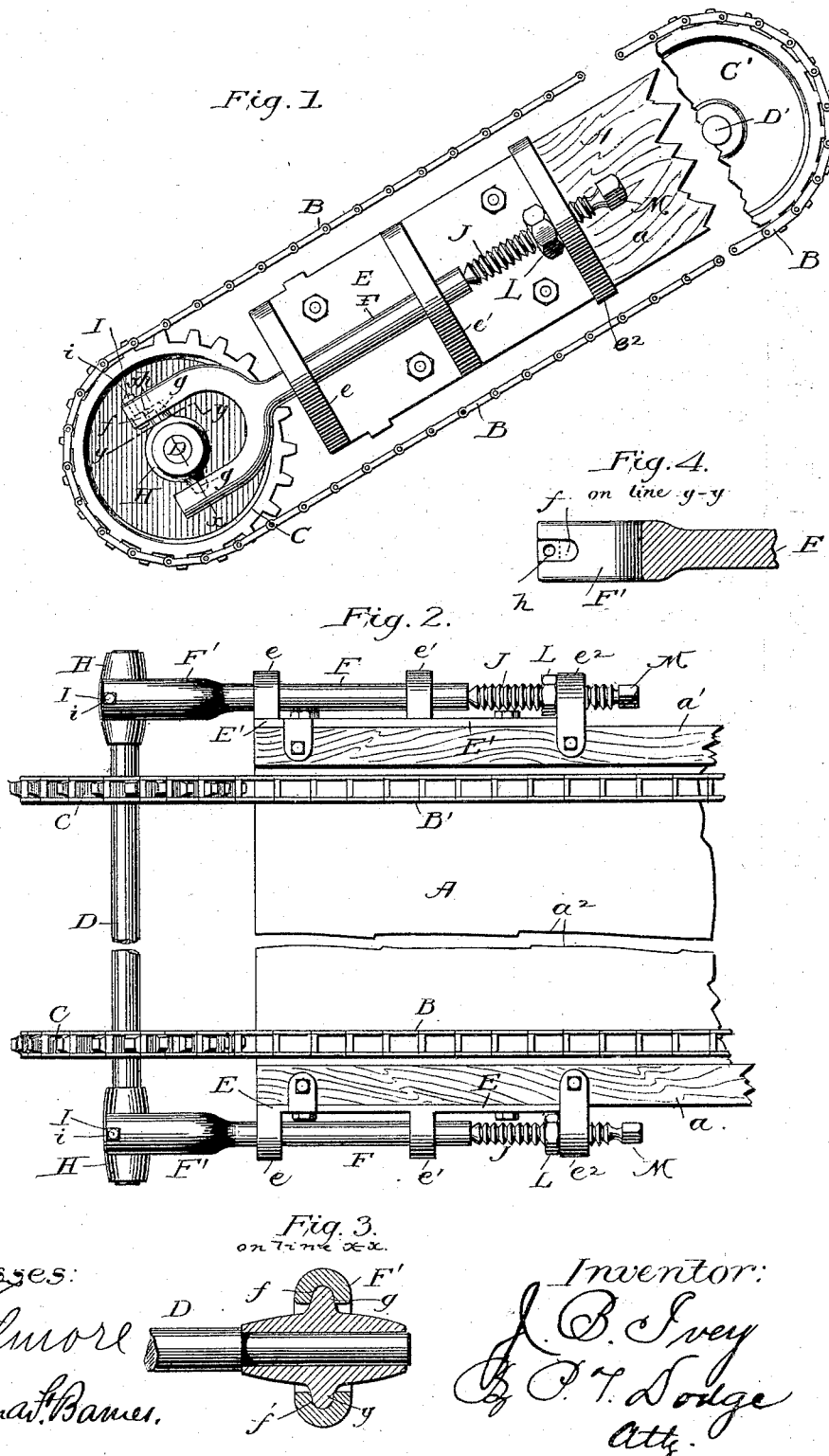


(No Model.)

J. B. IVEY.
SHAFT BEARING FOR CONVEYERS.

No. 493,726.

Patented Mar. 21, 1893.



Witnesses:
H. Moore
Raymond A. Barnes.

Inventor:
J. B. Ivey
C. T. Sledge
Att.

UNITED STATES PATENT OFFICE.

JAMES BENNETT IVEY, OF MACON, GEORGIA.

SHAFT-BEARING FOR CONVEYERS.

SPECIFICATION forming part of Letters Patent No. 493,726, dated March 21, 1893.

Application filed June 4, 1892. Serial No. 435,510. (No model.)

To all whom it may concern:

Be it known that I, JAMES BENNETT IVEY, of Macon, county of Bibb, and State of Georgia, have invented a new and useful Improvement
5 in Shaft-Bearings for Conveyers, of which the following is a specification.

My invention relates to endless elevating or conveying mechanisms such as are commonly employed in connection with thrashing machines, hay-loaders, &c., and it relates more
10 particularly to conveyers in which two or more endless chains or bands are carried at opposite ends by sprocket wheels mounted on shafts from which they receive their motion.

15 The objects of my invention are, first, to provide bearings for the shaft which will permit the latter to adjust itself automatically to the varying abnormal conditions arising in practice on account of the unequal strains
20 to which the shaft is frequently subjected and of other causes; and, second, to provide means for regulating the tension of the chains and for taking up the slack.

With these ends in view my invention consists in mounting the shaft at its opposite
25 ends in bearings so constructed and arranged as to have a universal motion.

The invention further consists in providing the bearings with means for adjusting them
30 longitudinally of the conveying chains to take up the slack.

The invention also consists in the details of construction and combinations of parts hereinafter described and claimed.

35 In the accompanying drawings,—Figure 1 is a side elevation of a chain-conveyer having my invention embodied therein. Fig. 2 is a top plan view of the same. Fig. 3 is a cross-section on the line $x-x$ of Fig. 1. Fig. 4 is a
40 section on the line $y-y$ of Fig. 1, viewed from below.

Referring to the drawings,—A represents a conveyer-frame, which may be of any form or construction which will sustain the operative
45 parts hereinafter described. This frame consists of two longitudinal beams $a a'$, and a flooring a^2 , as usual.

B B' represent endless conveying chains carried at opposite ends by sprocket wheels
50 C C', fixed respectively to shafts D D',

mounted in bearings at the opposite ends of the conveyer frame.

The foregoing parts constitute the essential and leading features of a conveying mechanism of well known construction, and
55 except in so far as hereinafter indicated, may be of any suitable form.

In order that the shaft carrying the wheels may adjust itself automatically to different angles which it may tend to assume on account of the unequal strains applied to the
60 chains I so construct and sustain the bearings in which the shaft is mounted that they have a universal motion, that is to say, that they may rock or tip both on a vertical and
65 horizontal axis, transversely of the length of the shaft.

In the drawings I have shown my invention as applied to the lower shaft of an elevating mechanism, and have shown the same
70 embodied in a novel and efficient form, but it is to be understood that my invention is not limited to its application in this form and in this position, as it may be reasonably modified and changed provided the operation is
75 substantially the same.

These bearings are constructed as follows: To the outer sides of each of the beams $a a'$ of the elevator-frame at their lower ends, I
80 securely bolt plates E E', each of which is provided with three laterally and outwardly extending flanges e, e' and e^2 . The flanges e
85 e' are provided with openings within which I loosely mount a stem F, provided at its end beyond the plate with a forked head F'. The
90 inner sides of this forked head are provided with cavities $f f'$, adapted to receive respectively projections $g g'$, formed on the upper and lower sides of a box or collar H, within
95 which is loosely mounted the shaft carrying the sprocket wheels. As a result of this arrangement it will be seen that each of the boxes or collars may turn on a vertical axis within the forked heads, and that the latter may turn on a horizontal axis, both axes being
100 transverse to the length of the shaft; in other words, a universal motion of the bearings is permitted.

In order that the boxes or collars may be removed or replaced as desired, I provide the

under side of the upper portion of the forked head with a recess *h*, extending from its end and communicating with the cavity *f*. This recess is adapted to receive the square head of a bolt *I*, extending through the upper portion of the fork and provided on its upper end with a tightening nut *i*. By this means the box or collar may be held securely in place or it may be removed by first removing the bolt.

In order that the forked stems carrying the shaft and its boxes or collars may be adjusted longitudinally for the purpose of taking up any slack which may occur, and for tightening the chains, I provide each of the flanges *e*², with a threaded opening adapted to receive a bolt *J*, which is screwed therein with its end abutting against the end of the stem, and further provide the bolt with a check-nut *L* and a square head *M*, by which it may be turned. It will be seen that by screwing the nut the forked stems may be moved bodily longitudinally, carrying the sprocket wheels and tightening the chains.

Any suitable means may be employed for driving the chain such, for example, as a band-pulley on either shaft and a band running thereon and connected with the source of power.

Having thus described my invention, what I claim is—

1. The combination of the shaft-supporting spindles mounted in bearings parallel to each other, and capable of turning on their axes, the said spindles having forked heads for the reception of shaft-bearing boxes, the boxes trunnioned in said forked heads and capable

of oscillating in the planes of the axes of the spindles, and the shaft supported in said boxes.

2. The combination of the shaft-supporting spindles mounted in bearings parallel to each other, and capable of turning on their axes, said spindles having forked heads for the reception of shaft-bearing boxes, the boxes trunnioned in said forked heads and capable of oscillating in the planes of the axes of the spindles, the shaft supported in said boxes, and the adjusting screws for adjusting the spindles longitudinally.

3. The combination of the shaft-supporting spindle having the forked head one arm of which has in its inner side a cavity and the other a longitudinal groove or channel, extending from the end inward, and a bolt opening in said channel, the collar or box having trunnions seated respectively in the cavity and groove of the two fork arms, the shaft mounted in said collar or box, and the bolt for retaining the collar in place.

4. The combination with the forked head provided on its under side with a cavity *f'*, and in its upper inner side with the cavity *f*, and recess *h*, of the collar provided with projections to enter said cavities and the bolt provided with a head to enter the recess.

In testimony whereof I hereunto set my hand, this 21st day of March, 1892, in the presence of two attesting witnesses.

JAMES BENNETT IVEY.

Witnesses:

J. J. COBB,

GEO. B. TURPIN.

Correction in Letters Patent No. 493,726.

It is hereby certified that the name of the patentee in Letters Patent No. 493,726 granted March 21, 1893, for an improvement in "Shaft Bearings for Conveyers," was erroneously written and printed "James Bennett Ivey," whereas said name should have been written and printed *James Burnett Ivey*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 28th day of March, A. D. 1893.

[SEAL.]

CYRUS BUSSEY,
Assistant Secretary of the Interior.

Countersigned:

N. L. FROTHINGHAM,
Acting Commissioner of Patents.