

No. 725,120.

PATENTED APR. 14, 1903.

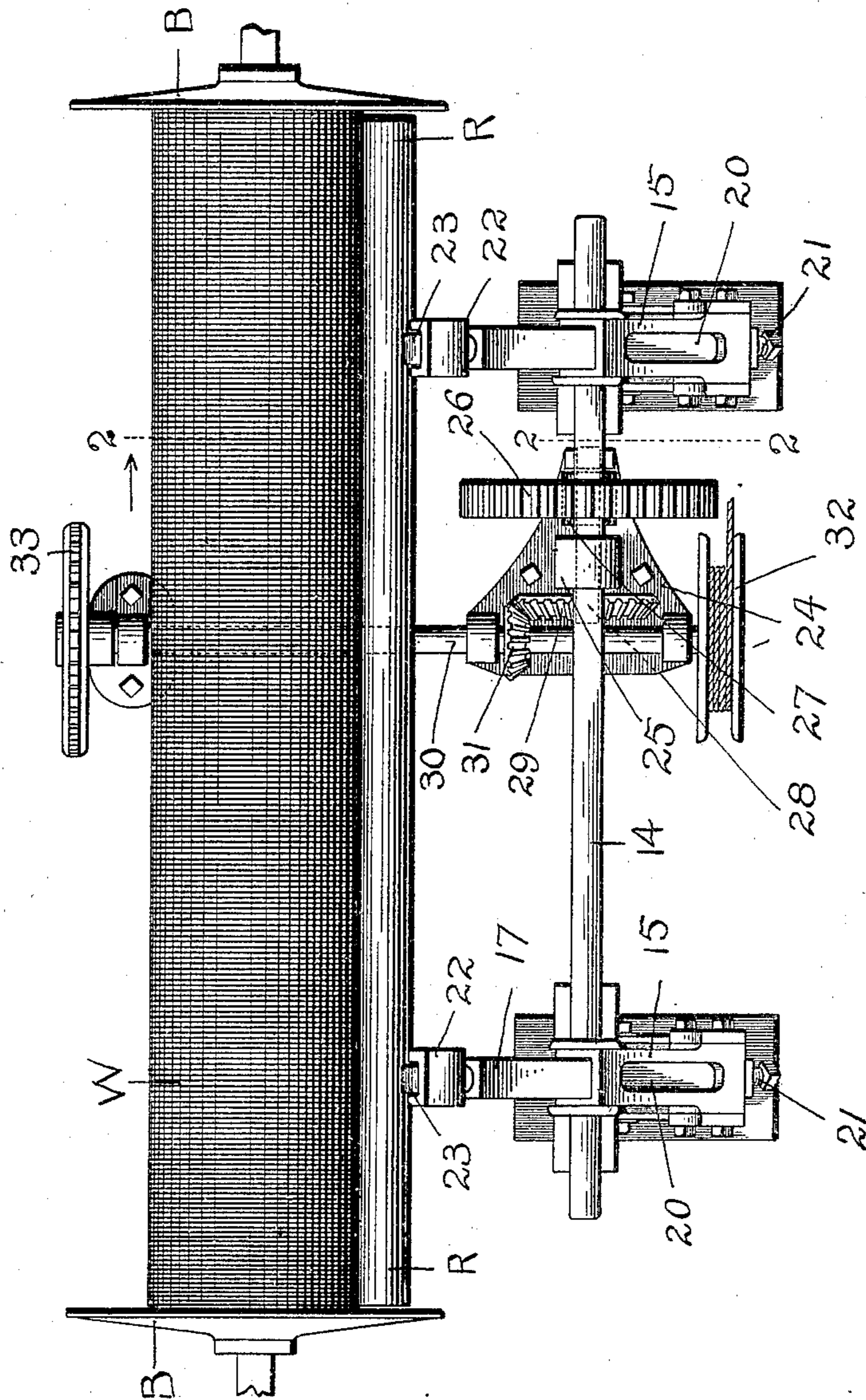
J. McCALLUM.

PRESSING ATTACHMENT FOR BEAMING MACHINES.

APPLICATION FILED MAY 4, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



1001.

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2 SHEETS—SHEET 2.

Fig. 5.

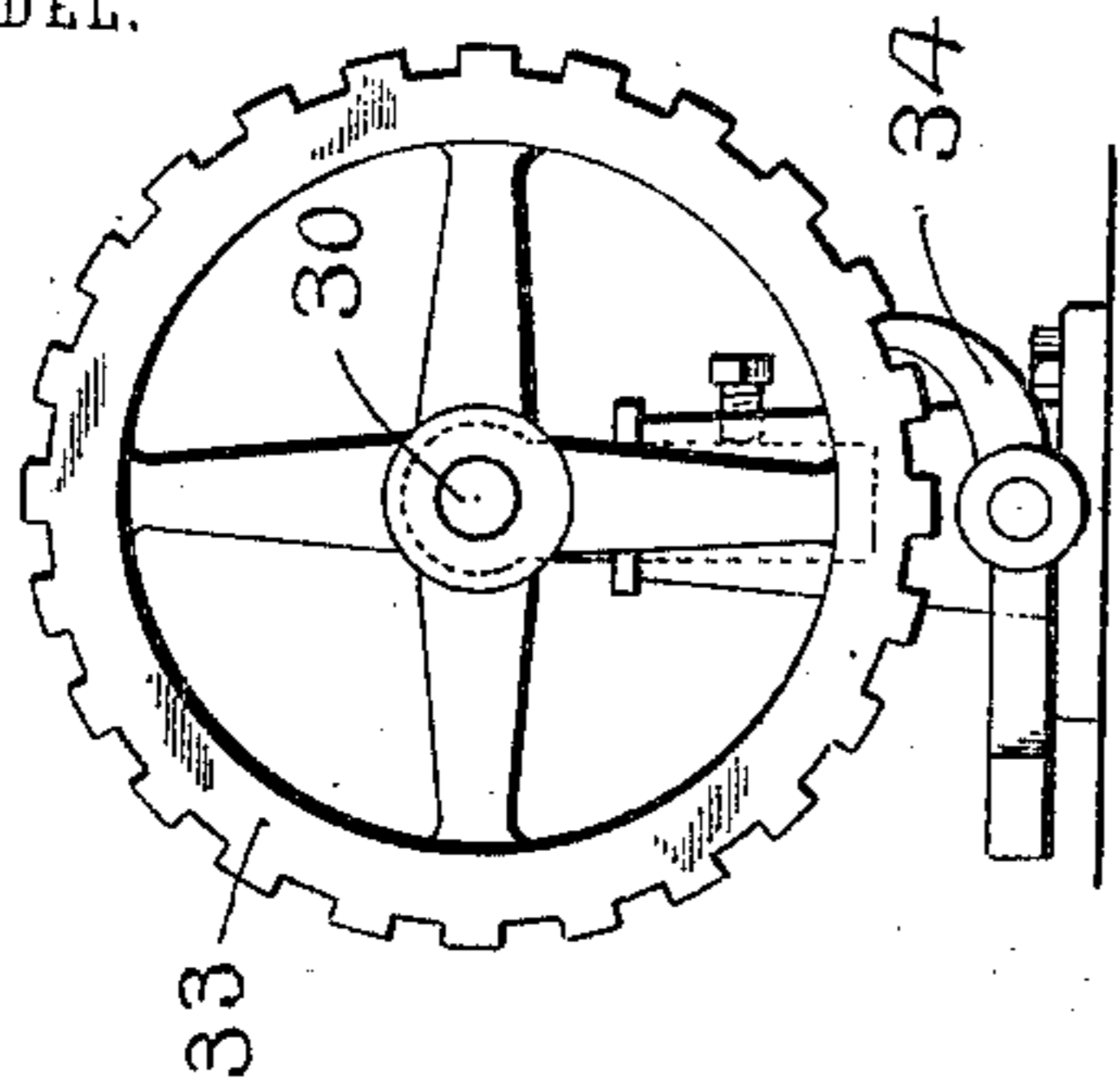


Fig. 4.

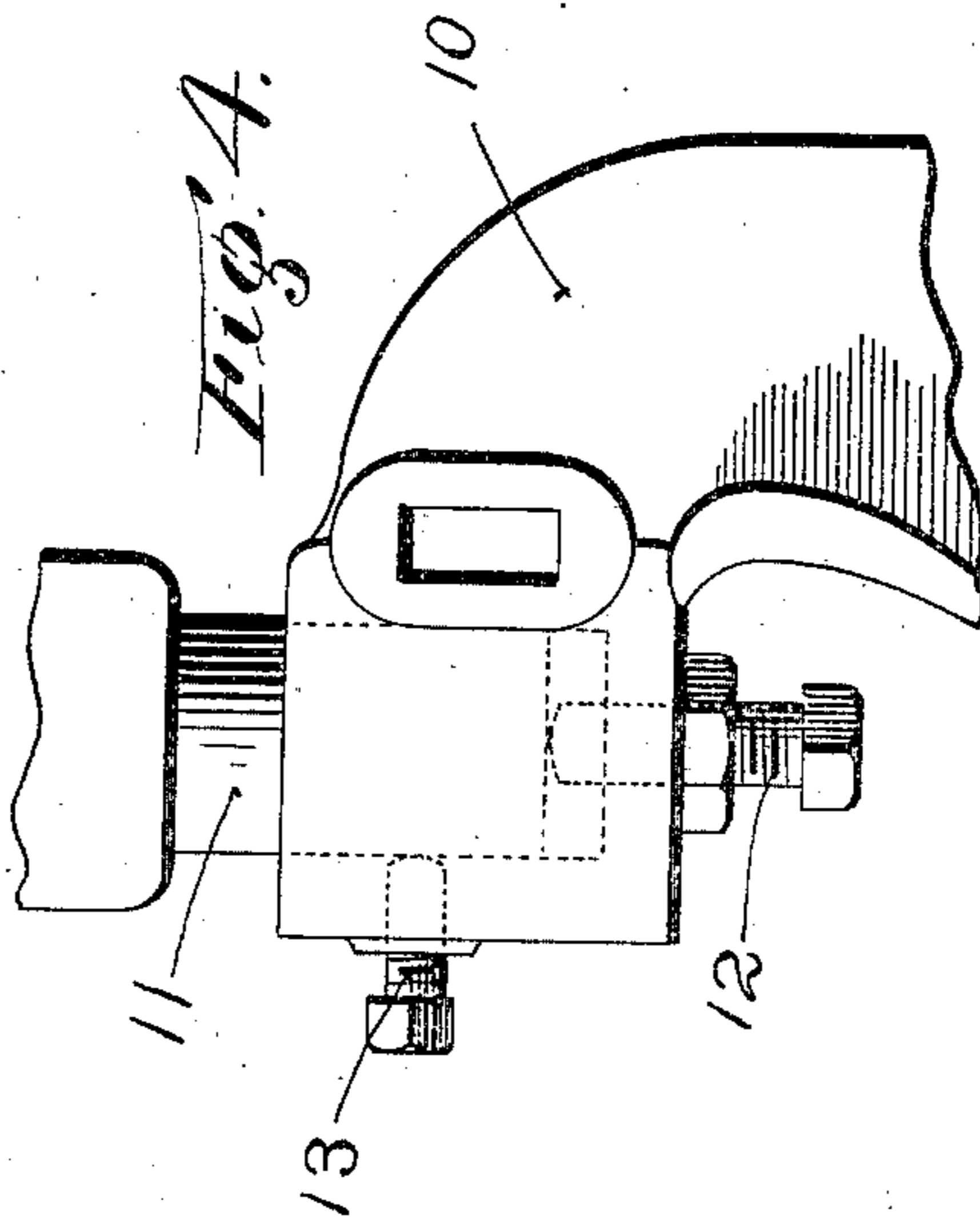


Fig. 3.

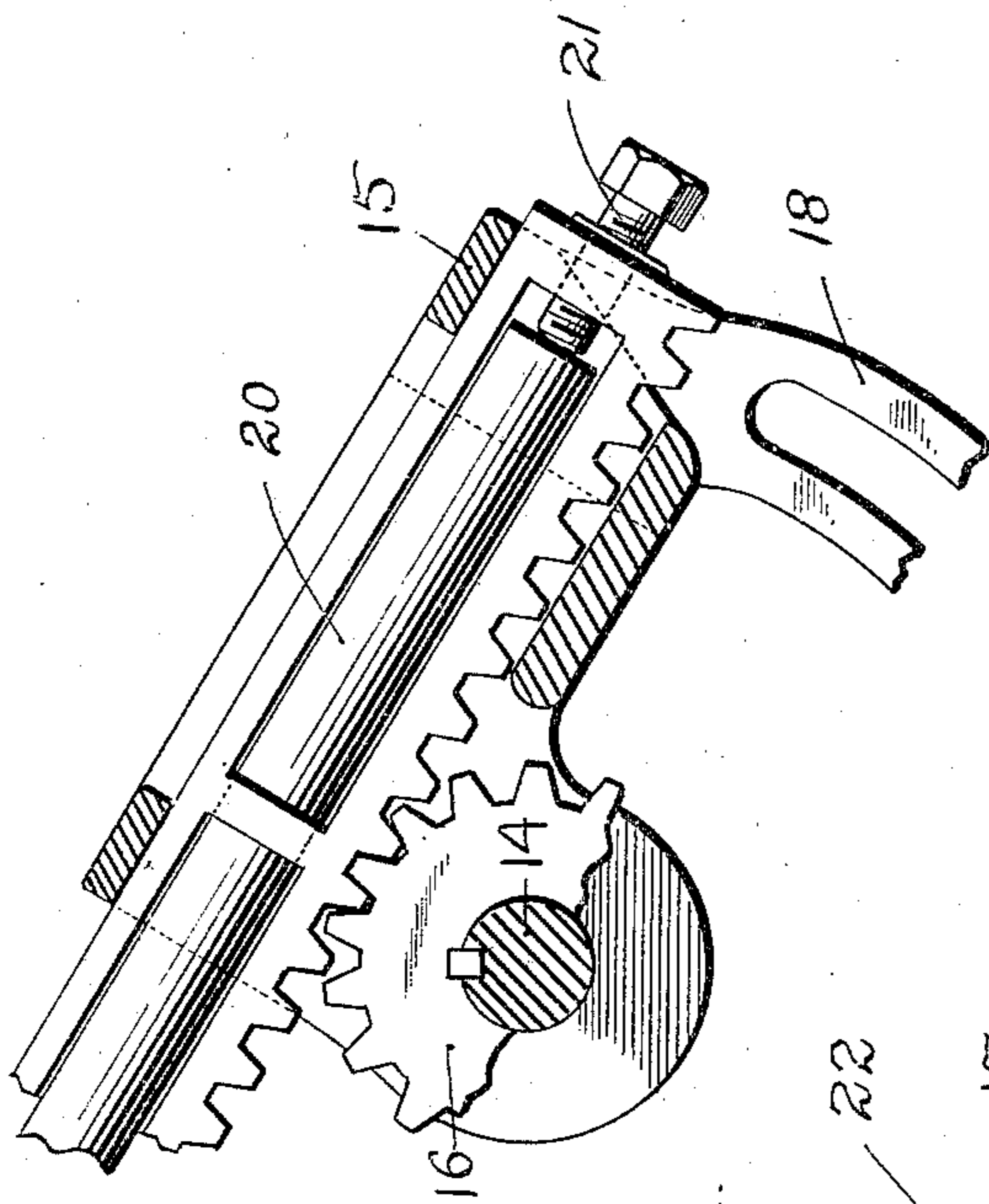
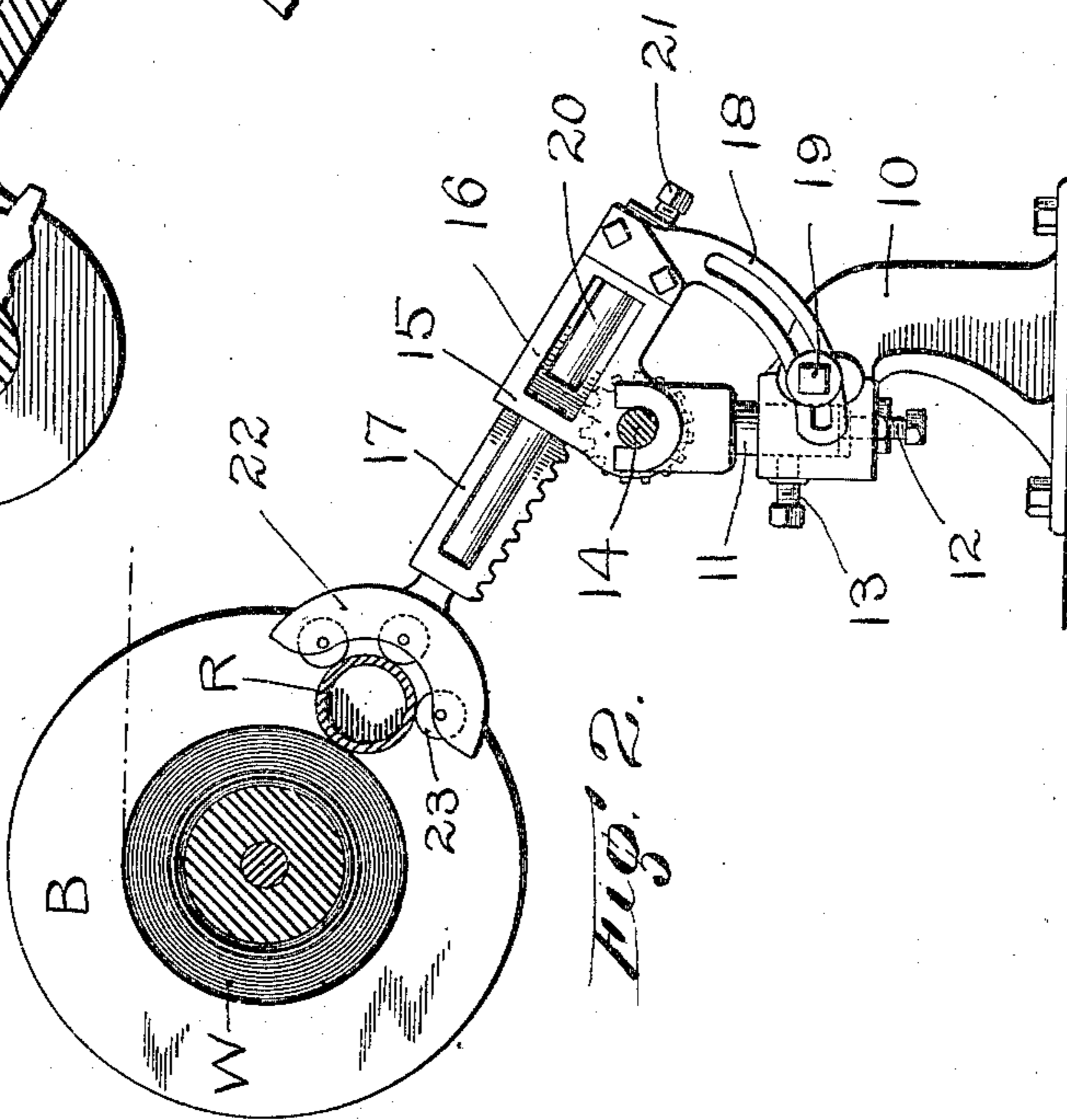


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES McCALLUM, OF WORCESTER, MASSACHUSETTS.

PRESSING ATTACHMENT FOR BEAMING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 725,120, dated April 14, 1903.

Application filed May 4, 1901. Serial No. 58,783. (No model.)

To all whom it may concern:

Be it known that I, JAMES McCALLUM, a subject of the King of England, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Pressing Attachment for Beaming-Machines, of which the following is a specification.

This invention relates to an attachment for applying pressure to the warp-threads as the same are being wound around a warp-beam in an ordinary warp-beaming apparatus.

The especial objects of this invention are to provide an attachment for beaming-machines which is constructed to apply pressure to the warp-threads as the same are being beamed, which pressure will be applied in the same direction and kept constant in amount independently of the size of the spool or core formed by the warp-threads; to provide a construction which can be readily trued or adjusted to apply equal pressures at opposite ends of the warp-beam independently of imperfections in the beaming-machine or inequalities of the floor on which the attachment is placed; to provide a construction having a multiplying gearing, enabling a comparatively small weight to apply a sufficiently heavy pressure, and to provide simple and convenient retracting or releasing mechanism for throwing the pressing attachment out of operation when desired.

To these ends this invention consists of the pressing attachment for beaming-machines and of the combinations of parts therein, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings I have shown only sufficient parts of a beaming-machine to illustrate the application of my invention thereto.

In the drawings, Figure 1 is a plan view illustrating the operation of my pressing attachment as applied to a warp-beam. Fig. 2 is a transverse sectional view of the same, taken on the line 2 2. Fig. 3 is an enlarged fragmentary view of one of the sliding rack-frames and a portion of the gear for operating the same. Fig. 4 is an enlarged fragmentary view of one of the overhanging bearings, and Fig. 5 is an enlarged detail view

of the hand-wheel and pawl for throwing the pressing attachment out of operation.

In the use of beaming-machines for winding warp-threads onto warp-beams it is desirable to provide an attachment for ironing or rolling the warp-threads as the same are wound, so as to insure winding the warps in even layers and the production of a compact even warp-beam. In the presser-roll attachments which have heretofore been employed the presser-rolls have heretofore ordinarily been mounted in pivoted or swinging supports, which are forced back as the warp-beam increases in size. In the use of these presser-roll attachments for beaming-machines the swinging back of the pivoted arms or supports brings the presser-roll to different points on the warp-beam, and on this account the degree of pressure exerted at different stages of the winding of a warp-beam is subject to considerable variation. To avoid these objections, I have provided a presser-roll attachment for warp-beaming machines in which the presser-roll is held up into engagement with the warp-beam by slides, which are forced back in a straight line as the warp-beam increases in size. These slides are preferably set to move back on radial lines with respect to the warp-beam, so as to cause the presser-roll to exert its pressure at a fixed point on the periphery of the warp-beam and to apply uniform pressures at all stages of the winding thereof.

Referring to the accompanying drawings and in detail, a warp-beam or large spool of ordinary construction is shown as provided with heads B, the warp-threads W being wound upon the body portion of the beam between the heads thereof. Bearing upon the rear side of the warp-beam is a presser-roller R. The presser-roller R may be formed of an ordinary pipe-section, as herein shown, or may be of any of the ordinary types of presser-roll.

As shown most clearly in Fig. 2, a presser-roll attachment for beaming-machines constructed according to my invention is supported on the floor at the rear of the warp-beam, preferably by means of two or more supports 10, having overhanging bearings. Mounted in the overhanging bearing of each support 10 is a vertically-adjustable spindle

11, which may be set to different heights to compensate for irregularities in the floor by means of a bolt 12 and may be clamped in its adjusted position by a bolt 13. At its upper end each spindle 11 is provided with bearings for receiving the main shaft 14. Swiveled on the main shaft 14 and retained in place by the bearings before referred to is a guide-frame 15, the side pieces of which inclose a pinion or gear 16 upon the main shaft 14. Extending down from each of the frames 15 is a slotted curved clamping-arm, which receives a bolt 19 for holding the frame 15 in different angular positions on its shaft 14. Mounted in and longitudinally movable through each of the guide-frames 15 is a rack-frame 17, having teeth on its under side meshing with the gear or pinion 16. Journaled in and longitudinally adjustable in the rack-frame 17 by means of an end bolt or screw 21 is a spindle 20. At its front end the spindle 20 is provided with an end piece 22, having rollers 23 journaled therein in position to bear upon and hold the presser-roller R up into engagement with the warp-beam.

The end piece 22 may be substantially of a crescent shape, as shown in the drawings, although, if preferred, the horns or jaws of the end piece 22 may be of sufficient length to form a cradle for supporting the presser-roll R when the attachment is drawn back from the warp-beam, as hereinafter described.

By means of the construction thus far described it will be seen that the rack-frames or slides 17 may be tipped or tilted at different angles, said slides being preferably adjustable so as to move substantially on radial lines with respect to the warp-beam, while by adjusting the bearings of the main shaft by means of the set-screws 12 and 13 and by adjusting the spindles 20 in the frames or slides 17 by means of the bolts or screws 21 the attachment may be set or adjusted to compensate for any imperfections in the beaming-machine or any irregularities of the floor on which the attachment is placed.

The gearing for turning the main shaft 14 to operate the slides 17 is most clearly illustrated in Fig. 1. As shown in this figure, the main shaft 14 passes through a box or bearing 25, carried by a middle bearing-piece 24. At the side of its box 25 the main shaft 14 is provided with a large gear 26, meshing with a smaller gear 27, secured on one end of a small shaft 28, journaled in the bearing-piece 24 below the main shaft 14. Fastened on the opposite end of the small shaft 28 is a large bevel-gear 29, which meshes with and is driven from a smaller bevel-pinion 31, secured on a cross-shaft 30. The cross-shaft 30 is provided at its rear end with a flanged wheel or drum 32, coiled on which is a cord or rope, which may be connected to a weight hung from any suitable overhead pulleys in the ordinary manner. By means of the two sets of multiplying gearing—to wit, the bevel-gears 29 and 31 and the gears 26 and 27—a

comparatively small force tending to turn the cross-shaft 30 may be made to apply a comparatively heavy pressure to the presser-roller R, and I consider this a feature of advantage not only for the reason that it enables me to employ a comparatively light weight for operating my presser-roll attachment for warp-beam machines, but I have also found this a feature of advantage, since it enables me to turn or operate the cross-shaft 30 by hand with comparative ease when it is desired to release or draw back the presser-roll.

The construction I employ for releasing the presser-roll is most clearly illustrated in Fig. 5. As shown in this figure, the cross-shaft 30 is provided at its front end with a hand-wheel 33. The hand-wheel 33 is provided around its periphery with notches forming teeth which coöperate with a weighted pawl 34, said parts being arranged so that when the hand-wheel is turned to release the pressure on the presser-roll the pawl will hold said parts in their retracted or drawn-back position.

I am aware that numerous changes may be made in the construction of my presser-roll attachment for warp-beaming machines by those who are skilled in the art without departing from the scope of my invention as expressed in the claims. I do not wish, therefore, to be limited to the form I have herein shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a presser-roll attachment for warp-beaming machines, the combination of a roll bearing on the warps as they are wound on a warp-beam, a plurality of slides for applying pressure to the roll, and arranged to be forced back on straight lines, and means for setting said slides at various inclinations.

2. In a presser-roll attachment for warp-beaming machines, the combination of a roll bearing on the warps as they are wound on a warp-beam, slides for applying pressure to said roll, and pinions or gears, said slides being provided with rack-teeth which mesh with the pinions, so that the slides or rack-frames will be actuated thereby.

3. In a presser-roll attachment for warp-beaming machines, the combination of a main shaft, means for adjusting the bearings of the main shaft to compensate for inequalities of the floor or support upon which the attachment is mounted, guide-frames pivoted on the main shaft, a rack-frame or slide mounted in each guide-frame, a slotted adjusting-arm for holding each guide-frame at the desired inclination, a spindle or slide adjustably mounted in each rack-frame, and having bearings or rollers for applying pressure to the presser-roll.

4. In a presser-roll attachment for warp-beaming machines, the combination of a roll arranged to bear on the warp-threads as they are being wound, a weight, multiplying gearing for applying a heavy pressure from said weight to the roll, and hand-operated con-

nections for retracting said weight, said parts being arranged so that the hand-operated connections for retracting the weight will not be required to overcome as heavy a pressure as that applied to the presser-roll.

5 In a presser-roll attachment for warp-beaming machines, the combination of a roll arranged to bear on the warp-threads as they are being wound, a main shaft, connections
10 controlled from the main shaft for applying pressure to the roll, a secondary shaft, multiplying gearing connecting the secondary shaft and main shaft, and a weight and hand-operated connections for turning the second-
15 ary shaft in relatively opposite directions, said parts being arranged so that a comparatively small force applied to the secondary shaft will apply a heavier pressure to the main shaft.

20 6. In a presser-roll attachment for warp-beaming machines, the combination of a main shaft, connections from the main shaft for applying pressure to the presser-roll, a cross-shaft at right angles to the main shaft, a
25 drum on the main shaft having a cord wound thereon to be operated by a weight, means for turning the cross-shaft by hand, and mul-

tiplying gearing connecting the cross-shaft and main shaft, said parts being arranged so that the cross-shaft may be turned by hand 30 with comparative ease, and a comparatively light weight may be employed for applying a heavier pressure to the presser-roll.

7. In a presser-roll attachment for warp-beaming machines, the combination of a main 35 shaft, connections from the main shaft for applying pressure to the presser-roll, a cross-shaft at right angles to the main shaft, multiplying gearing connecting the main shaft and cross-shaft, means for turning the cross- 40 shaft from a weight or similar device, a hand-wheel on the front end of the cross-shaft, and a weighted pawl for engaging notches in said hand-wheel to hold the presser attachment back out of operation when the same has 45 been moved back by hand.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES MCCALLUM.

Witnesses:

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