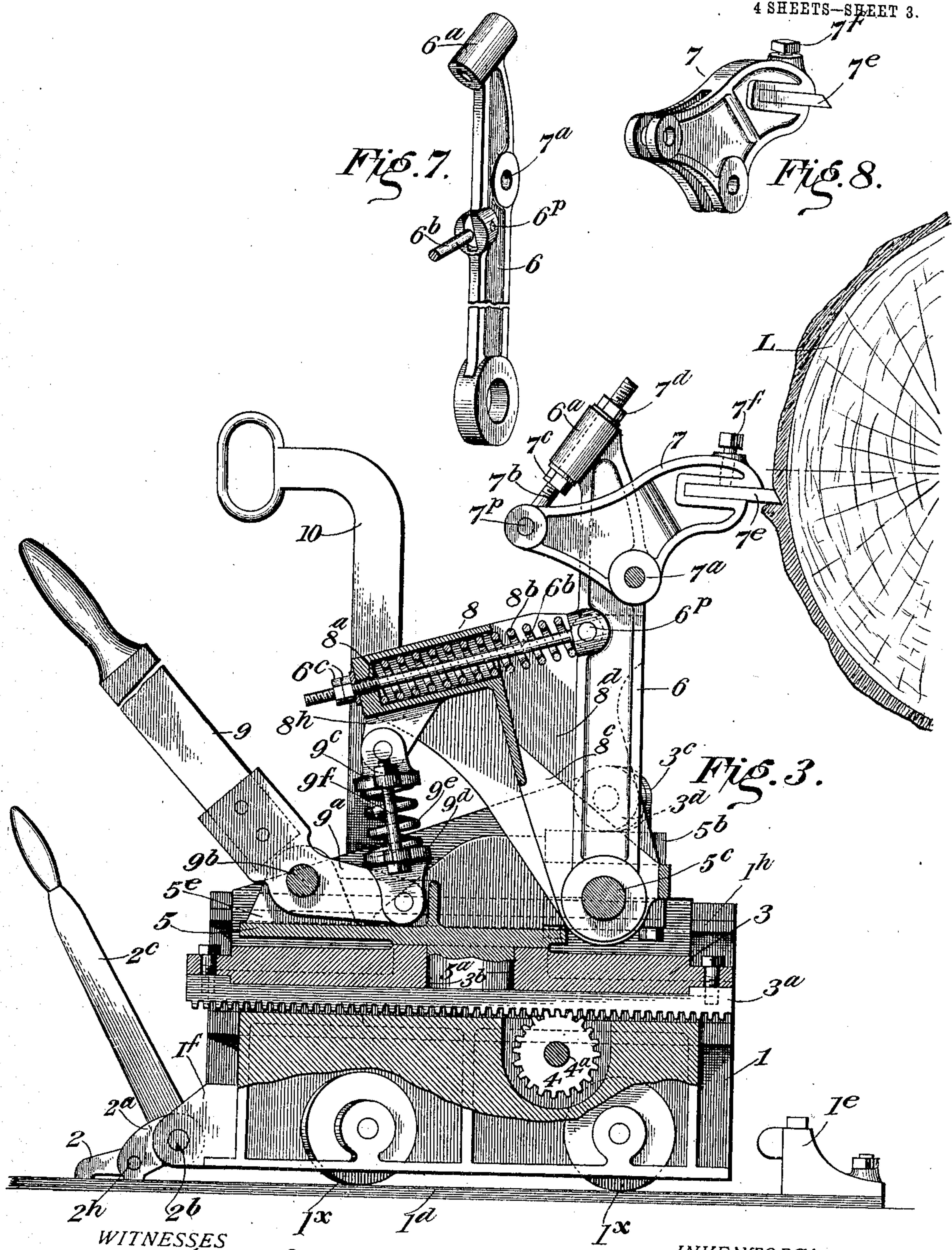
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4 SHEETS—SHEET 3.



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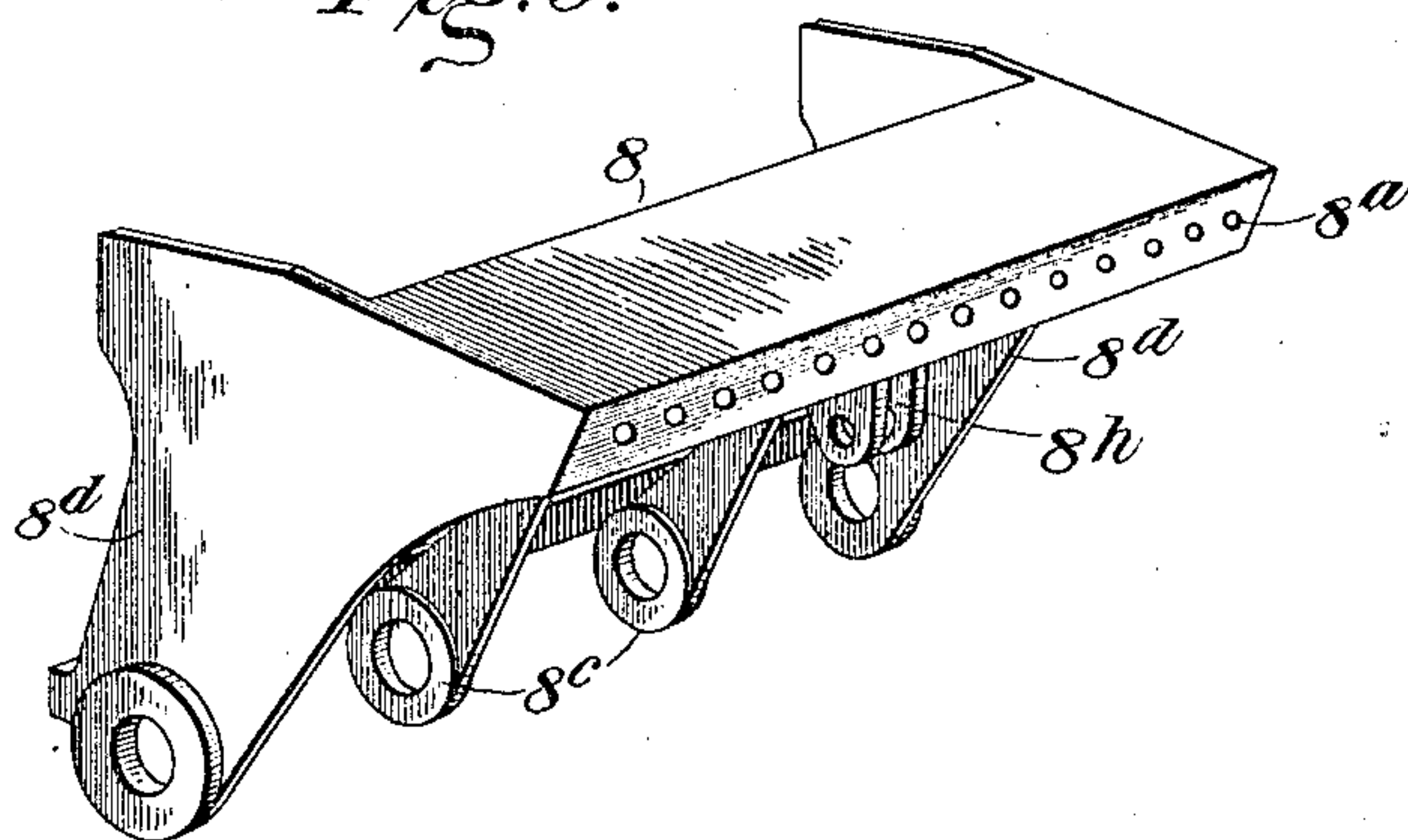
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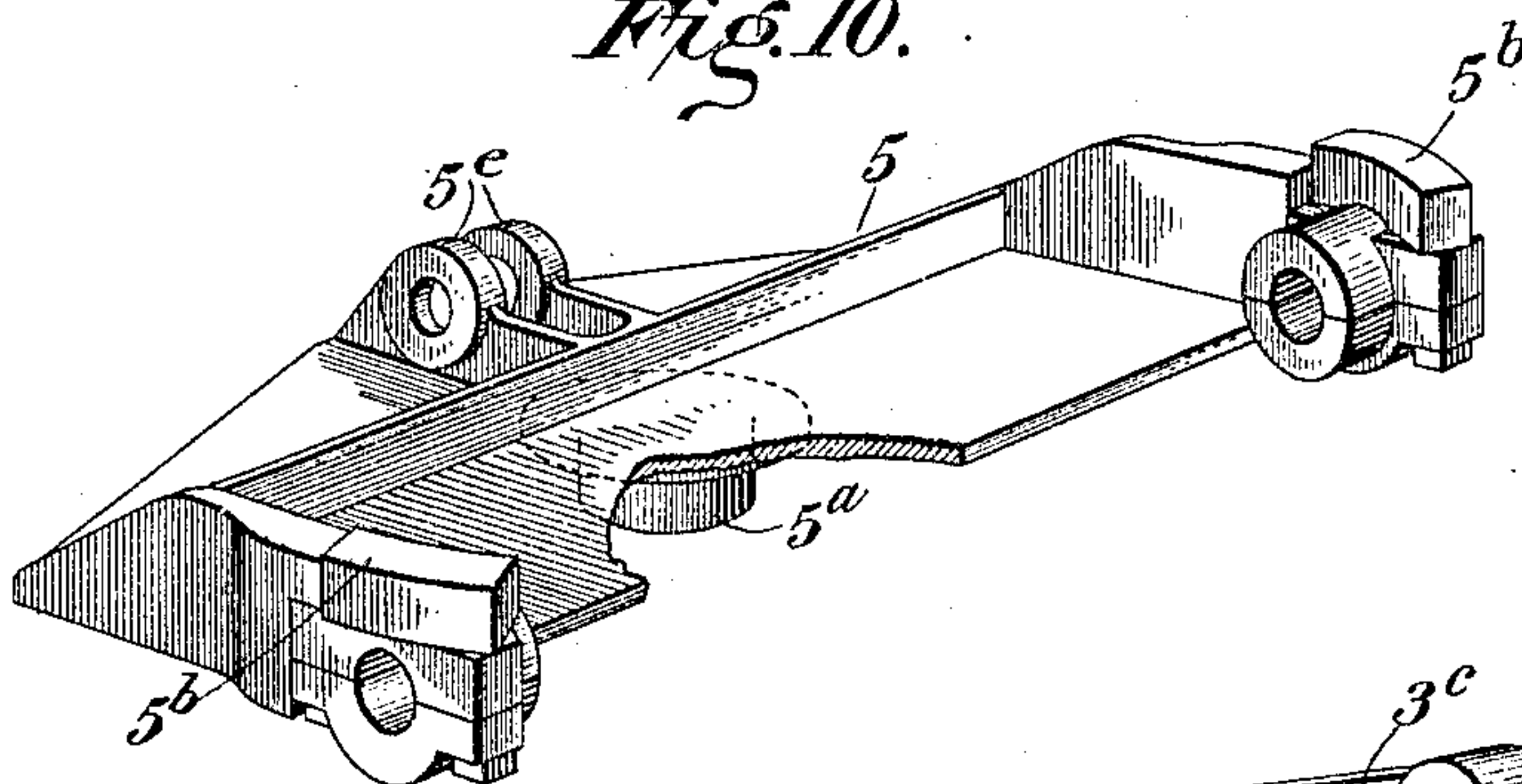
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4 SHEETS—SHEET 4.

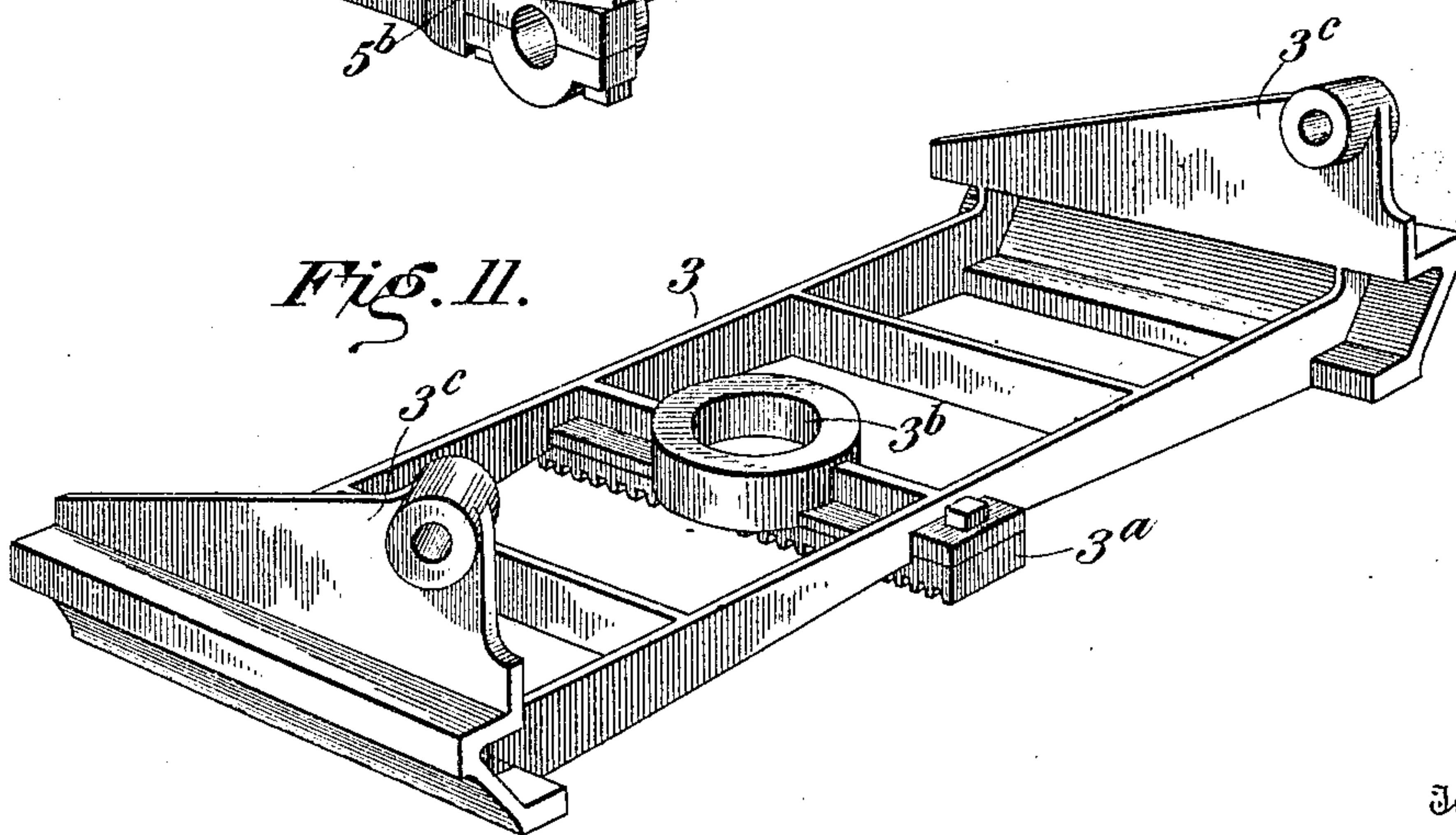
*Fig. 9.*



*Fig. 10.*



*Fig. 11.*



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# UNITED STATES PATENT OFFICE.

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## BARK-PEELING MACHINE.

No. 871,296.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed February 28, 1907. Serial No. 359,937.

*To all whom it may concern:*

Be it known that we, JAMES J. RUSSELL and ARTHUR J. BAYLEY, both of Milwaukee, Milwaukee county, Wisconsin, have invented certain new and useful Improvements in Bark-Peeling Machines; and we hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

The subject of this invention is a machine for peeling or stripping bark from logs, and particularly designed for removing bark from logs preparatory to their being cut into veneer strips.

The machine embodying the invention can be arranged adjacent a veneer cutting machine so that it can operate upon the log after the latter is placed in the veneer machine but before the veneer cutting operation begins; thus the veneer machine can be used for rotating the log during the bark removing operation, and after the bark has been stripped off the log can be cut into veneer without removing it from the veneer machine.

The barking machine is adapted to be located adjacent to the veneer machine, or log holding and rotating device, and can be readily moved out of the way while the log is being placed in the veneer machine or on the log supports, and then can be moved up thereto to strip the log of bark.

While the invention is particularly designed for use in connection with veneer machines it can also be used for stripping bark from logs, and poles which should be suitably supported and rotated during the barking operation. The particular means for supporting and rotating the logs however forms no part of the present invention.

The novel barking machine comprises a main frame which can be moved or swung to and from the veneer machine or log supporting device. Upon this main frame is mounted an adjusting or sliding frame which can be shifted transversely of the main frame so as to move the series of scraping knives directly to or from the log. Upon this sliding frame is mounted a swiveled frame carrying the scrapers and capable of horizontal oscillation on the sliding frame so as to permit the scrapers to automatically adjust themselves to the taper and longitudinal irregularities of the log. Upon this swiveled frame is mounted

a series of tiltable and adjustable scrapers which can be simultaneously advanced and held against the log by means of a tilting frame; each scraper however being capable of a limited amount of independent motion sufficient to enable it to follow closely the circumference of that portion of the log against which it acts, and to automatically adjust itself to any circumferential irregularities of the log. By this means the scrapers are yieldingly held to their work and the bark will be entirely peeled from the log in a rapid and effective manner.

The accompanying drawings illustrate a practical form of the machine embodying the invention and we will now describe the same with reference thereto; the essential features and combinations of parts for which protection is desired being set forth in the claims.

In said drawings:—Figure 1 is a top plan view partly in section of the complete machine. Fig. 2 is a front elevation partly broken away, of the machine. Fig. 3 is an enlarged transverse vertical section on line 3—3, Fig. 1. Fig. 4 is a detail view of the pivoted end of the machine. Figs. 5 and 6 are detail sectional views of the locking device for the base frame. Figs. 7 and 8 are detail perspective views respectively of one of the scraper supporting arms and of one of the scraper heads. Figs. 9, 10 and 11 are respectively perspective views of the tilting frame, the oscillating frame, and the sliding frame.

The main frame 1 is provided at its ends with eyes 1<sup>a</sup>, by which it can be pivoted at either end, as desired, on a stud 1<sup>c</sup> fastened to the floor or foundation upon which the machine is supported. As shown frame 1 is pivoted at the left-hand end at 1<sup>c</sup>, and its right-hand end is provided with rollers 1<sup>x</sup> which support it upon a curved track 1<sup>d</sup> which may be bolted to the foundation, so that the main frame 1, with the parts mounted thereon, can be swung to and from the veneer machine, or other mechanism (not shown) by which the log L (Fig. 3) to be barked is supported. The inward movement of the machine toward the log is limited by a stop 1<sup>e</sup>, and the main frame can be locked in its forward working position by means of a dog 2, (see Figs. 3, 5, 6,) pivoted to an arm 2<sup>a</sup> on a short shaft 2<sup>b</sup> journaled between eyes 1<sup>f</sup> on the rear side and one end of the main frame as shown, said shaft carrying an operating lever 2<sup>c</sup>. The dog 2 is



adapted to engage notches 2<sup>e</sup> in a plate 2<sup>f</sup>, bolted to the foundation, as shown; and the dog 2 and arm 2<sup>a</sup> are so proportioned that when the dog engages a notch 2<sup>e</sup> and lever 2<sup>c</sup> is pulled back until the flat heel 2<sup>g</sup> of dog 2 rests upon plate 2<sup>f</sup>, then the axis of the pivot bolt 2<sup>h</sup> connecting pawl 2 to arm 2<sup>a</sup>, passes below a line (indicated at *x* Fig. 6)—drawn between the point of dog 2 and the axis of shaft 2<sup>b</sup>, thus locking the main frame securely in working position. When lever 2<sup>c</sup> is thrown forward, pivot bolt 2<sup>h</sup> is raised until a lug 2<sup>m</sup> on arm 2<sup>a</sup> strikes a lug 2<sup>n</sup> on dog 2, then the latter is raised clear of plate 2<sup>f</sup>, as shown in Fig. 5.

The frame 1 is provided at its ends with transverse guideways 1<sup>g</sup> for the ends of an adjustable sliding frame 3, which is mounted upon frame 1, and capable of movement transversely thereof, but is confined thereon by plates 1<sup>h</sup> bolted to the ends of frame 1 as shown. The sliding frame 3 may be adjusted by any suitable means, but as shown it is provided with a central transverse rack 3<sup>a</sup> on its under side, which rack is engaged by a pinion 4 on a shaft 4<sup>a</sup> journaled in frame 1 and extending longitudinally thereof, and having on its outer end a notched disk 4<sup>b</sup> which is adapted to be locked to a dog 4<sup>c</sup> on a lever 4<sup>d</sup> pivoted on shaft 4<sup>a</sup>, beside disk 4<sup>b</sup>, said lever being guided by a bar 4<sup>e</sup> attached to frame 1, and provided with stop lugs 4<sup>f</sup>, 4<sup>g</sup>, to limit the throw of lever 4<sup>d</sup>. When lever 4<sup>d</sup> is at stop 4<sup>f</sup> and dog 4<sup>c</sup> is engaged with one of the notches in disk 4<sup>b</sup>, the sliding frame 3 is locked in working position. To move the frame forward lever 4<sup>d</sup> is moved forward to upper stop 4<sup>g</sup>, then dog 4<sup>c</sup> is withdrawn from disk 4<sup>b</sup> and lever 4<sup>d</sup> is then moved back to stop 4<sup>f</sup>, and dog 4<sup>c</sup> engaged with another slot in disk 4<sup>b</sup>, and the operation repeated until the sliding frame is in the desired position. By this means the frame 3 can be adjusted back and forth upon the frame 1.

Mounted upon frame 3 is an oscillating or swiveled frame 5, which has a central pivot pin 5<sup>a</sup>, engaging a central socket 3<sup>b</sup> in frame 3, so that while frame 5 is held upon frame 3 it can oscillate longitudinally thereon. Frame 5 is held down upon frame 3 by means of end bearers 5<sup>b</sup> on frame 5, which underlie rollers 3<sup>d</sup> mounted on studs 3<sup>c</sup> rising from the ends of frame 3, as shown. The frame 5 is provided with bearings at its ends for a shaft 5<sup>c</sup> upon which is mounted a series of substantially upright scraper-carrying arms 6, each arm carrying a scraper-head 7. Each scraper head 7 is slotted to embrace the upper part of its supporting arm 6, and is pivoted on such arm as at 7<sup>a</sup> and the scraper head projects both in front of and behind the arm. To the rear end of each scraper-head 7 is pivotally connected one end of a bolt 7<sup>b</sup> by means of a pin 7<sup>p</sup> passing

through an eye on the end of the bolt, while the threaded shank of the bolt extends through an eye 6<sup>a</sup> on the upper end of the scraper arm 6; said bolt being provided with nuts 7<sup>c</sup> and 7<sup>d</sup> at each side of the eye 6<sup>a</sup> by which the inclination of the scraper-head relative to its arm 6 can be positively regulated. Each scraper-head carries a scraping knife 7<sup>e</sup> secured in a slot in the front end of the scraper-head by a set screw 7<sup>f</sup>. The scraper arms 6 are loosely mounted on shaft 5<sup>c</sup> but are yieldingly held in substantially upright position by means of rods 6<sup>b</sup> pivotally connected as at 6<sup>p</sup> to the rear sides of arm 6, below the scraper-heads, and extending through openings 8<sup>a</sup> in the upper end of a tilting frame 8, springs 8<sup>b</sup> being strung on said rods 6<sup>b</sup> between the frame 8 and the arms 6 and normally forcing the arms 6 and tilting frame 8 apart; the extent of separation between said arms and frame being regulated by nuts 6<sup>c</sup> on the rear ends of rods 6<sup>b</sup>. The tilting frame 8 is provided with end and intermediate wing-portions 8<sup>b</sup> and 8<sup>c</sup>, by which it is supported upon the shaft 5<sup>c</sup>, as shown,—so that the frame 8 is tiltable with the scrapers upon the oscillating frame 5. The tilting frame is connected at its rear side to the short arm 9<sup>a</sup> of a lever 9 fulcrumed on a pin 9<sup>b</sup> pivoted between ears 5<sup>e</sup> on swivel frame 5, in rear of pivot 5<sup>a</sup>. Preferably the connection between the tilting frame and lever 9 is a spring link; as shown most clearly in Fig. 3, which link is composed of upper and lower plates 9<sup>c</sup>, 9<sup>d</sup>, an interposed stout helical spring 9<sup>e</sup> and bolts 9<sup>f</sup>, by which the plates 9<sup>c</sup>, 9<sup>d</sup>, are adjustably connected together; the spring 9<sup>e</sup> is a very stout spring and normally keeps the link distended; plate 9<sup>c</sup> is pivotally connected to a lug 8<sup>b</sup> on the tilting frame 8 and plate 9<sup>d</sup> is pivotally connected to the short arm 9<sup>a</sup> of lever 9.

When the frame has been moved into operative position, the operator by depressing lever 9 can throw the tilting frame 8 and the connected series of scraper arms 6 toward the log and hold the scraper-heads 7 against the log with a yielding pressure until the log has been denuded of the bark. The machine may be provided with standards 10 by which it can more readily be swung to and from operative position.

Operation. The machine being arranged adjacent the veneer machine or log supporting device, is held in operative position by the pivot at one end and the locking device at the opposite end. After the log is in position in the veneer machine or other supporting and rotating device, the barking machine is adjusted to working position and the base frame locked; the operator then moves the scrapers toward the log by adjusting the sliding frame 3; the oscillating frame 5 turning on its pivot so that the row of scrapers will practically assume a position parallel with



the opposed surface of the log; which may be irregular or not parallel with the axis of the log; this irregularity may be due to unequal diameters or taper of the log, or to unequal centering thereof. It is preferable to have the log at such a height that the scrapers operate in a plane slightly below the axis or surface of the log as in such position the scrapers have an endangering tendency to cut into the wood. The log should then be rotated in a direction away from the scrapers,—that is the side of a log next the scrapers should move upwardly and then away from the scrapers. The operator then depresses lever 9 which throws the upper end of the tilting frame toward the log and moves the scrapers into contact therewith; and the operator should keep the lever depressed until the bark is removed. The scrapers will thus be set up against the log with more or less powerful spring pressure each scraper head being individually pressed against the log by its spring so that the scraper points are forced into the bark and strip the same from the log. Each scraper arm and scraper is individually spring-controlled and adjustable and should there be any hollows in or projections upon the opposed surface of the logs, the scraper-heads will automatically adjust themselves to such irregularities irrespective of the action of the adjacent scrapers. The pins 7<sup>b</sup> by which the scraper heads are connected to bolts 7<sup>b</sup> are preferably of wood, so that if a scraper-head should catch on a knot or in a hollow in a log, the pin would break and prevent injury to the scraper head or arm.

While the machine is shown as pivoted at one end we do not limit ourselves to this mode of arranging the main frame, although it is a practical and convenient arrangement when the machine is used in connection with a veneer cutting machine.

It will be observed that each scraper-head is adjustable and yieldable, independently of the others, upon and in relation to the tilting frame 5, and oscillating frame 3; also that the whole series of scrapers are yieldable with the tilting frame, and are held against the log with a pressure dependent upon the power exerted upon the lever 9, the pressure being cushioned by the spring 9<sup>e</sup>. Furthermore while in operation the whole series of scrapers is rendered self-adjusting longitudinally of the log by the fact that the frame 5 is capable of oscillation on frame 3. By reason of these several adjustments, and compensating mountings of the scrapers they will act effectively upon the log and thoroughly strip the bark therefrom.

The main frame 1 as stated is adapted to be pivoted at either end, and therefore may be formed with eyes 1<sup>a</sup> and ears 1<sup>f</sup>, and bearings for rollers 1<sup>x</sup> at each end, and sliding

frame 3 can be arranged to be operated from the pivoted end of frame 1, by arranging shaft 4<sup>a</sup> and placing lever 4<sup>d</sup> adjacent the pivoted end of the main frame.

Having described our invention what we claim as new and desire to secure by Letters Patent is:

1. In combination, an adjustable frame, a series of arms pivotally mounted on said frame, scraper-heads adjustably connected to said arms, a tilting frame, and springs interposed between said frame and the said arms; with a lever and a spring-link connecting said lever to said tilting frame for causing the tilting frame to hold the arms and scrapers in operative position.

2. In combination, an oscillating frame, a series of arms pivoted thereon, scrapers adjustably mounted on said arms, a tilting frame pivoted beside the arms and springs interposed between the tilting frame and said arms; with a rocking lever, and a spring connection between said lever and the tilting frame for causing said frame to yieldingly press the scrapers against the log.

3. In combination, a sliding frame, an oscillating frame pivoted thereon, a series of scraper arms pivoted on the oscillating frame, scrapers mounted on said arms, a tilting frame, rods connecting the arms to said tilting frame, springs interposed between the arms and tilting frame, and means whereby the tilting frame may be caused to move and hold the scrapers in operative positions.

4. In combination, a sliding frame, an oscillating frame pivoted thereon, a series of scraper arms pivoted on the oscillating frame, scraper-heads adjustably mounted on the said arms, a tilting frame pivoted on the oscillating frame, rods connecting the arms to said frame, and springs interposed between the arms and frame; with a rocking lever, and a spring-link connecting said lever to the tilting frame whereby the tilting frame may be caused to move and hold the scrapers in operative positions.

5. In a bark-peeling machine, the combination of an adjustable main frame, a transversely movable sliding frame thereon, an oscillating frame on said sliding frame, a tilting frame on said oscillating frame, a series of arms pivoted on the oscillating frame, scraper heads on said arms, spring connections between the tilting frame and the scraper arms, a lever for actuating the tilting frame, and a spring connection between said lever and the tilting frame.

6. The combination of a main frame, a locking device therefor comprising a rock-shaft, an operating lever thereon, an arm connected to said shaft, a dog pivoted to said arm, said dog having a lug on its heel adapted to engage a lug on the arm as the latter is raised, and a ratchet adjacent the frame and adapted to be engaged by said dog.



7. A bark peeling machine comprising a series of pivotally mounted individually yieldable arms, scraper-heads adjustably mounted on said arms, a spring engaging each arm, and a lever and spring connections for yieldingly holding the series of scrapers arms in operative position.

8. A bark peeling machine comprising a frame, a series of arms pivotally mounted on said frame, a scraper head connected to each arm, a tilting frame, a spring interposed between said frame and each of the said arms, and means for causing the tilting frame to yielding hold the arms and scrapers in operative position, and means for simultaneously moving the arms to and from the work.

9. A bark peeling machine comprising an oscillating frame, a series of individually movable arms pivoted thereon a series of scrapers mounted on said arms, a tilting frame pivoted beside the arms, springs interposed between the tilting frame and the several arms, and means for moving all the scrapers to and from the log.

10. In a bark peeling machine, the combination of an adjustable main frame, a sliding frame thereon and movable transversely

thereof, an oscillating frame on said sliding frame, a series of scraper carrying arms pivotally mounted on the oscillating frame, adjustable scraper-heads on said arms, and a lever and spring connection for moving the scraper-arms.

11. In a bark peeling machine, the combination of a pivoted scraper arm, a scraper-head pivoted on said arm, a bolt adjustably connected to the said arm and to said head, and a break-pin connecting said head to said bolt, and means for moving the arm to and from the work.

In testimony that we claim the foregoing as our own, we affix our signatures in presence of two witnesses.

JAMES J. RUSSELL.  
ARTHUR J. BAYLEY.

Witnesses as to signature of James J. Russell:

MAYME A. BECK,  
MAZIE LLOYD.

Witnesses as to signature of Arthur J. Bayley:

JOSIE SHENNERS,  
CHAS. L. BORST.