

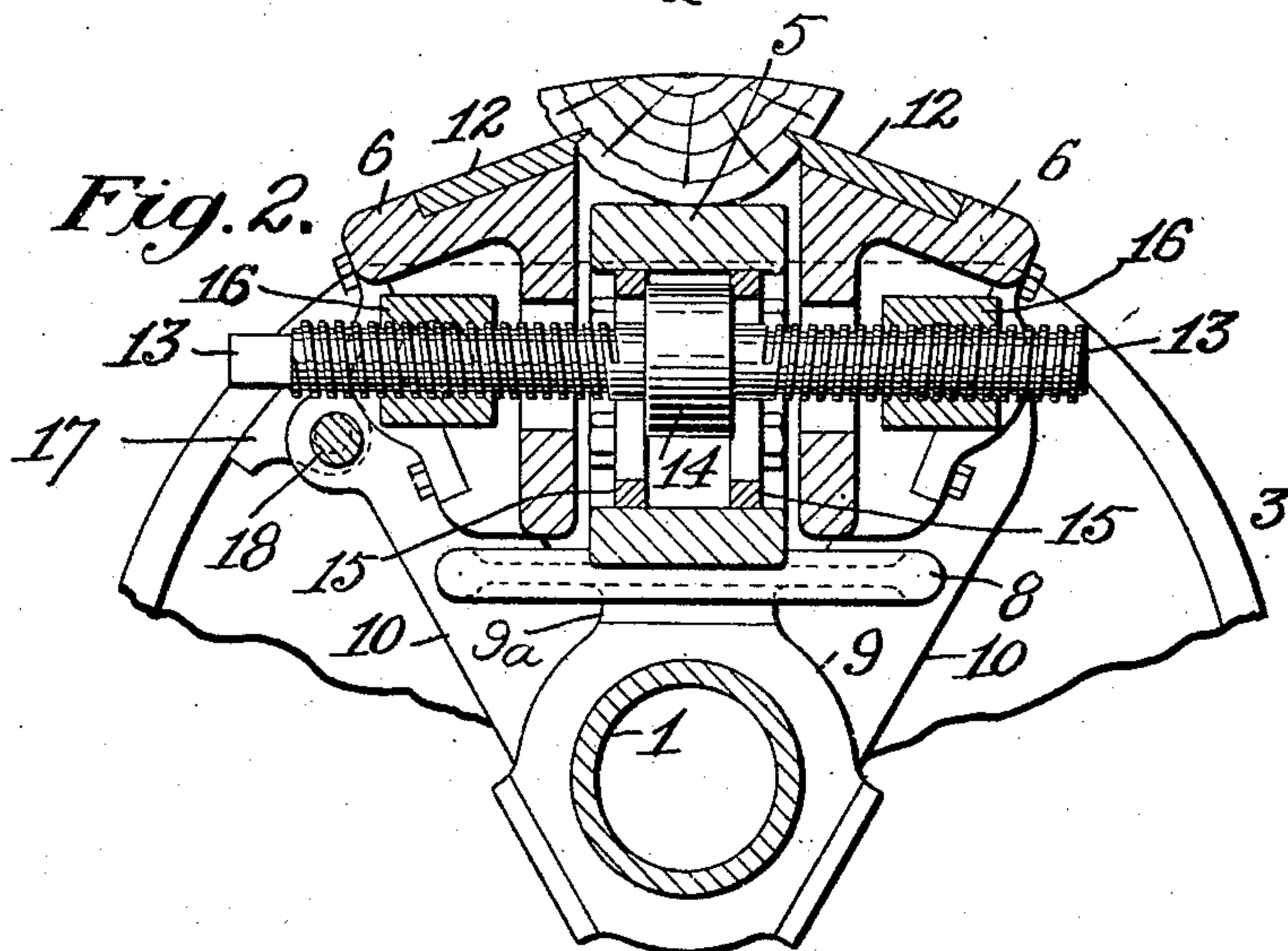
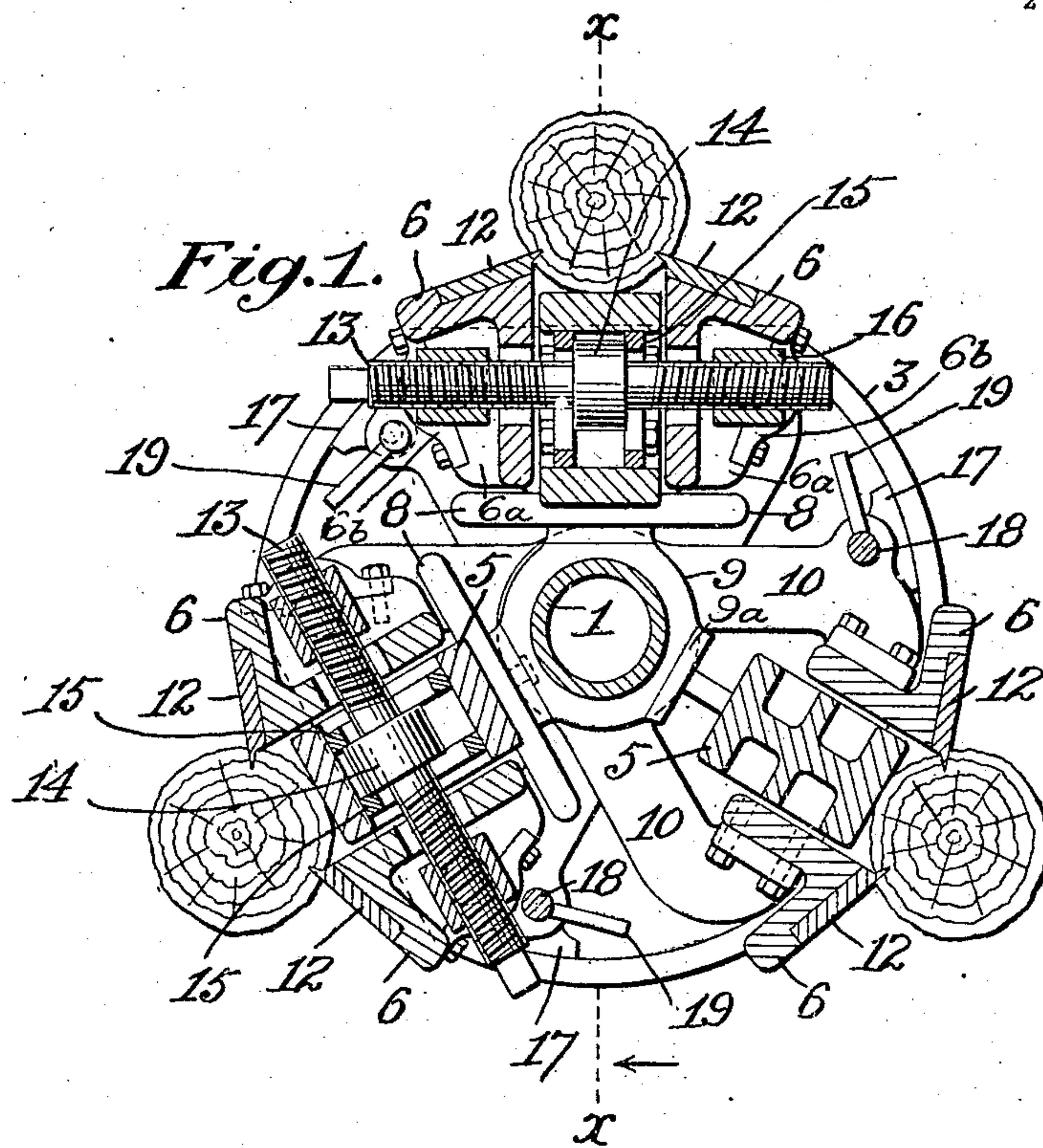
No. 869,270.

PATENTED OCT. 29, 1907.

E. F. SMITH.
STAY LOG.

APPLICATION FILED AUG. 24, 1906.

2 SHEETS—SHEET 1.



Witnesses:
Wm. A. Kelly
M. M. Alcorn

Inventor:
Edwin F. Smith
by Henry D. Williams
Atty.

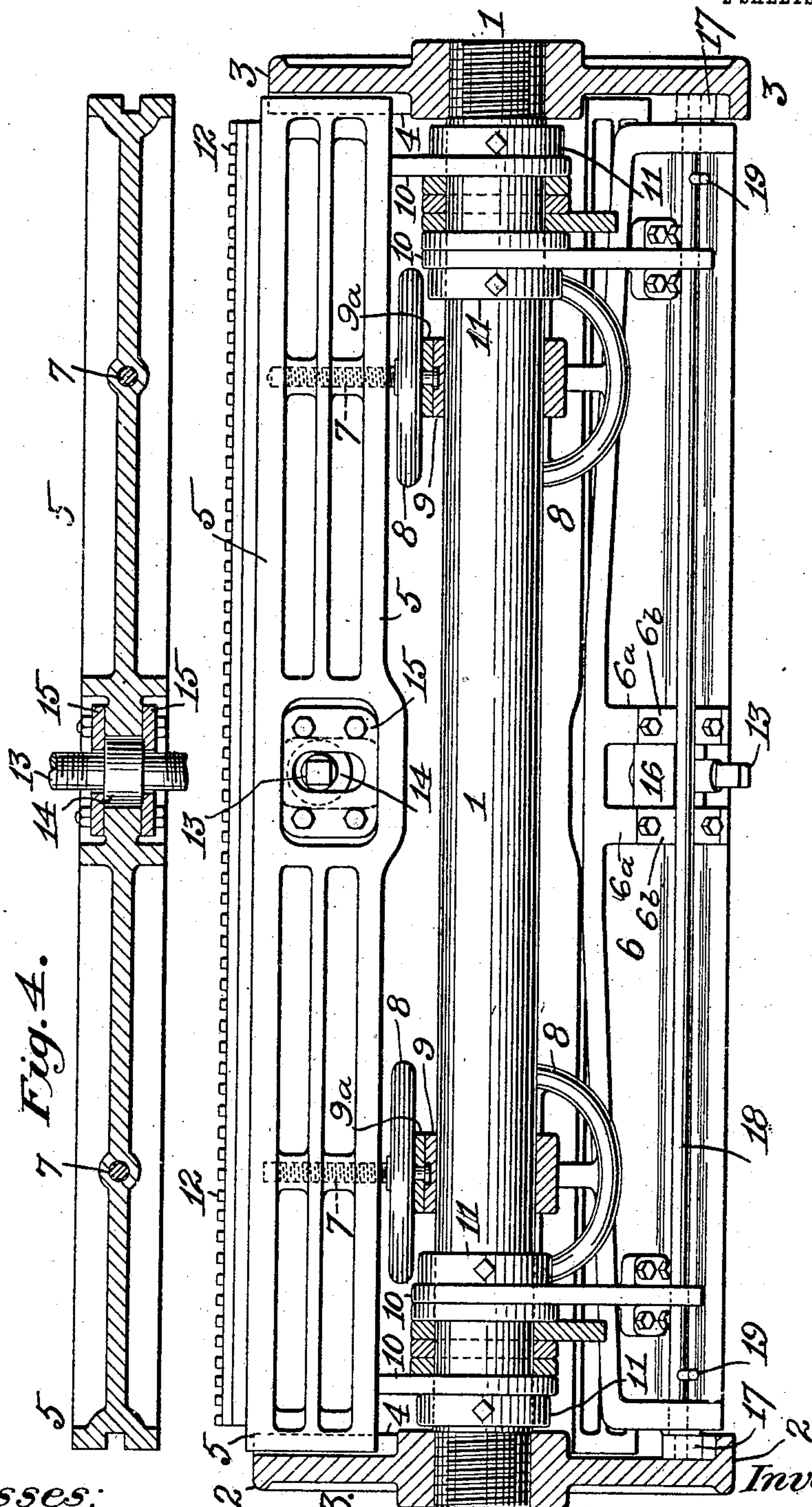
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UNITED STATES PATENT OFFICE.

EDWIN F. SMITH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO EDWIN F. SMITH COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

STAY-LOG.

No. 869,270.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed August 24, 1906. Serial No. 331,892.

To all whom it may concern:

Be it known that I, EDWIN F. SMITH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Stay-Logs, of which the following is a specification, reference being had therein to the accompanying drawings, forming a part thereof.

This invention relates to stay-logs or log-carriers for slicing or veneer-cutting machines, and has for its broad objects economy of material in the slicing or cutting operation and utilization of material heretofore discarded, and also ease and rapidity of insertion and attachment of logs or sections thereof, simplicity and economy of construction and effectiveness of operation, and has for its particular objects greater adaptability to effectively hold logs or sections within wider limits of the sizes thereof, and to gain other evident advantages which will hereinafter appear in the detailed description of the means embodying the invention, and is an improvement upon the patented invention covered by United States Letters Patent No. 828,065, dated August 7, 1906, issued to Edwin F. Smith Company, assignee.

In the former construction, by reason of the back-support having a fixed angular position relatively to one of the clamping jaws, the movement of the clamping jaws relatively to each other was not symmetrical relatively to the back-support and a comparatively small range of movement of the clamping jaws was permissible.

The present invention provides a stay-log, which, while having all the advantages of the former construction, will readily and effectively grip and hold pieces of lumber of a great variety of sizes, and accomplishes this object by a construction in which the back-support will always be centered relative to the clamping jaws in all positions of the clamping jaws.

My present invention also includes the construction of both clamping jaws so as to be movable relatively to the frame and the provision of means to compel the clamping jaws and back-support to rotate with the frame. Other features and objects of my invention will appear from the following description.

I will now describe the stay-log embodying my invention illustrated in the accompanying drawings and will thereafter point out my invention in claims.

Figure 1 is a transverse vertical section of the stay-log. Fig. 2 is an enlarged similar view of the upper part of the same. Fig. 3 is a vertical longitudinal section on a plane indicated by the line $x-x$, Fig. 1. Fig. 4 is a horizontal sectional detail of the back-support.

The frame of the stay-log comprises a central shaft 1 and end spiders 2 and 3, the spiders being shown as screwed upon the ends of the shaft. The shaft is adapted to be carried by the rotating centers of a slicing or cutting machine. The end spiders 2 and 3 are provided

with radial guiding ribs 4 upon which are fitted to slide adjustable back-supports or rests 5 consisting of beams having grooves at their ends (see Fig. 4) to receive the radial guiding ribs 4. Three sets of clamping jaws 6 are shown and three back-supports are provided, one for each set of clamping jaws, each back-support being located medially relatively to its clamping jaws so as to centrally support a log clamped by the clamping jaws. The adjustment of the back-support inward or outward is provided by means of adjusting screws 7 having hand-wheels 8 thereon, two adjusting screws being shown as provided for each back-support. Each hand-wheel is fixed upon its screw and bears at its inner face against a combined thrust and retaining plate 9^a, which is fixed on a flat-face on a thrust-collar 9 secured upon the central shaft 1, the plate 9^a retaining the screw in its place against bodily outward movement by reason of the screw having at its inner end the head 7^a engaging with the retaining plate. Thus endwise movement of the adjustment screw is prevented and rotation of the hand-wheel will cause the back-support to be moved inward or outward.

The clamping jaws 6 are bars of angular cross-section and each clamping jaw has a gripping edge provided by a blade 12 secured to the jaw and having square-shaped gripping teeth (see Fig. 3). Each clamping jaw is mounted upon and carried by two radial arms 10, one at each end of the frame and to which the clamping jaw is shown as secured by bolts. Each arm 10 is loosely fitted upon the central shaft 1 and the six arms at each end of the shaft are arranged side by side between collars 11 on the shaft, which collars are shown as held in place by set-screws.

Means are provided for adjusting the clamping jaws and comprise for each pair of jaws a right and left clamping screw 13 having a central enlargement 14 which plays in a slot in the back-support 5 and between retaining plates 15 bolted to the back-support. The clamping screw is threaded into nuts 16 which are pivoted in bearings in the clamping jaws formed by brackets 6^a thereon and bearing blocks 6^b bolted to the brackets. One end of the clamping screw is shown as squared for convenient actuation of the screw. By reason of the provision of right and left threads the rotation of the clamping screw will cause the two jaws of the clamp to approach to or recede from each other, and thereby open or close the clamping jaws to release or grip the work. As the clamping screw is held by its central enlargement and the retaining plates from moving longitudinally relatively to the back-support, the jaws will always be symmetrical relatively thereto or maintained equidistantly therefrom, so that work of either a larger or smaller size will always have a central support. It is also to be noted that the flat supporting face of the back-support is always kept at right angles to a

radius passing midway between the gripping edges of the blades 12 from the center of rotation of the stay-log, so that the work is always supported squarely.

To relieve the back-support from the thrust of the cutting tool I provide each clamping jaw which is the rear jaw in the direction of rotation of the stay-log, with a thrust-receiving device comprising a pair of gripping shoes 17, which are friction shoes gripping against the inner faces of the rims of the end spiders 2 and 3 respectively. These shoes are supported by and actuated by eccentrics on the rod 18, this rod being supported by and fitted to rotate in the radial arms carrying the clamping jaws and being provided with actuating handles 19 located for convenience in proximity to each end of the rod. These gripping shoes are loosened when the jaws are to be adjusted and are tightened after the adjustment has been completed. Their surfaces may be roughened or they may be replaced by other thrust-resisting means.

In the operation of the machine, the logs or sections of logs are most conveniently inserted with the clamping jaws in upper position and quite widely opened, as the log or section may then be laid upon the back-support 5 and the back-support adjusted by manipulation of the hand-wheels 8 to bring the log or section in proper position for so clamping it as to permit the greater part or the desirable part of the log or section to be sliced, and thus the clamping points may be nicely determined by the adjustment of the back-support.

Thereafter the clamping screw 13 is actuated to cause the clamping jaws to close and to firmly grip the log or section between the clamping blades, the back-support remaining level and stationary relatively to the work which it is supporting while the two clamping jaws are moving toward each other. The other two clamps may then be similarly provided with logs or sections of logs, and the slicing operation may then be carried on in the usual manner by rotation of the stay-log with consequent orbital revolution of the clamping jaws and the logs or sections held thereby. The slicing operation may be continued, if desired, until the wood has been sliced off down to the clamping jaws, thus permitting the utilization of practically all of the desirable part of the lumber. As the clamping jaws are pivotally mounted upon the axis of rotation of the stay-log, the clearance of the slicing knives from these jaws will be the same in all positions of the jaws and irrespective of the dimensions of the log or section clamped by the jaws and the stay-log may therefore carry, during the same slicing operation, logs or sections of different sizes in its several pairs of clamping jaws, and as the back-support is always located medially to the clamping jaws, logs or sections of larger or smaller dimensions will be equally squarely and centrally supported.

It is obvious that various modifications may be made in the construction shown and above particularly described within the principle and scope of my invention.

I claim:—

1. A stay-log adapted to receive rotary motion and comprising two clamping jaws movable toward each other to grip the work, and an adjustable back-support coöperative with the clamping jaws and guided medially relatively thereto.
2. A stay log adapted to receive rotary motion and comprising two clamping jaws, an adjustable back-support located medially relatively to the clamping jaws, and means

for moving the clamping jaws toward each other to grip the work and for maintaining at all times the medial relation of the back-support to the clamping jaws.

3. A stay-log adapted to receive rotary motion and comprising orbitally-revoluble clamping jaws, an adjustable back-support located medially relatively to the clamping jaws and coöperative therewith and rotatable with the clamping jaws, and means for moving the clamping jaws toward each other in a direction transverse to their axis of revolution to grip the work laterally and for maintaining the clamping jaws in such relation to the back-support that the back-support will be at all times centered relatively to the clamping jaws.

4. A stay-log adapted to receive rotary motion and comprising two clamping jaws pivotally mounted at the axis of rotation of the stay-log, means for moving the clamping jaws toward each other to grip the work, and an adjustable back-support coöperative with the clamping jaws and guided medially relatively thereto.

5. A stay-log adapted to receive rotary motion and comprising two clamping jaws pivotally mounted at the axis of rotation of the stay-log, means for moving the clamping jaws toward each other to grip the work, and an adjustable back-support coöperative with the clamping jaws and movable radially to the axis of rotation of the stay-log.

6. A stay-log adapted to receive rotary motion and comprising a frame therefor, two clamping jaws pivotally mounted at the axis of rotation of the stay-log, means for moving the clamping jaws toward each other to grip the work, and an adjustable back-support coöperative with the clamping jaws and guided radially by the frame.

7. A stay-log adapted to receive rotary motion and comprising two clamping jaws movable to and from each other in a direction transverse to their axis of revolution to grip the work laterally, an adjustable back-support coöperative with the clamping jaws, and means for adjusting the clamping jaws and for maintaining the clamping jaws in such relation to the back-support that the back-support will be centered relatively to the clamping jaws.

8. In a stay-log, the combination of a rotary frame, two clamping jaws carried by the frame and movable relatively to the frame and to and from each other in a direction transverse to the axis of revolution of the frame to grip the work laterally, an adjustable back-support coöperative with the clamping jaws, means for adjusting the clamping jaws and for maintaining the clamping jaws in such relation to the back-support that the back-support will be centered relatively to the clamping jaws, and a thrust receiving device for transmitting the rotation of the frame to the clamping jaws.

9. A stay-log adapted to receive rotary motion and comprising a frame, two coöperating clamping jaws movable relatively to the frame in a direction transverse to the axis of rotation of the frame, and releasable means for compelling the clamping jaws to rotate with the frame.

10. A stay-log adapted to receive rotary motion and comprising a frame, two clamping jaws pivotally mounted at the axis of rotation of the frame, and means for compelling the clamping jaws to rotate with the frame.

11. A stay-log adapted to receive rotary motion and comprising a frame, two clamping jaws pivotally mounted at the axis of rotation of the frame, an adjustable back-support located medially relatively to the clamping jaws, and means for compelling the clamping jaws and back-support to rotate with the frame.

12. A stay-log adapted to receive rotary motion and comprising a frame, two clamping jaws pivotally mounted at the axis of rotation of the stay-log, a back-support coöperating with the clamping jaws, means for moving the clamping jaws toward each other to grip the work with the back-support at all times centered relatively to the clamping jaws, and means for compelling the clamping jaws and back-support to rotate with the frame.

13. A stay-log adapted to receive rotary motion and comprising a frame, two clamping jaws pivotally mounted at the axis of rotation of the stay-log, means for moving the clamping jaws toward each other to grip the work, and a thrust receiving device carried by one of the jaws and engageable with the rotating frame.

14. A stay-log adapted to receive rotary motion and com-

prising a frame, two clamping jaws pivotally mounted at the axis of rotation of the stay-log, means for moving the clamping jaws toward each other to grip the work, a thrust receiving device carried by one of the jaws and engageable with the rotating frame, and an adjustable back-support guided medially of the clamping jaws for centrally supporting the work.

15. A stay-log adapted to receive rotary motion and comprising a frame, two clamping jaws pivotally mounted at the axis of rotation of the stay-log, means for moving the clamping jaws toward each other to grip the work, an adjustable back-support guided radially by the frame, and a thrust receiving device carried by one of the jaws and engageable with the frame after the jaws have been adjusted to clamp the work.

16. A stay-log adapted to receive rotary motion and comprising a plurality of pairs of clamping jaws pivotally mounted at the axis of rotation of the stay-log, a back-support for each pair of clamping jaws, and means for

moving the clamping jaws of each pair toward each other to grip the work, with the back-support at all times centered relatively to its clamping jaws. 20

17. A stay-log adapted to receive rotary motion and comprising a frame, a plurality of pairs of clamping jaws pivotally mounted at the axis of rotation of the stay-log, a back-support for each pair of clamping jaws, means for moving the clamping jaws of each pair toward each other to grip the work with the back-support at all times centered relatively to its clamping jaws, and means for compelling the clamping jaws and back-supports to rotate with the frame. 25 30

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

EDWIN F. SMITH.

Witnesses:

A. BIRD SMITH,
THOS. B. SUZIER.