

No. 842,757.

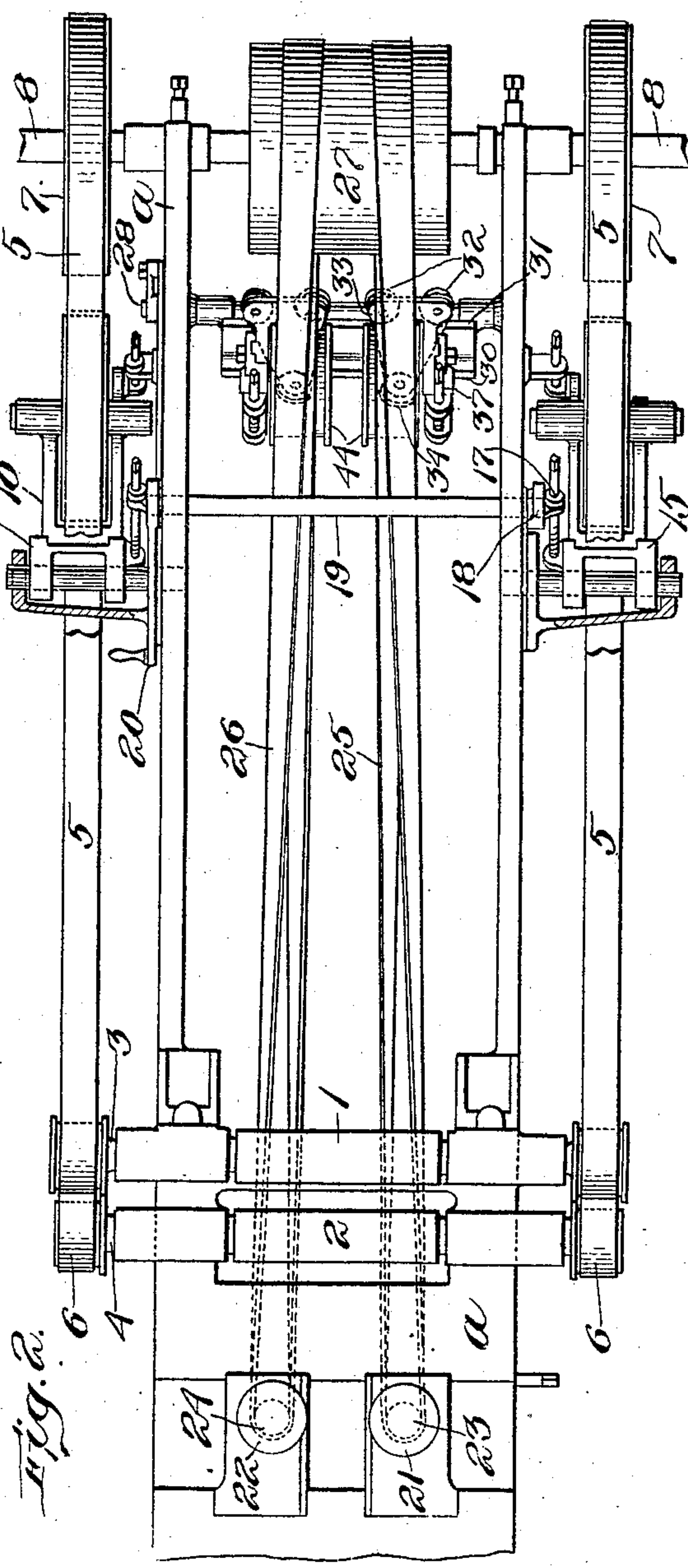
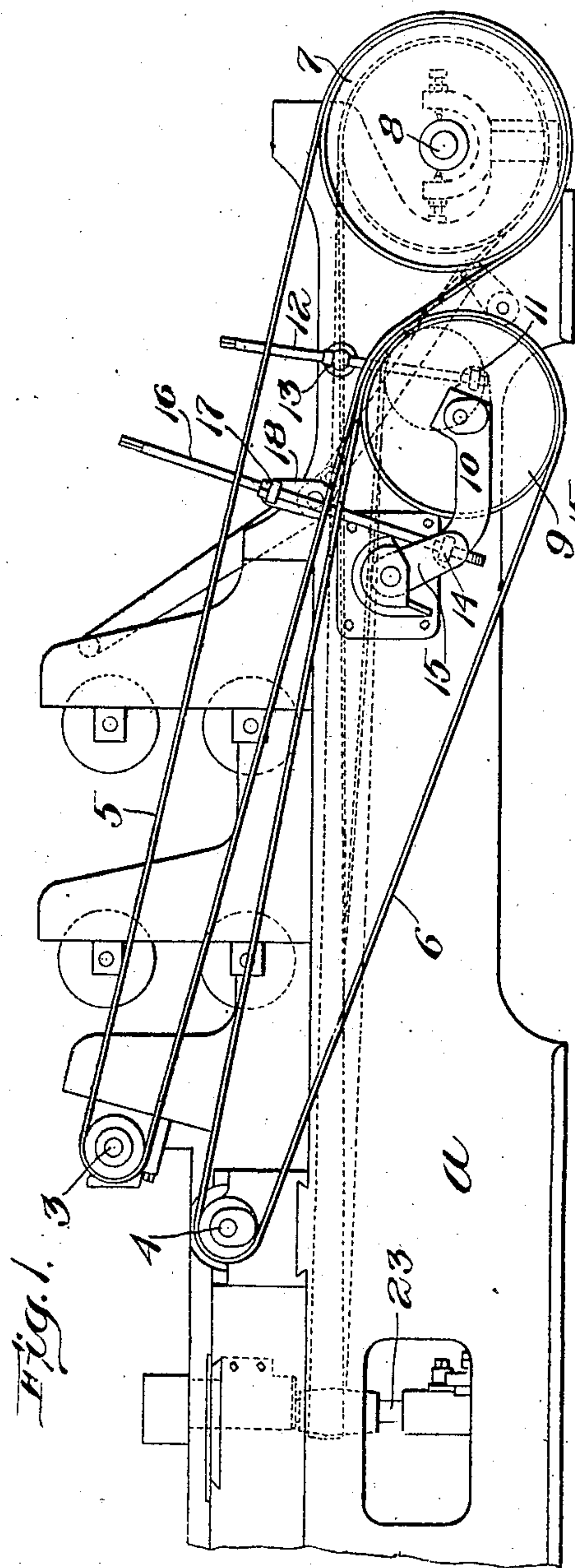
PATENTED JAN. 29, 1907.

C. W. H. BLOOD.

BELT GUIDING AND TIGHTENING MECHANISM.

APPLICATION FILED MAR. 5, 1906.

2 SHEETS—SHEET 1.



Witnesses:

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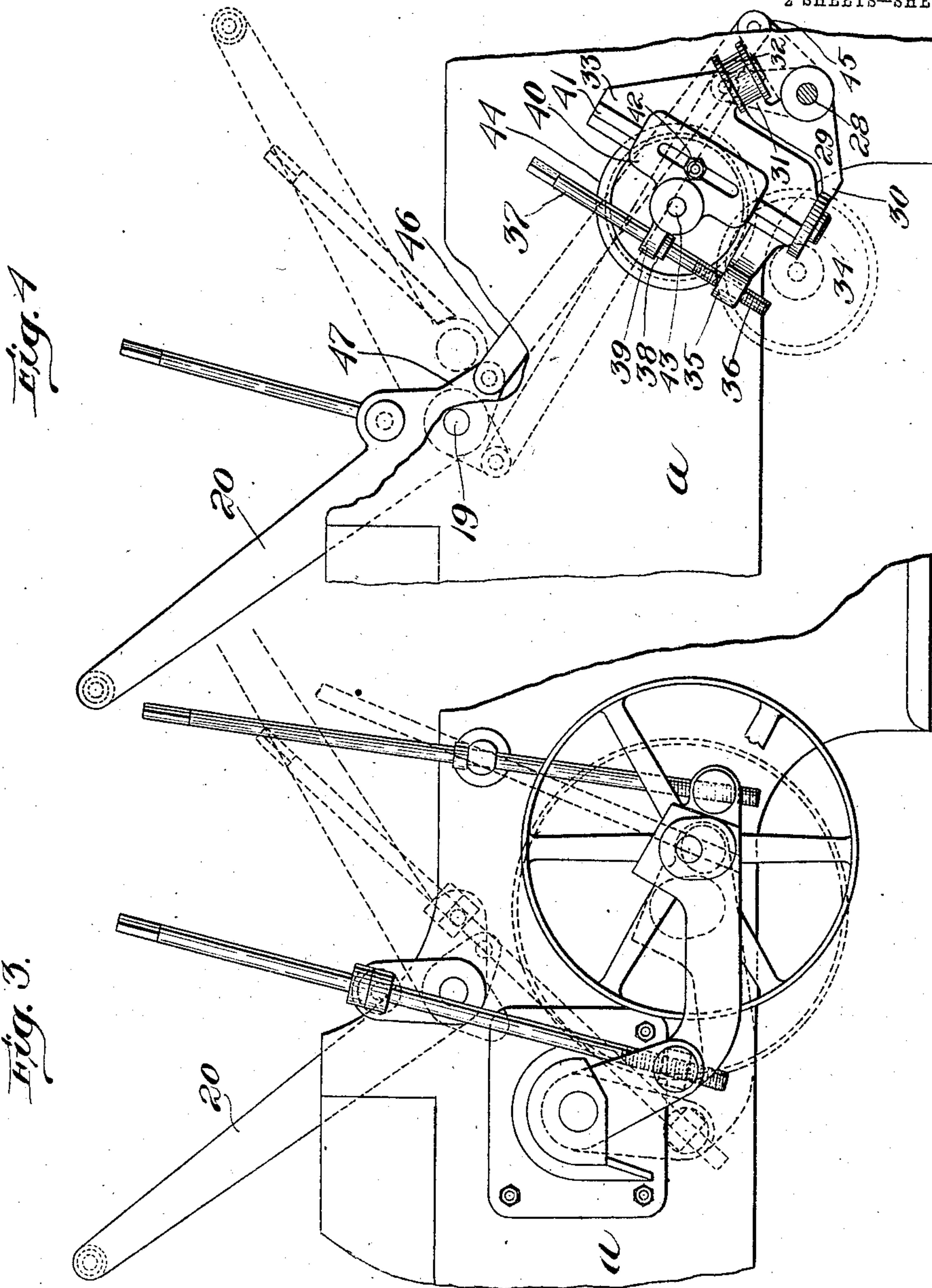
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UNITED STATES PATENT OFFICE.

CHARLES W. H. BLOOD, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO S. A. WOODS MACHINE COMPANY, OF BOSTON, MASSACHUSETTS.

BELT GUIDING AND TIGHTENING MECHANISM.

No. 842,757.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Original application filed June 23, 1904, Serial No. 213,806. Divided and this application filed March 5, 1906. Serial No. 304,210.

To all whom it may concern:

Be it known that I, CHARLES W. H. BLOOD, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Belt Guiding and Tightening Mechanism, of which the following description, in connection with the accompanying drawings, is a specification, like numbers on the drawings representing like parts.

My invention relates to mechanism for guiding and tightening belts where the latter are required to shift toward and from each other, one example of the use of my mechanism being in a wood-planer, and accordingly I have, for the purpose of rendering my invention clear, adopted a wood-planer as the means of illustrating the purposes and uses of the invention.

My present application is a division of my application Serial No. 213,806, filed June 23, 1904, and is shown in connection with the same mechanism more fully shown and explained in the parent application.

The constructional details of my invention and the manner of use and advantages thereof will be more apparent from the following description, taken in connection with the accompanying drawings, showing one embodiment of the invention.

In the drawings, Figures 1 and 2 are general views, in side elevation and top plan, respectively, of a wood-planer constructed to operate with my present invention. Figs. 3 and 4 are enlarged details in side elevation of portions of the apparatus, Fig. 4 showing more particularly the sliding tightener and guide which constitutes the main feature of my present invention.

As already explained, I have chosen for purposes of illustration a wood-planer as showing a machine which may be operated to advantage in connection with my present invention.

In a suitable bed or frame *a* are mounted usual upper and lower horizontal cutter-heads 1 2 and their spindles 3 4 and driving-belts 5 6, the former being driven by a large pulley 7, fast on the drive-shaft 8 and serving to drive the belt 6 by frictional engagement, said belt 6 being supported by swinging hangers carrying pulleys 9, said hangers including a bracket or link 10, supported at

one end at 11 by an adjustable rod 12, pivoted at 13 in the frame of the machine, said link 10 being pivotally connected at its opposite end at 14 to a link 15 and a rod 16, adjustably mounted at 17 in a crank 18, fast on a rock-shaft 19, operated by a handle 20 at the far side of the machine, where the opposite belt is supported in exactly the same manner as the near belt 5, the parts being similarly numbered. The links 15 16 constitute a toggle.

Coöperating with the upper and lower cutter-heads 1 2 are matcher-heads 21 22 and their vertical spindles 23 24, driven by belts 25 26 from a drum 27 on the main drive-shaft 8. As the matcher-heads are adjusted toward and from each other for different widths of lumber, it is desirable that their belts should be moved laterally automatically by the action of the belts, and it is also desirable that as the lever 20 of the belt-tightening mechanism is moved to tighten the belt 5 the belts 25 26 of the matcher-heads should be similarly tightened, and accordingly I have combined the tightening and guiding means for the belts 25 26 in one mechanism, mounted on a track or supporting means and rendered capable of swinging or tipping in such manner that while capable of tightening the matcher-head belts they are likewise at the same time capable of shifting automatically toward and from each other, according to the position assumed by said matcher-head belts. As already pointed out, I have chosen a preferred embodiment of my invention for the purpose of explaining and making the same clear in this specification. Referring, therefore, more particularly to Figs. 2 and 4, I have mounted fixedly on a transverse shaft 28 a triangular frame 29, having opposite tracks or ways 30 31, the latter being embraced by the flanges of a pair of trolleys or rollers 32, depending from a bracket 33, and the track 30 being engaged by a third wheel or antifriction-roller 34.

At its lower end the bracket carries a heavy supporting-arm 35, in which is threaded the lower end 36 of an adjusting-screw 37, which is provided with a shoulder 38, engaging the under side of an ear 39 of a bracket or plate 40, clamped rigidly against guides 41 on the outer face of the bracket 33 by an adjusting-bolt 42. The plate 40 carries a horizontal

shaft 43, on which is journaled a guide-pulley 44 for receiving and supporting the adjacent matcher-head belt.

From the above description it will be readily understood that the bracket and guide-pulley and all the parts thereof are freely movable laterally along the tracks 30 31, practically all the weight and resistance being borne by the two trolleys on the upper track 31 and guided by the guide-wheel or antifric-tion-roller on the lower track 30. Two of these laterally-shiftable devices are provided, being constructed exactly alike excepting that the guide-pulleys thereof are placed facing each other on the inner sides of the respective supporting-brackets, so that they may shift automatically close to each other if it is desired to bring the belts that near together.

The shaft 28 extends beyond the frame *a* at the right-hand side of the machine, (see Fig. 2,) where it is provided with a crank 45, connected by a link 46 to a crank 47, projecting rigidly from the rock-shaft 19, already mentioned and herein shown as formed integrally with the operating lever or handle 20.

In practice it will be readily understood that when it is desired to shift the matcher-heads and their spindles or the horizontal cutter-heads and their spindles, or all or any of them, all the belts are simultaneously slackened simply by moving the hand-lever 20 over toward the right to the dotted-line position, Fig. 4, and all of said belts are simultaneously tightened by moving said hand-lever toward the left to its full-line position. The belts 25 26 are guided by the opposite pair of pulleys 44, which are always free to move toward and from each other to automatically accommodate themselves to whatever positions the belts may assume.

If either of the belts requires independent tightening, it may be accomplished by loosening the adjusting-bolt 42 and turning up the screw 37 of that particular belt-tightener.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A machine, comprising rotary spindles, driving-belts therefor and separate belt-

tighteners for said belts, having a common supporting-frame mounted to swing and provided with a longitudinal track, said belt-tighteners including brackets, and rollers mounted on said brackets to travel on said track, pulleys mounted in said brackets to engage said belts, and means for swinging said frame.

2. In a machine of the kind described, driving mechanism, including belts, laterally shiftable toward and from each other, and belt-tighteners for said belts, comprising a swinging frame, provided with a longitudinal track, brackets sliding on said track, pulleys adjustably supported in said brackets to engage said belts, and means for swinging said frame.

3. In a machine of the kind described, driving mechanism, including belts laterally shiftable toward and from each other, and belt-tighteners for said belts, comprising a frame provided with a track, brackets sliding on said track, belt-pulleys mounted in said brackets, and means for swinging said frame.

4. In a machine of the kind described, driving mechanism, including belts laterally shiftable toward and from each other, a swinging frame provided with a track, carriers provided with rollers, movable longitudinally on said track, and belt-pulleys journaled in said carriers for engaging said laterally-shiftable belts.

5. In a machine of the kind described, driving mechanism, including belts laterally shiftable toward and from each other, a track movable up and down, supporting-carriers movable longitudinally toward and from each other on said track, belt-pulleys supported by said carriers for engaging said laterally-shiftable belts, means for moving said track and thereby simultaneously moving said pulleys, and means for independently adjusting the normal height of the pulleys with relation to said track.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES W. H. BLOOD.

Witnesses:

H. A. PERKINS,
C. G. OSTEMAN.