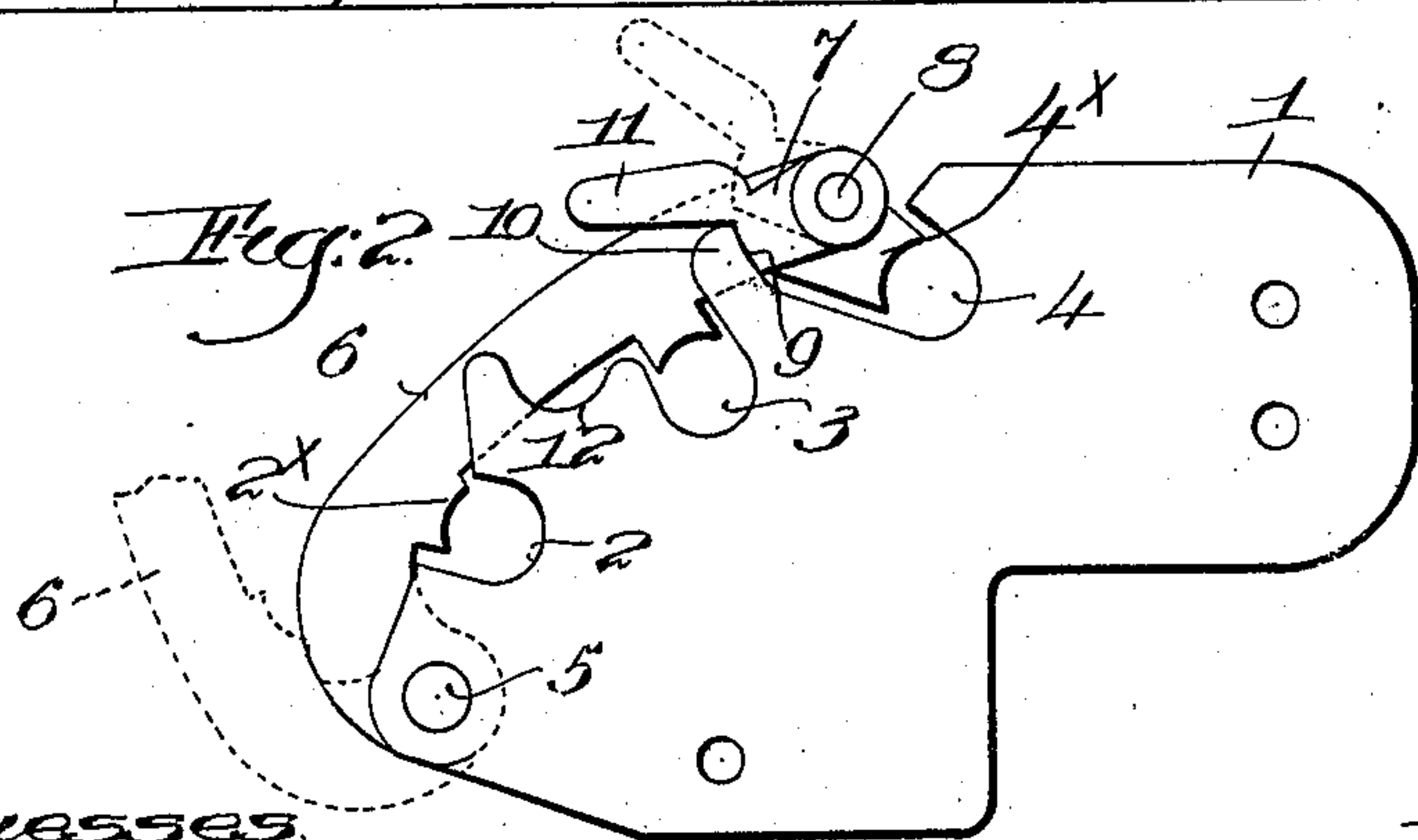
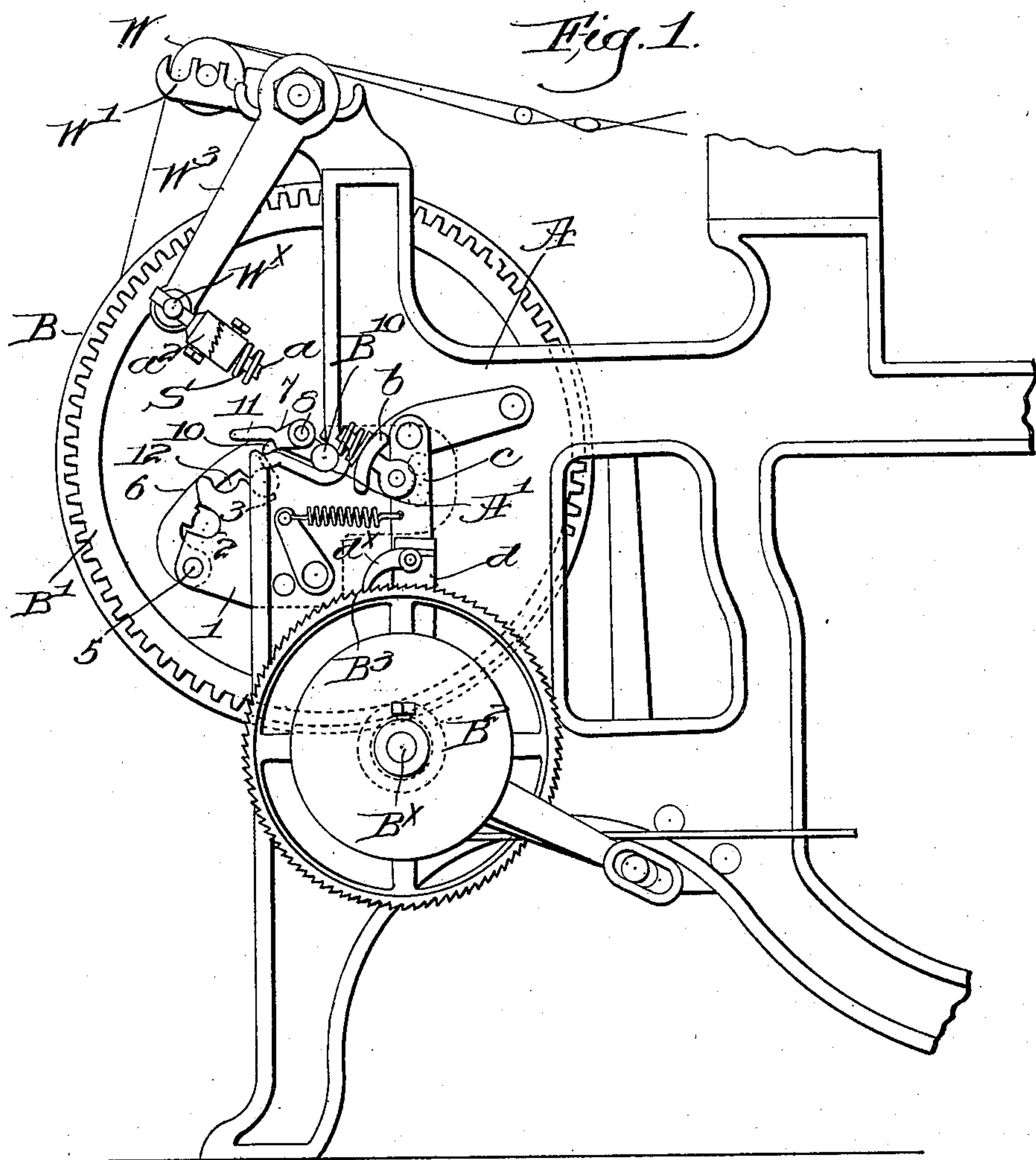


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SUPPORTING MEANS FOR LOOM BEAMS.
APPLICATION FILED JUNE 24, 1910.

981,944.

Patented Jan. 17, 1911.



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UNITED STATES PATENT OFFICE.

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SUPPORTING MEANS FOR LOOM-BEAMS.

981,944.

Specification of Letters Patent.

Patented Jan. 17, 1911.

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To all whom it may concern:

Be it known that I, ALONZO E. RHOADES, a citizen of the United States, and resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Supporting Means for Loom-Beams, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to looms for weaving, and it has for its particular object the production of novel means for supporting and locking in place the warp beam so that beams having heads of various diameters can be used without any disarrangement of the let-off mechanism or loss of control of such mechanism over the beam. It is customary to provide the loom frame, or brackets thereon, with open seats to receive the journals of the warp-beam, and for a given size of beam head such construction is satisfactory, but if it is attempted to use beams having heads of different sizes the beam gear will not mesh properly with the actuating pinion or gear forming a part of the let-off mechanism, and some other means for controlling the rotation of the beam has to be provided. So, too, a beam having heads of large diameter will often extend so far into the framing of the loom as to interfere with the warp stop-motion, and in such case the beam journals have to be set back by using different bearing brackets, and when they are provided the beam gear may or may not mesh properly with the corresponding gear of the let-off mechanism.

In accordance with my present invention I provide the loom frame with beam supporting portions or stands each having a series of bearings for the beam journals, said bearings being so located that no matter what opposite pair of bearings or seats are used the journals of the beam will be at a fixed distance from the center of the let-off gear. Consequently the beam gear, which has a uniform diameter, will always mesh properly with the let-off gear. The journal bearings or seats are located at different distances from the harnesses, so that the particular pair of bearings best adapted for the diameter of beam-head will be used. In order that there may be no accidental unseating of the beam journals I

have provided a locking device for each stand which positively prevents removal of the journal until said device is unlocked and moved to inoperative position.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a side elevation of a portion of a loom with one embodiment of my invention applied thereto for supporting and locking the beam in position, the let-off mechanism being shown in part; Fig. 2 is an enlarged view in side elevation of one of the bearing stands and the journal-retaining or locking device connected therewith.

Referring to Fig. 1 the warp beam B having an attached ring-gear B' in mesh with a pinion B², (see dotted lines Fig. 1) on the driving or actuating shaft B^x; the whip-roll W mounted in rocking arms W', the rocker-arm W³ connected therewith and having a rocking stud w^x to which is secured the rod a having fast upon it a collar a², the fixed ear b through which the rod passes loosely, the compression-spring S, the members c, d of the compound pawl-carrier, the let-off pawl d^x, and the ratchet B³ with which said pawl coöperates, may be and are all of well known construction and substantially as shown in United States Patent to Roper, No. 744,941, dated November 24, 1903.

Each loom side, as A, has an open, inclined bearing or seat A' for the journal B¹⁰ of the warp beam, this construction being very common in the art, but with such construction it will be manifest that there is only one position for the beam. Consequently if a beam having much larger heads is to be used it may so interfere with other parts of the loom mechanism, and the only way such beams have been used heretofore is by bolting bearing brackets or stands to the loom-sides, and extended rearwardly therefrom. Such a makeshift has made possible the use of the larger beam heads, but it has carried the beam-gear B' out of mesh with the pinion B² of the let-off mechanism, which is most objectionable, inasmuch as some other means must be used for controlling the rotation of the beam. To overcome these objections and yet provide for mounting the warp-beam in different positions I attach in any suitable manner a bearing stand 1 to each loom side, at the inner face

thereof, the upper edge of each stand having a series of open and partly circular journal-bearings or seats 2, 3, 4, best shown in Fig. 2. The bearing 4 is so positioned that it coincides or registers with the usual bearing A' in the loom side, while the bearing 2 is at some little distance back of the loom side, while the bearing 3 is between the other two, but the series of bearings 2, 3, and 4 is so arranged that the center of the beam journal B¹⁰ will be in an arc of a circle struck from the center of the shaft B^x no matter which of such bearings is in use. Consequently the beam-gear B' will always be in proper mesh with the actuating pinion B² of the let-off mechanism, and hence the said mechanism will under all circumstances control the letting off of the yarn from the beam.

If the beam-heads are very large the beam journals will be seated in the opposite pair of bearings 2, while with a beam having smaller heads the bearings 3 or 4 will be used. Each bearing stand is provided with a device to retain and lock the beam-journal in its bearing irrespective which one of the series of bearings is in use. To this end I pivot on the inner face of each stand 1, at 5, a retaining member 6 adapted to swing in a vertical path, the under side of said member being provided with concaved ears 2^x, 3^x, 4^x, so located that when the retaining member is in its operative position, as in Fig. 1, and in full lines Fig. 2, the said ears will constitute caps to close the open bearings 2, 3 and 4 respectively. The cap of the particular bearing in use rests upon the beam-journal, and the retaining member 6 is locked in operative position by a locking dog 7 pivoted at 8 on the free end of the member 6, said dog having a slightly convex locking face 9 to engage the concave face of an abutment 10 on the bearing stand. Any tendency of the beam-journal to lift out of its bearing acts through the coöperating cap to swing upward the free end of the member 6, but this is resisted by the coöperation of the locking dog 7 with the abutment 10, and said member 6 can only be swung upward and rearward into inoperative position by first swinging the dog 7 into dotted line position, Fig. 2, to disengage the face 9 of the dog from the coöperating face of the abutment 10. This movement of the dog is facilitated by a tail 11 which serves as a finger-piece to be grasped by the attendant when it is necessary to move the dog on its pivot 8. The coöperating faces of the dog and abutment are curved about the center of the pivot 8 as a center, while the retaining member 6 swings about the pivot 5, so that if the dog is in locking position it cannot be unlocked by any lifting pressure applied to the retaining member, as will be manifest.

Between the bearings 2 and 3 the stand

1 is enlarged and cupped out to form a semi-circular open seat 12 which serves as a temporary bearing for the beam-journal when the beam is being changed. That is, after the retaining member 6 is unlocked and swung back out of the way the empty beam can be lifted out and into the pair of seats 12 until it can be taken away, or a full beam can be sustained in the temporary seats 12 until it is desired to place it in proper operative position in one of the pairs of regular bearings.

From the foregoing description it will be apparent that the bearing stands can be readily applied to looms now in use by bolting the same to the loom sides, and by having such stands the position of the beam can be changed while it is still controlled by the let-off mechanism.

The retaining member is common to all of the bearings of a set, as will be understood, and is locked in position in a simple and efficient manner, and when the retaining member is unlocked it can be swung back and down out of the way when a beam is to be taken from the loom or put in position.

I have illustrated my invention in connection with one form of let-off mechanism, but it will be understood that the particular character of such mechanism is not important so long as the beam-gear and the actuating pinion of the let-off mechanism mesh properly in any one of several positions of the beam.

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

1. In a loom, a warp beam having an attached gear, an actuating pinion in mesh with said gear to govern let-off of the warp, and beam-supporting means comprising a stand on each loom-side and having a plurality of bearings for the beam-journal, said bearings being equi-distant from the axis of the pinion, a retaining member common to all of said bearings, and means to lock said member in position to retain the beam-journal in a selected bearing, said locking means comprising a fixed member on the stand, and a dog movably mounted on the retaining member and movable into frictional engagement with said fixed member.

2. In a loom, a warp-beam having an attached gear, a let-off pinion adapted to mesh with said gear and govern rotation of the beam, a stand on each loom-side and provided with a series of open bearings for the beam journal, said bearings being at different distances from the front of the loom and equi-distant from the axis of the pinion, a retaining member pivoted on each stand and having concaved caps corresponding in position to the series of bearings, to close the latter, a manually-controlled locking dog pivoted on said member, and a co-

operating abutment on the stand, movement of the dog into operative position between its pivot and the abutment causing engagement of the dog and abutment to thereby
5 lock the retaining member in its operative position.

3. In a loom, a warp-beam, a plurality of open bearings at each side of the loom, to receive and support the adjacent journal of
10 the beam, said bearings being at different distances from the front of the loom, a retaining member fulcrumed beyond the rear-most bearing and having caps to close the several bearings when said member is op-

eratively positioned, a manually-controlled 15 locking dog on the retaining member having a convex locking face, and a fixed abutment having a concave face with which the locking face of said dog coöperates to lock positively said retaining member in operative 20 position.

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

ALONZO E. RHOADES.

Witnesses:

FRANK H. FRENCH,

E. D. OSGOOD.