(No Model.)

W. P. CANNING.

TRAVELING FLAT CARDING ENGINE.

No. 453,061. Patented May 26, 1891.

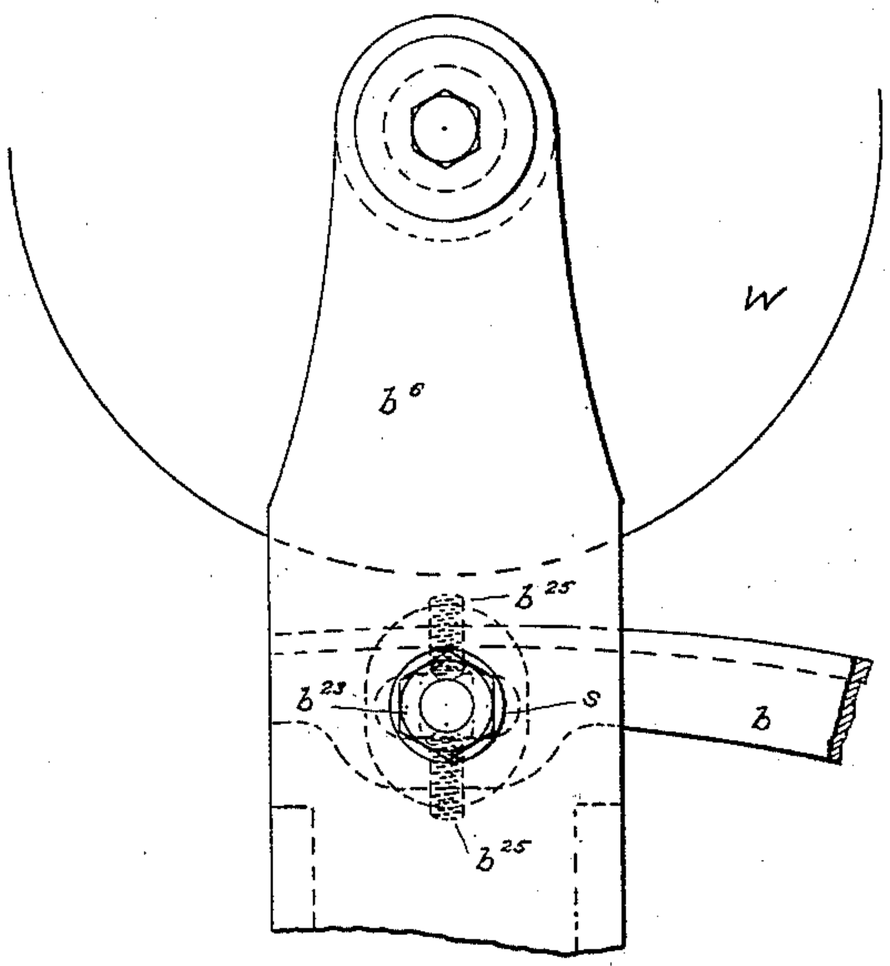

Fig. 1

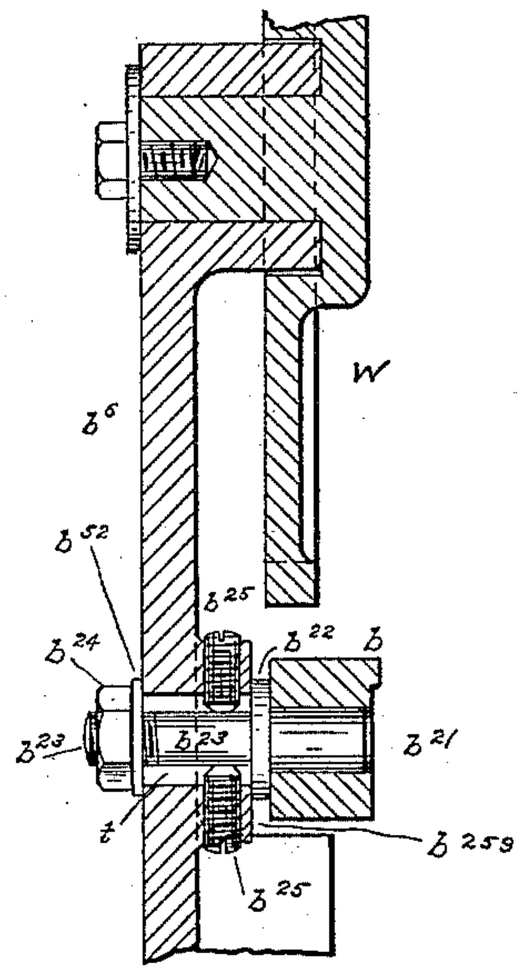

Fig. 2

Fig. 3

Fig. 4

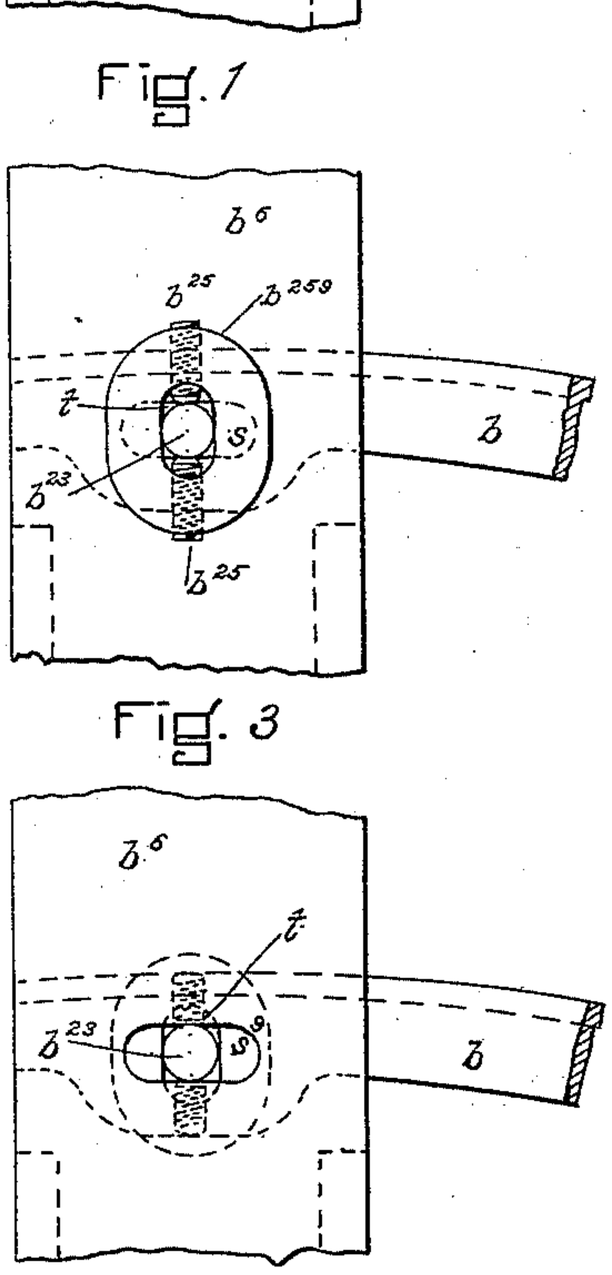

Fig. 5

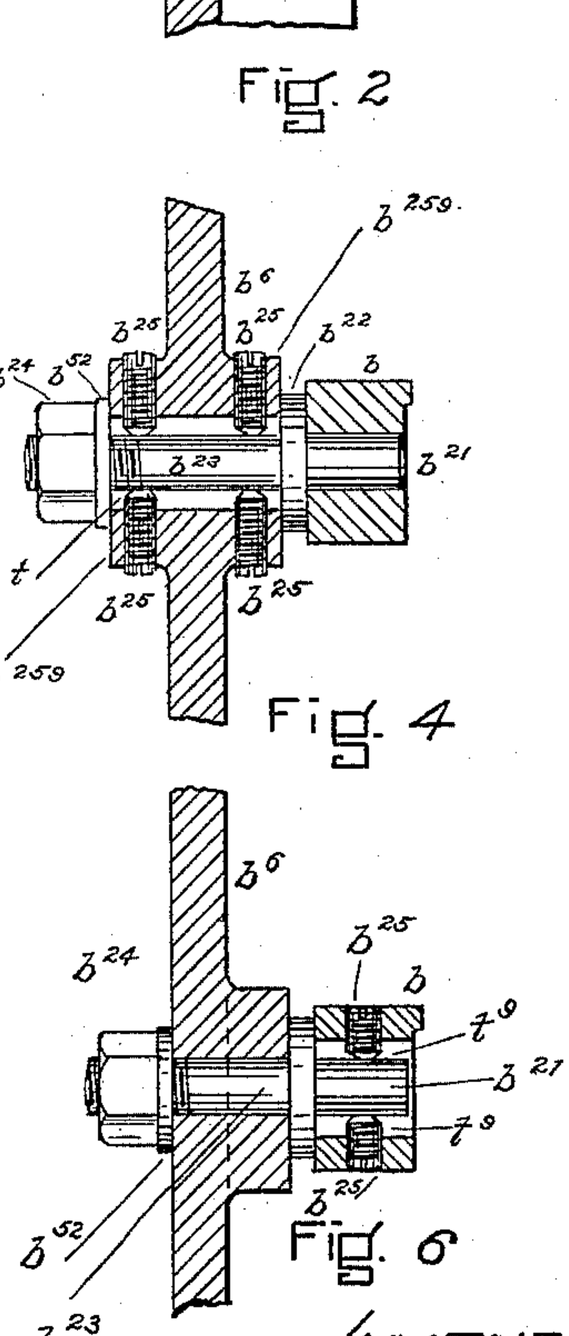

Fig. 6

WITNESSES.
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UNITED STATES PATENT OFFICE.

WILLIAM P. CANNING, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE LOWELL MACHINE SHOP, OF SAME PLACE.

TRAVELING-FLAT CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 453,061, dated May 26, 1891.

Application filed April 24, 1891. Serial No. 390,269. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. CANNING, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Traveling-Flat Carding Engines, of which the following is a specification.

In certain machines of the class known as "traveling-flat carding-engines" brackets are used at both ends of the chain of flats and on both sides of the machine to support the wheels or rollers which carry the chain of flats, and about which wheels or rollers that chain reverses the direction of its motion, these brackets also supporting the studs or stud-bolts by which the ends of the flexible bends on which the end portions of the flats travel are connected to the brackets. It is customary to enable the position of the ends of the flexible bends to be changed relatively to the periphery of the main cylinder by providing means for enabling the brackets to be moved toward and from the axis of the main cylinder. In effecting this adjustment of the brackets, however, the wheels or rollers aforesaid move in and out to the same extent as the ends of the flexible bends, as will be understood from the fact that the wheels or rollers are carried by the said brackets, and consequently there is no change in the distance between the upper surface of the flexible bend and the nearest point of the circumference of the neighboring wheel or roller. Sometimes it is necessary to be able to make the change in this distance apart from or in addition to the change in the position of the bracket, and, so far as I am aware, this has been done heretofore only by making an alteration of the shape of one or more parts, as by filing out the upper or lower surface of the hole in the bracket through which the stud or stud-bolt passes and then moving the stud or stud-bolt in that hole.

The objects of my invention are to make it practicable to vary this distance without altering the shape of any of the parts and with ease and convenience, and to make it certain that after this distance has once been altered it will not be changed by the jar of the machinery or by the force applied to the stud or stud-bolt through the flexible bend or through the bracket, as it is liable to be in the case where the hole has been enlarged by filing in the manner noted. To this end I make the position of the end of the flexible bend adjustable with respect to the bracket aforesaid and to the wheel or roller carried thereby, through the combination with the said flexible bend, the said bracket, and the stud-bolt, of oppositely-disposed set or adjusting screws contacting at their ends with the opposite sides of the stud-bolt and serving to determine the distance between the upper surface of the flexible bend and the nearest point of the periphery of the neighboring wheel or roller.

My invention admits of being embodied in a variety of forms differing from one another in certain respects, but all embodying the gist of my invention, which resides in the employment of oppositely-disposed set or adjusting screws contacting at their ends with opposite sides of the stud-bolt and serving when turned in or out to effect an adjustment of the position of the upper surface of the flexible bend with relation to the nearest point of the circumference of the neighboring chain-supporting wheel or roller.

In the accompanying drawings, Figure 1 is a view in side elevation of portions of certain parts of a traveling-flat carding-engine and shows one embodiment of my invention. Fig. 2 is a view of the same parts in vertical transverse section, the stud or stud-bolt, its binding-nut, and the set or adjusting screws being shown in elevation. Figs. 3 and 4, respectively, are views similar to Figs. 1 and 2, respectively, but with the wheel or roller omitted and showing a modification. Figs. 5 and 6, respectively, also are views similar to Figs. 1 and 2, respectively, also with the wheel or roller omitted and showing another modification.

In the drawings, reference being had in particular to Figs. 1 and 2 thereof, *w* is one of the wheels or rollers, which, as hereinbefore indicated, are placed on both sides of the machine and at both ends of the chain of flats and serve to carry the chain of flats, and

about which wheels or rollers that chain reverses the direction of its motion.

b is one of the flexible bends, only one end thereof being shown, and b^6 is the bracket supporting the wheel or roller *w* shown.

In practice the stud or stud-bolt which is passed through openings in the bracket and the adjacent end of the flexible bend usually is formed, as shown in the accompanying drawings, with two cylindrical parts b^{21} and b^{23}, and a cylindrical shoulder b^{22} between such parts, all having their axes in the same straight line, the part b^{21} entering an opening in the flexible bend *b* and the part b^{23} an opening in the bracket b^6, while the shoulder b^{22} comes between the flexible bend and the bracket. The end of part b^{23} of the stud-bolt is threaded, as shown, so that by placing a binding-nut b^{24} on the said threaded end on the side of the bracket b^6 opposite to that side thereof against which the shoulder b^{22} comes and turning up the said nut the stud-bolt is secured to the bracket. A washer b^{52} commonly is placed between the nut b^{24} and the side of the bracket. The exterior surface of shoulder b^{22} is intended to be engaged by a suitable tool—as, for instance, gas-tongs—and be held thereby from rotation as the nut b^{24} is turned up. The exterior portion or surface of the said shoulder may be formed of any suitable and preferred shape.

For the purpose hereinbefore stated—namely, that of enabling the distance between the surface of the flexible bend and the nearest point on the periphery of the adjacent or neighboring wheel or roller to be varied—I provide the oppositely-disposed set or adjusting screws b^{25}, the ends of which contact with or bear against opposite sides of the stud or stud-bolt, and which screws serve, as will now be made to appear, to determine the extent of the said distance. Herein I have represented the said screws as employed in connection with the form of stud-bolt with which I have been most familiar in practice; but it will be obvious that they may be employed in connection with other forms of such bolts without involving any departure from the spirit of my invention. In Figs. 1 to 4, inclusive, I have shown constructions in which the set or adjusting screws pass through portions of the bracket b^6, and by bearing against opposite sides of the portion b^{23} of the stud-bolt determine its position on the bracket, while in Figs. 5 and 6 I have shown the screws as passed through portions of the flexible bend, and by bearing against opposite sides of the portion b^{21} of the stud-bolt determining the position of the flexible bend relatively to the stud. In each case the result of the adjustment is the same—namely, the distance between the upper surface of the flexible bend and the nearest point on the circumference of the neighboring wheel or roller is varied. The constructions shown in Figs. 1 to 4 are adopted when the opening in the end of the flexible bend for the reception of the portion b^{21} of the stud-bolt is formed as a slot *s*, elongated lengthwise of the flexible bend to permit of movement of the end of the flexible bend in the direction of the length of the flexible bend. The construction shown in Figs. 5 and 6 is adopted when the opening in the bracket for the reception of the portion b^{23} of the stud-bolt is thus elongated or formed as a slot, for the purpose stated. I prefer to employ two screws, as represented in Figs. 1 and 2 of the drawings, in which figures the bracket b^6 is shown formed on its inner side with a boss b^{259}, through which are formed oppositely-disposed holes, which are threaded for the reception of the screws b^{25}. The opening *t* in the bracket *b* and its boss b^{259} for the portion b^{23} of the stud-bolt is formed as an elongated slot extending at right angles to the slot *s* in the end of the flexible bend and parallel to the center line of the adjusting-screws. The boss b^{259} might be formed upon the outer side of the bracket b^6 instead of being formed on the inner side thereof, as in Figs. 1 and 2.

In Figs. 3 and 4 I have shown a boss on each side of the bracket with screws passing through each boss. In Figs. 5 and 6 the opening in the bracket b^6 is formed as an elongated slot s^9, extending, as stated above, in the direction of the length of the flexible bend, and the opening in the flexible bend is formed as an elongated slot t^9, extending across the flexible bend in a direction at right angles to the slot in the bracket. In the said Figs. 5 and 6 the screws are shown passing through the middle portion of the width of the flexible bend; but they might instead be passed through a boss or bosses on one or both sides of the flexible bend.

When it is desired to vary or adjust the distance from the upper surface of the flexible bend to the nearest point of the circumference of the wheel or roller *w* by varying or adjusting the position of the end of the flexible bend with respect to the bracket, the nut b^{24} is loosened and the screws b^{25} are turned sufficiently in such direction as will cause the desired change of position. The nut is finally tightened with the parts in the desired position of adjustment. In Figs. 3 and 5 the nut b^{24} is omitted in order that the location of the slots may be the more easily seen.

I claim as my invention—

1. The combination, with a roller-supporting bracket, a flexible bend, and a stud-bolt having portions entering openings in the said bracket and flexible bend, respectively, of oppositely-disposed set or adjusting screws bearing against opposite sides of the stud-bolt and constituting a means of changing the distance from the upper surface of the flexible bend to the nearest point of the circumference of the roller, substantially as described.

2. The combination, with a roller-support-

ing bracket, a flexible bend, and a stud entering slots in the bracket and bend which cross each other, and provided with a collar and binding-nut, of oppositely-disposed set or adjusting screws bearing against opposite sides of the stud-bolt and constituting a means of changing the distance from the upper surface of the flexible bend to the nearest point of the circumference of the roller, substantially as described.

Lowell, Massachusetts, April 23, 1891.

WILLIAM P. CANNING.

In presence of—
EDWARD V. BURKE,
C. N. CHILDS.