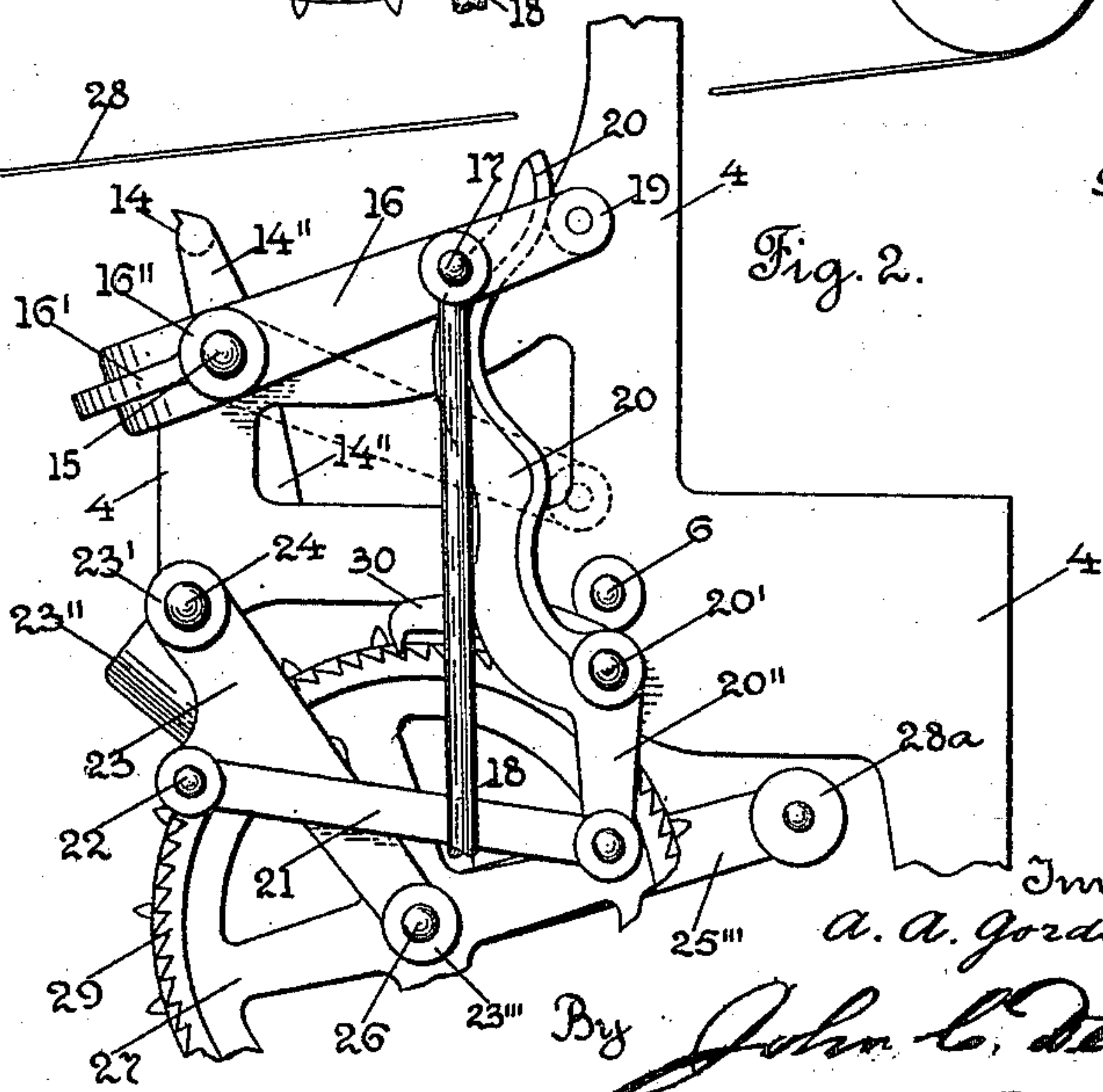
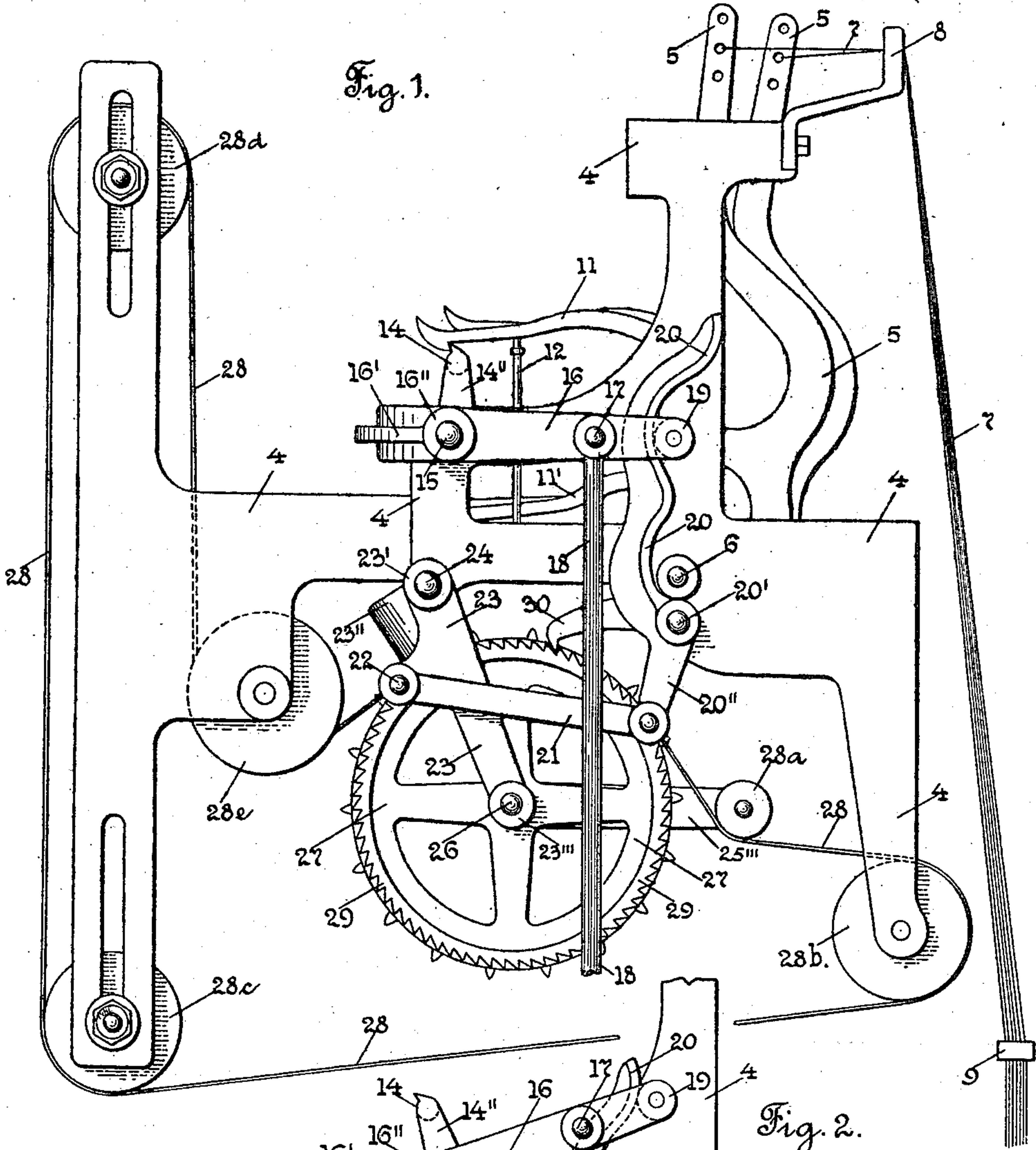


A. A. GORDON, JR.
SHEDDING MECHANISM FOR LOOMS.
APPLICATION FILED FEB. 24, 1909.

966,439.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.



Witnesses
M. Bredt.
W. H. C. C.

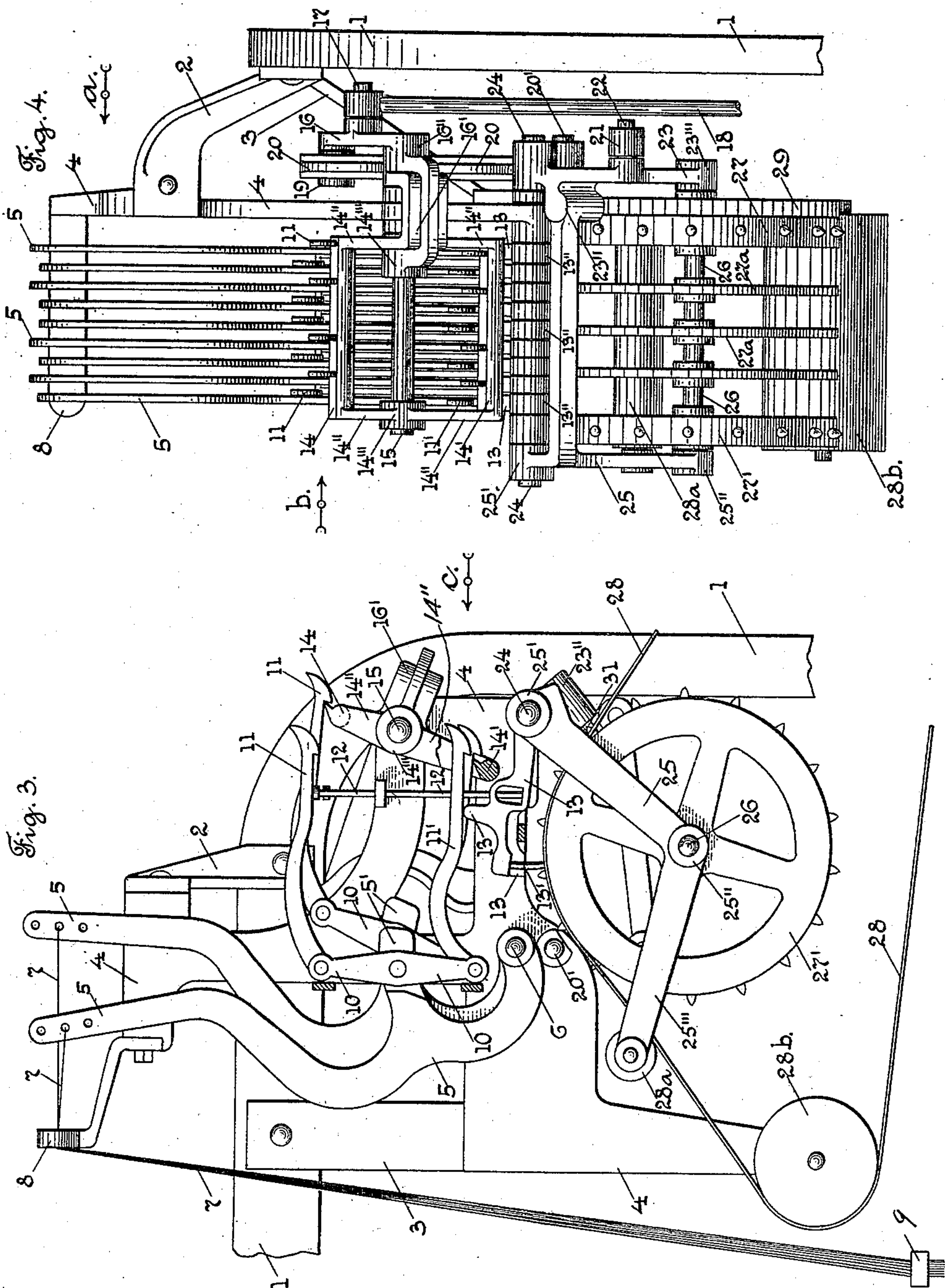
Inventor
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UNITED STATES PATENT OFFICE.

ALBERT A. GORDON, JR., OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, A CORPORATION OF MASSACHUSETTS.

SHEDDING MECHANISM FOR LOOMS.

966,439.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed February 24, 1909. Serial No. 479,763.

To all whom it may concern:

Be it known that I, ALBERT A. GORDON, Jr., a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Shedding Mechanism for Looms, of which the following is a specification.

My invention relates to shedding mechanism for looms, and more particularly to an auxiliary mechanism for weaving names, trade marks, or designs on the border, or some other portion of the woven fabric, and to be used on looms in connection with the ordinary shedding mechanism.

The object of my invention is to provide a mechanism of the class referred to, of improved construction, which may be used on a loom, as an auxiliary shedding mechanism, and which is preferably located at the opposite end of the loom from the harness operating mechanism, and adapted to operate a certain number of warp threads on the border or some other part of the fabric, to weave names, trade marks, or other designs into the fabric, according to a pattern indicating card, preferably made of some flexible material.

My auxiliary shedding mechanism has the pattern cylinder or drum, carrying the pattern surfaces, preferably located directly below the dobby fingers of a dobby, and a single connection from some driven part of the loom, through an intermediate connection to the lifter bars for the dobby hooks, and through an intermediate connection to the pattern cylinder or drum, operates the lifter bars, and also the pattern cylinder or drum, to raise and lower said cylinder and carry the pattern surfaces thereon into and out of engagement with the dobby fingers.

My invention consists in certain novel features of construction of my improvements as will be hereinafter fully described.

I have only shown in the drawings my improved mechanism, detached, with sufficient parts of a loom combined therewith to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawings:—Figure 1 is a rear view of a dobby, with my improvements

applied thereto, looking in the direction of arrow *a*, Fig. 4. Fig. 2 shows some of the parts shown in Fig. 1, detached, and in a different position. Fig. 3 shows the opposite side view of the parts shown in Fig. 1, looking in the direction of arrow *b*, Fig. 4; some of the parts shown in Fig. 1 are not shown in this figure, and some parts are shown broken away, and in section, and, Fig. 4 is an outside end view of the parts shown in Fig. 3, looking in the direction of arrow *c*, same figure; some parts broken away and shown in section in Fig. 3, are shown in full in this figure.

In the accompanying drawings, 1 is a portion of a loom arch, having secured thereon brackets 2, and 3, on which is fastened the frame 4 of the dobby; only one frame 4 is used in this instance, on which are supported the several parts of the dobby mechanism.

The harness operating mechanism consists in this instance of the jacks 5, pivotally supported at their lower ends on a rod 6, see Fig. 3. The jacks 5 for the harnesses, in this instance nine in number, have their upper ends provided with harness cords 7, which pass through a guide plate 8, and downwardly through a small comber board 9, suitably located over the place where the border or edge is to be woven on the fabric. On the forwardly extending projection 5' on a jack 5, see Fig. 3, is centrally pivoted the hook lever 10, and to the upper and lower ends of each hook lever 10 is pivotally attached the end of a hook 11, and 11', respectively, in the ordinary way.

The upper hooks 11 are raised through wires 12, operated by the dobby fingers 13, and the lower hooks 11' are raised by the dobby fingers 13, to disengage their hook ends from the upper and lower lifter bars 14, and 14', respectively.

The hubs 13'' of the dobby fingers 13 are pivotally mounted on a rod 24, and said fingers extend inwardly from said rod and have their pivot support located on the opposite side of the pattern cylinder or drum from the pivot support of the jacks 5.

The lifter bars 14 and 14' form a frame, with its arms 14'' extending out from the hubs 14''' , which are loosely mounted on

the shaft or rod 15, see Fig. 4. The inner hub 14'', on the lifter bars 14 and 14', has the part 16' extending out therefrom and back to the outer hub 16'' on a lever 16, see
 5 Figs. 1 and 2. A stud 17 on the lever 16 has pivotally connected thereto the upper end of a downwardly extending rod or connector 18, through which a rocking motion is communicated to the lever 16 from some
 10 driven part of the loom, preferably from the bottom shaft, not shown.

The outer end of the lever 16 is provided with a roll 19, which is adapted to engage and operate a cam lever 20, through the roll
 15 19 traveling on the curved or cam-shaped edge of said lever, to communicate a rocking motion to said lever 20, which is pivotally mounted on a stud 20' on the frame. The lever 20 has a downwardly extending arm
 20 20'', the end of which is pivotally connected with one end of a link 21; the other end of said link 21 is pivotally connected with a stud 22 on an arm 23, which has its hub 23' pivotally mounted on a rod 24 on the frame
 25 4. A second arm 25, on the inner side of the machine, see Figs. 3 and 4, has its hub 25' loosely mounted on the rod 24. The downwardly extending ends of each arm 23, and
 30 25 have a bearing 23''' and 25'' thereon, respectively, for a shaft 26, on which are mounted in this instance the sheaves or disks 27, and 27' of the pattern cylinder or drum, and also in this instance the supporting disks 27^a, over which the pattern surface 28 passes.
 35 The pattern surface 28 is in this instance, an endless band or belt, of some suitable flexible material, as fiber, with holes punched therein, according to what is to be woven on the fabric. The pattern band operates the
 40 dobby fingers 13, raising them when the band is imperforated, and allowing them to drop when a perforation or hole is presented.

In using an endless band, for a pattern
 45 surface, the holes for the dobby fingers can be made very close together, and consequently a shorter and much lighter pattern surface is obtained over the ordinary metal pattern chain, or dobby chain, made up of
 50 wood bars, linked together. The endless band 28 passes over a series of pulleys or guide sheaves, suitably supported, as 28^b 28^c, 28^d, and 28^e, and then over the upper side of the pattern cylinder or drum, and under the
 55 dobby fingers. Holes in the edges of the band 28 receive the pins on the disks 27 and 27', and cause the movement of said band as said disks revolve.

A tension roll 28^a is mounted on the outer
 60 end of an arm 25'', extending out from the bearing 25'' on the arm 25, see Fig. 3, and the band 28 passes under said roll 28^a, and as said roll 28^a is moved with the arm 25''

and the arm 25, it acts to maintain a uniform tension on the band 28. 65

The outer disk 27 is in this instance provided with a ratchet gear 29, and is adapted to be engaged by, and operated every up and down movement of the cylinder, by a
 70 pull pawl 30, see Figs. 1, and 2, which has its hub loosely mounted on the stud 20', to revolve the ratchet one tooth for every pick.

A spring actuated pin or plunger 31 is held in a boss 23'' on the arm 23, see Fig. 3, 75 and adapted to engage the teeth on the ratchet wheel 29 and lock or hold the pattern cylinder or drum after each partial rotation thereof.

From the above description in connection 80 with the drawings the operation of my improvements will be readily understood by those skilled in the art, and briefly is as follows:—Through the vertical up and down movement of the single rod or connector 18, 85 operated from some moving part of the loom, an up and down movement is communicated to the lever 16, as shown by full and broken lines in Fig. 2, and movement is communicated to the lifter bars 14, and 14', at regular
 90 predetermined intervals, to cause them to move the hooks 11, and 11', mounted on the hook levers 10, which in turn are mounted on the jacks 5, to move said jacks and the harness cords 7 connected therewith, in the
 95 same manner as in the ordinary dobby. The up and down movement of the arm 16 also causes the roll 19 thereon to travel on the cam lever 20, to rock said lever, and through the arm 20'' and link 21, to raise and lower
 100 the pattern cylinder or drum, as shown in Figs. 1, and 3, to cause the pattern surface, or pattern card band 28 thereon, to operate the dobby fingers 13, and the hooks 11, and the engagement of the hook 30 with the
 105 ratchet wheel 29 on the pattern cylinder or drum, will cause the revolution of said drum, all as will be fully understood by those skilled in the art.

It will be understood that the details of 110 construction of my improvements may be varied if desired, an ordinary dobby pattern chain, composed of wood bars linked together, and carrying pattern pins, may be used in place of the endless pattern band 28, 115 if preferred.

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

In a loom, an auxiliary shedding mechanism to operate warp threads, to weave names, etc., in the fabric, and comprising jack levers, hook levers, and hooks, lifter bars for operating said hooks, dobby fingers for said hooks, a rotatable pattern cylinder 120 or drum, a pattern surface, and means for 125

moving the lifter bars, and for raising and lowering said pattern cylinder or drum, said means comprising a single connection from a driven part of the loom, and a lever connected with the lifter bars, and carrying a roll, and a pivotally mounted cam lever engaged by said roll, and connections from said cam lever to the frame carrying the pattern cylinder or drum, and a pawl pivotally mounted on a stud on the frame to engage ratchet teeth on the pattern cylinder or drum to rotate said drum. 10

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Witnesses:

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