W. O. WAIT.

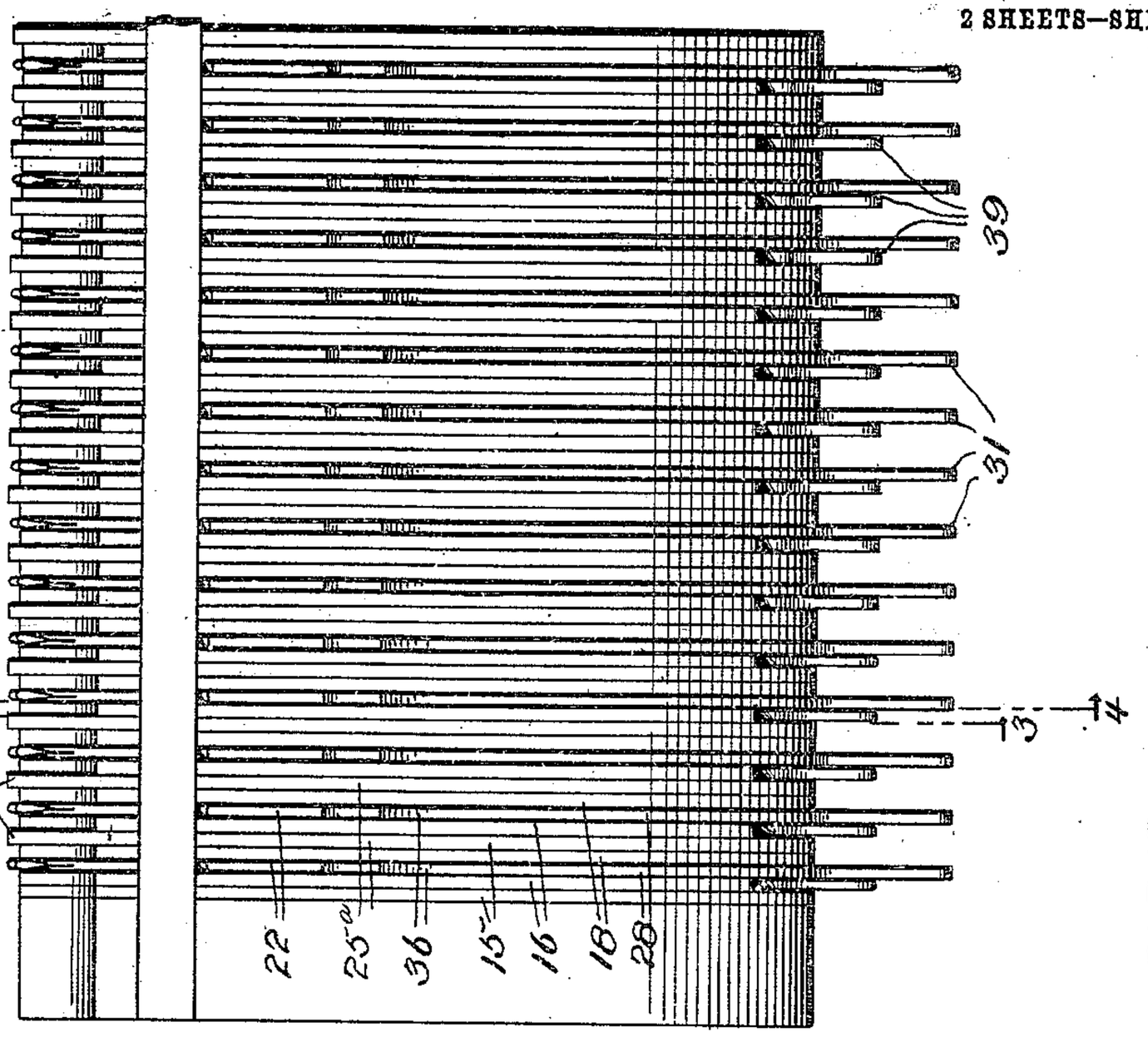
KNITTING MACHINE BED.

APPLICATION FILED APR. 22, 1909.

959,822. Patented May 31, 1910.

2 SHEETS—SHEET 1.

FIG. 2.



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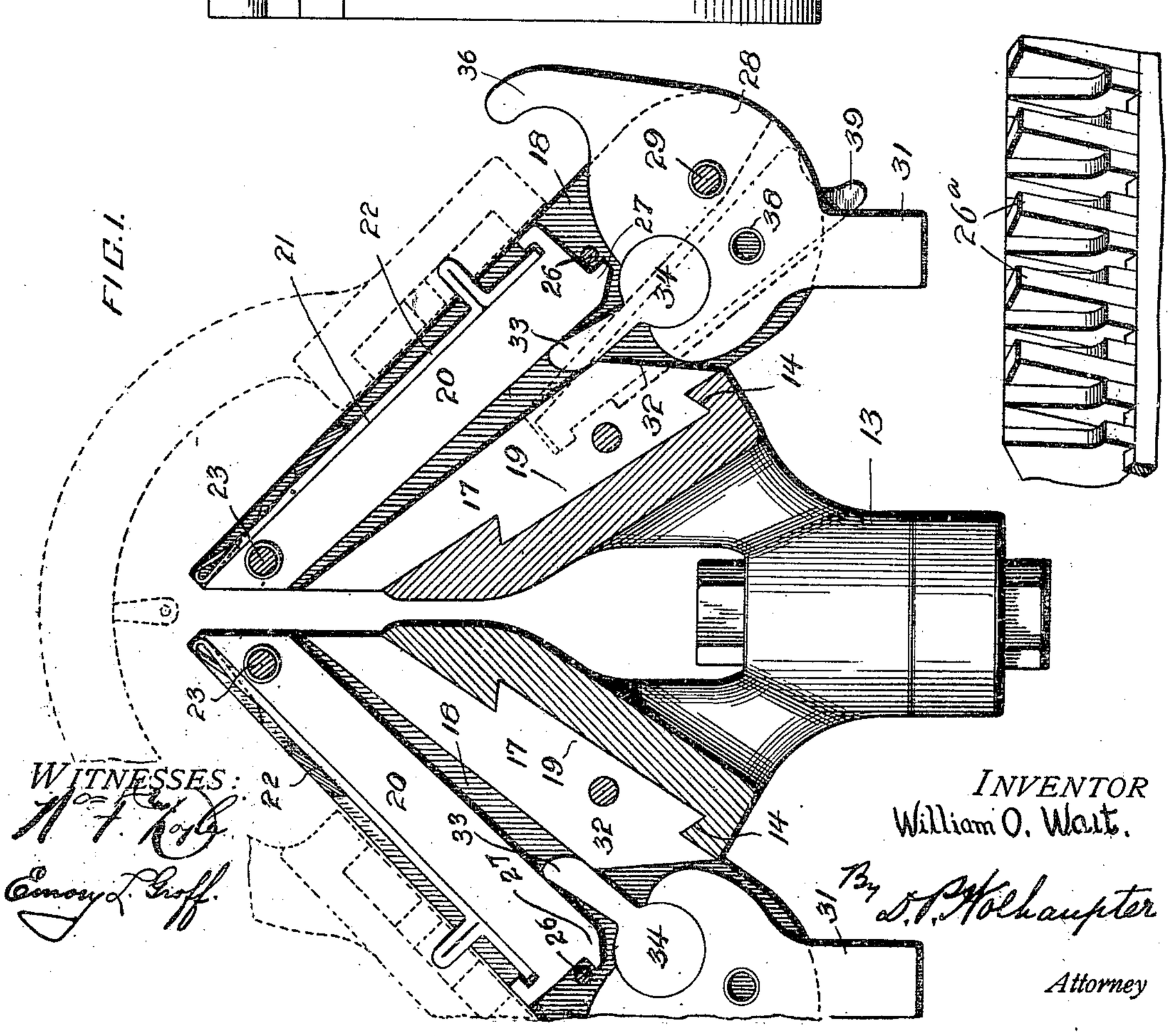

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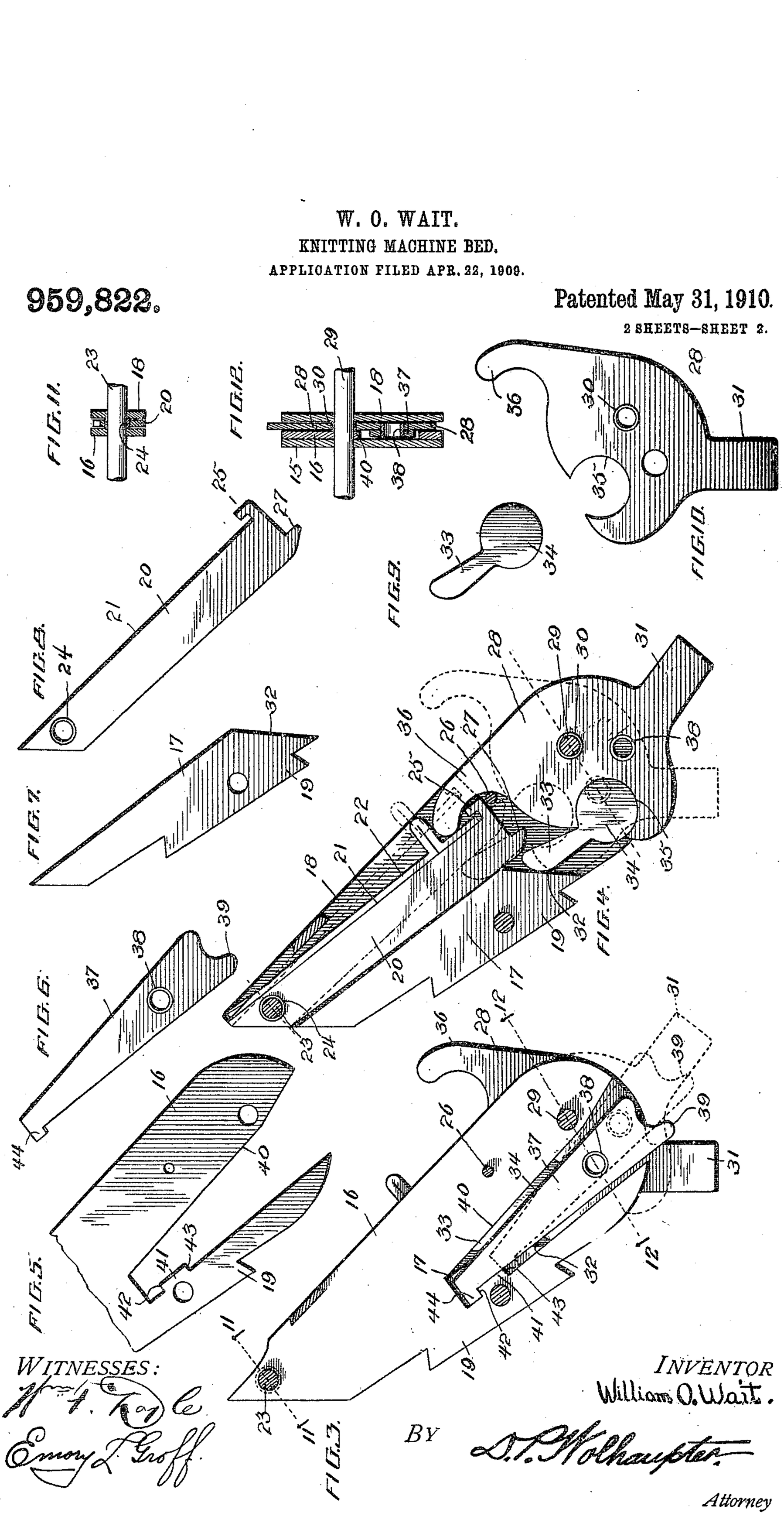

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KNITTING-MACHINE BED.

959,822. Specification of Letters Patent. Patented May 31, 1910.

Application filed April 22, 1909. Serial No. 491,507.

To all whom it may concern:

Be it known that I, WILLIAM O. WAIT, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Knitting-Machine Beds, of which the following is a specification.

The present invention relates more particularly to a Lamb or double opposed flat bed type of knitting machines in which the needle supports can be raised so as to carry the needles into coaction with the operating means, or lowered out of the field of action of said operating means without in any manner affecting the portions of the work engaged by the needle.

One of the principal objects of the present invention is to provide a novel, simple and effective structure that does away with the necessity of springs or like devices, the various elements being positive in their action.

Still another object is to provide a structure made up of body sections, all of which are interlocked with the supporting frame, so that said body and the parts carried thereby are very rigid and secure.

Still another object is to provide a structure of the above character, in which the needle is supported throughout its entire length, irrespective of the positions in which it is placed.

Another and important object is to provide a structure, which is exceedingly simple to operate, and which will automatically lock when the needle is either in its elevated or depressed position.

Still another object is to provide a structure of the above character, in which the sections can be readily removed and replaced by new ones, should they become worn or damaged, said structure being also so arranged that it can be readily cleansed and will permit the convenient removal of broken needles and the like.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a vertical sectional view through the structure. Fig. 2 is a plan view of the same. Fig. 3 is a sectional view, showing the locking latch, the section being taken on the line 3—3 of Fig. 2. Fig. 4 is a view somewhat similar to Fig. 1, but showing the needle support or track in depressed position; the section being taken on the line 4—4 of Fig. 2. Fig. 5 is a detail view of a portion of the body plate, in which the latch is located. Fig. 6 is a side elevation of the latch. Fig. 7 is a detail view of one of the body plates that constitutes a stop for the needle support. Fig. 8 is a detail view of the needle-supporting track. Fig. 9 is a detail view of the wedge block. Fig. 10 is a similar view of the actuating member. Figs. 11 and 12 are respectively cross sectional views on the lines 11—11 and 12—12 of Fig. 3. Fig. 13 is a detail perspective view of the upper corners of the members, illustrating more particularly the stitch-releasing abutments.

The frame of the machine, which is designated generally by the reference numeral 13 may be of any well known character, and is provided with oppositely disposed dovetail grooves 14, in which the needle-carrying bodies are located side by side. As these bodies are similar in all respects, a description of one, it is thought, will be sufficient for all. Each body consists of four plates of sheet metal located side by side, and designated respectively 15, 16, 17, and 18. All of these plates have dovetails 19 that are engaged in the dovetail grooves 14. The two outer plates 15 and 18 are side plates, and between them are located the plates 16 and 17. The plate 17, as clearly shown in Figs. 1, 4 and 7, is considerably narrower and shorter than the other plates, and being interposed between the plates 16 and 18, forms a recessed seat, in which is located a needle support 20 having its upper edge constituting a track 21, on which the usual needle 22 is located and operates. The support 20 is pivoted at its front end, as shown at 23, a bushing 24 preferably surrounding the pivot, while its rear end has an overhanging hook 25 to receive the rear end of the needle when said needle is in its rearmost position. The downward movement of the support 20 is limited by the upper edge of the plate 17, which thus constitutes a stop. The upward movement of the support is limited by a wire or rod 26 that passes through all the bodies, and is located in the path of movement of the rearwardly projecting lug 27 on the support 20. The plates 15 have corner projections 26[a], forming stitch-releasing abutments.

Pivotally mounted between the plates 16 and 18 in rear of the supporting track 20, is an actuating member 28, the pivot 29 thereof being preferably surrounded by a bushing 30. This actuating member has a rearwardly extending tail 31 constituting a finger piece, by means of which it can be swung. The rear end of the stop plate 17 is beveled, as shown at 32, and a raising and lowering device, in the form of a wedge piece 33, normally rests upon the inclined portion 32, and is movable between the stop 17 and the support 20, as will be clear by reference to Fig. 1. The wedge piece 33 has a circular enlargement 34 engaged in a similarly shaped recess 35 in the actuating member, and thus the two parts are pivotally connected. It will be observed that the part 33 tapers toward the pivot and consequently when the said part is interposed between the support 20 and the stop 17, any downward pressure upon the support will tend to urge the block inwardly, thus maintaining it in its active position. The actuating member 28 furthermore has a nose 36 that overhangs the rear end of the support 20, and when the tail piece 31 is elevated, this nose is depressed, as shown in Fig. 4, being brought down upon the rear end of the needle, and forcing the same with the rear end of the support downwardly, when the block 33 moves from between the stop 17 and the support 20.

In order to lock the actuating member in its raised and lowered position, a latch 37 is pivoted between its ends on a bushing 38, carried by said actuating member. This latch has a rearwardly projecting lug 39 that is conveniently accessible to the operator for grasping the extension 31. The latch 37 is arranged in the slot 40, formed in the plate 16 that lies between the plates 15 and 17. This slot has a lug 41 extending into its lower side, forming oppositely disposed locking shoulders 42 and 43. The latch has a depending lug 44 that is arranged to abut against either shoulder 42 or 43, accordingly as the tail piece 31 is raised or lowered.

The operation of the structure is substantially as follows. When the block 33 is interposed between the stop plate 17 and the supporting track 20, said track is raised, so that the needle is in active position with respect to the operating mechanism, as will be evident to those skilled in the art. In this position, the lug 44 is engaged behind the shoulder 42, and the parts consequently effectively locked. When it is desired to depress the needle out of the range of the action of the operating mechanism, it is only necessary for the operator to depress the lug 39. This will disengage the lug 44 from the shoulder 42 and the operator can then raise the tail piece 31. As a result the block 33 is withdrawn from between the stop 17 and the supporting track 20, permitting the track to drop and the nose piece 36 will then move to a position over the rear end of the needle, and said track. The lug 44 of the latch 37 now drops in front of the shoulder 43 and the parts are now locked with the track in depressed position.

It will thus be seen that all the objects mentioned in the preliminary portion of the specification are secured.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In mechanism of the character described, the combination with a movable needle supporting track, of means movable to and from a position beneath the supporting track for maintaining the same in a predetermined position, and an actuating member for said means pivotally connected thereto.

2. In mechanism of the character described, the combination with a needle support pivotally mounted at one end, of a stop located beneath the support, a device movable between the support and stop, and a pivotal actuating member on which the device is mounted.

3. In mechanism of the character described, the combination with a needle support pivotally mounted at one end, of a stop located beneath the support, a device movable between the support and stop, and a pivotal actuating member, said device being pivotally mounted on the member.

4. In mechanism of the character described, the combination with a needle support pivotally mounted at one end, of a stop located beneath the needle support, an actuating member pivotally mounted in rear of the support, and a wedge block pivotally mounted on the actuating member and movable between the stop and support.

5. In mechanism of the character described, the combination with a movable needle support, of means for raising and lowering the same, and means that moves with the raising and lowering means to a position over the needle placed on the support and over the support to hold said needle and support in depressed position.

6. In mechanism of the character described, the combination with a movable needle support, of means for raising and lowering the same, and a pivotally mounted

member having a nose that moves to and from a position over the needle placed on the support to hold said needle and support in depressed position.

7. In mechanism of the character described, the combination with a movable needle support, of an actuating member, and a raising device for the support pivoted on the actuating member and movable beneath the support, said member having a nose that moves to and from a position over the needle placed on the support to hold said needle and support in depressed position when the raising device is removed from beneath the support.

8. In mechanism of the character described, the combination with a body, of a needle supporting track pivotally mounted at one end on the body, an actuating member pivoted on the body in rear of the track, a wedge block pivoted to the member and movable beneath the rear end of the support to raise the same, and a nose carried by the member and movable to a position upon the needle placed on the support to maintain the needle and support in depressed position.

9. In mechanism of the character described, the combination with a movable needle support, of means mounted separately from the support and movably engaging the same for raising and lowering said support, and a locking device for said means pivotally mounted thereon.

10. In mechanism of the character described, the combination with a movable needle support, of a pivotally mounted actuating member, an elevating block pivotally mounted on the member and movable beneath the support to elevate the same, and a latch pivotally mounted on the member for holding said member in different positions.

11. In mechanism of the character described, the combination with a body having a pair of locking shoulders, of a needle supporting track pivotally mounted on the body, an actuating member pivotally mounted on the body in rear of the support, a wedge block pivoted to the actuating member and movable beneath the support, and a latch pivotally mounted on the member and having a lug that engages the different shoulders to maintain said member in different positions.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

WILLIAM O. WAIT.

Witnesses:
F. H. NEWKIRK,
FRANK H. PEEK.