

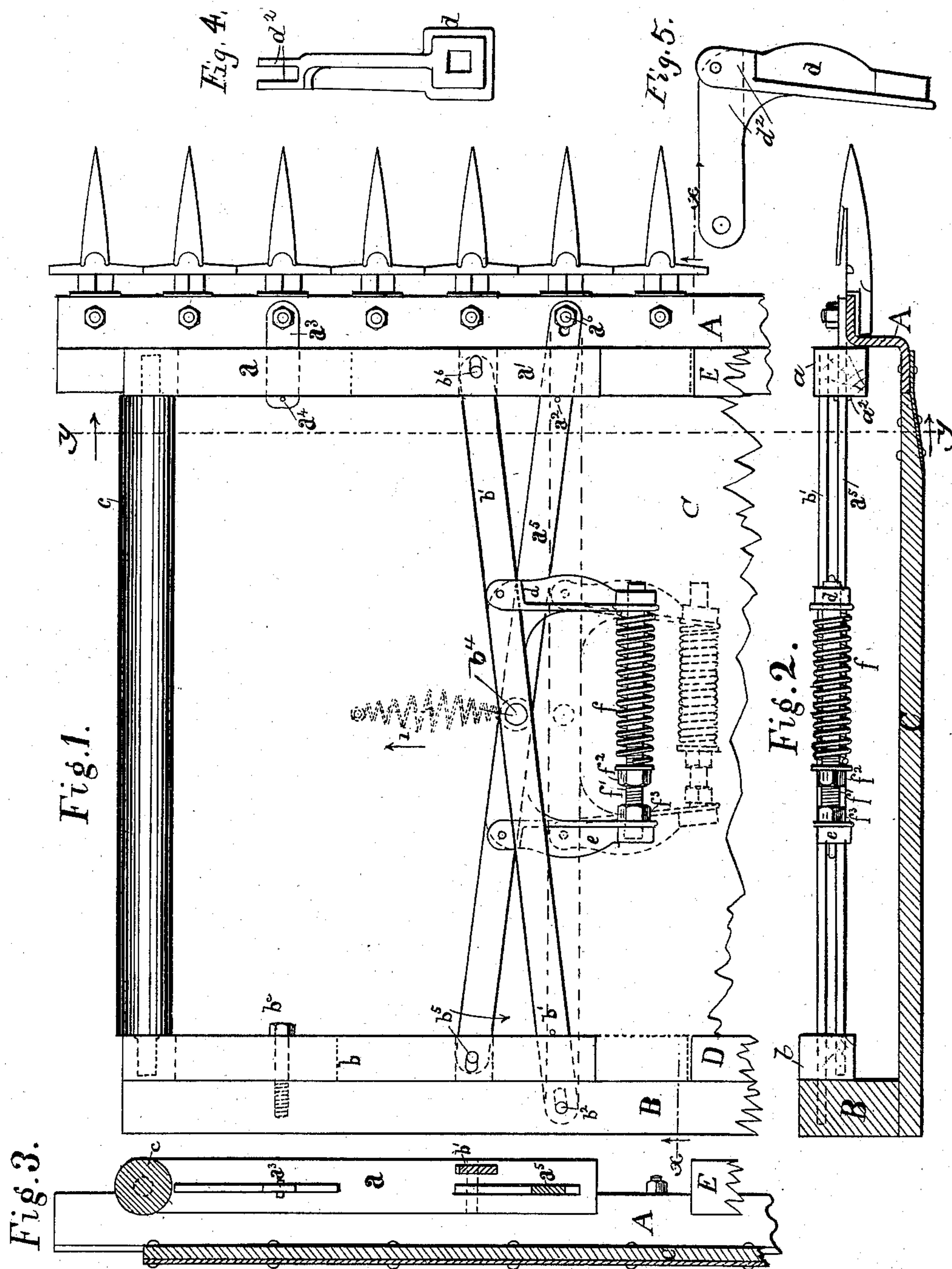
(No Model.)

J. F. STEWARD.

CANVAS STRETCHER FOR HARVESTING MACHINES.

No. 406,792.

Patented July 9, 1889.



Witnesses:

*R. D. Middlekauff*  
*A. L. Lupton*

Inventor:

*John F. Steward*



# UNITED STATES PATENT OFFICE.

JOHN F. STEWARD, OF CHICAGO, ILLINOIS.

## CANVAS-STRETCHER FOR HARVESTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 406,792, dated July 9, 1889.

Application filed November 24, 1886. Serial No. 219,833. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. STEWARD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mechanism for Stretching Canvas Carrier-Aprons, &c., of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, forming a part hereof.

My invention has reference to machines in which an endless carrier or conveyer apron is sustained at its ends upon parallel rollers.

The object of the invention is to provide a simple mechanism for increasing the distance between the rollers to obtain proper tension of the apron and at the same time maintain exact parallelism between the rollers.

For the purposes of illustration I have represented my improvement applied to the platform of a harvesting-machine. With the exception of the parts hereinafter specified, the improvement may be in all respects of ordinary construction, and I have therefore confined the drawings to those portions with which my improvements are immediately associated.

In the accompanying drawings, Figure 1 is a top plan view of a portion of a harvester-platform to show the roll for supporting one end of the apron and the mechanism for supporting and adjusting said roll. Fig. 2 is a vertical transverse section on the line  $x x$  of Fig. 1. Fig. 3 is a longitudinal vertical section on the line  $y y$  of Fig. 1. Figs. 4 and 5 are respectively an edge view and a plan view of a detail hereinafter described.

Referring to the drawings, A represents the finger-bar, B the rear platform-sill, and C the bottom board, of a harvesting-machine, constructed and united as usual.

D and E are bars fixed to the sills, as usual, to sustain the edges of the apron.

In carrying my improvement into effect I mount the respective journals of the usual roller  $c$ , by which the outer end of the conveyer-apron is carried, in horizontal sliding bars  $a$  and  $b$ , which also assist, like the customary sills, to sustain the edges of the apron. For the purpose of moving these slides simultaneously and equally in an outward direc-

tion, I provide the two crossed levers  $a^5$  and  $b^5$ , united by the central pivot  $b^4$ . The lever  $a^5$  is pivoted to the finger-bar by the guard-bolt  $a^6$ , extending thence through a slot in the slide  $a$  and across the platform, and is mounted at the rear end in a mortise in the slide  $b$ , to which it may be further connected by a slot and pin  $b^5$ , if desirable.

The lever  $b^5$  is connected at its rear end to the sill B by a vertical pivot  $b^2$ , and extends thence forward through a slot in the slide  $b$  across the platform into a mortise in the front slide  $a$ , which may be further connected by the pin  $b^6$  and the slot, if desired.

It will be observed that the two levers applied as above compel the two slides  $a$  and  $b$  to move equally in unison, thus allowing the roll  $c$  to move inward and outward to maintain it at all times parallel with the companion roll, which will be mounted at the opposite end of the platform, as usual.

The parts constructed as above may be adjusted by hand and fixed in position in any suitable manner, or a spring may be, and preferably is, applied to urge the slides outward and automatically maintain the tension of the apron. I prefer to apply the spring as represented in Figs. 1 and 2, in which  $d$  and  $e$  represent arms secured rigidly to the respective levers, and extending stubbleward therefrom. A bolt  $f^1$  is passed loosely through the ends of these arms and encircled by a helical spring  $f$ , which bears at one end against the arm  $d$  and at the opposite end against an adjustable nut  $f^2$  on the bolt. A second nut  $f^3$ , applied to the bolt, bears against the arm  $e$ . Under this arrangement, the spring acting to separate the free ends of the arms causes them to urge the lever in a proper direction to force the slides and the roller outward. By turning the nut  $f^2$  the spring may be compressed, and thus the tension applied to the apron increased.

The slides  $a$  and  $b$  may be supported and guided in any appropriate manner; but I recommend the construction shown in the drawings. The slide  $a$  is sustained at its outer end by a plate  $a^3$ , secured to the finger-bar by one of the guard-bolts and extended thence rearward through a horizontal slot in the slide, and provided with a pin  $a^4$  to hold



the slide forward to its place. At the stub-  
ble end this slide receives support from the  
lever  $a^5$ , which is extended through a hori-  
zontal slot therein and provided with a pin  
5  $a^2$  to hold the slide forward.

The slide  $b$  is supported in a similar man-  
ner at its inner end by the lever  $b'$  passing  
through a horizontal slot therein, and is sup-  
ported at its outer end by a bolt  $b^3$  passing  
10 through a horizontal slot into the rear sill.

The lever-arms  $d$  and  $e$  may be formed and  
secured to the levers in any suitable manner;  
but I recommend their construction of L  
form, as shown in Figs. 4 and 5, with flanges  
15  $d^2$  to embrace the levers and receive fasten-  
ing bolts or rivets.

Instead of applying the spring between the  
arms, as shown, it may be connected to the  
pivot which unites the levers and extended  
20 thence grainward to a fixed support, as shown  
in dotted lines in Fig. 1.

The ends of the levers must be slotted at  
their sustaining-pivots or the connecting-  
pivot passed through a slot to prevent the  
25 parts from cramping as the levers change po-  
sition.

Having thus described my invention, what  
I claim is—

1. In combination with the platform-frame,  
30 the apron-sustaining roll, the two slides sup-  
porting said roll, and the crossed levers united  
by the pivot and connected each at one end  
to the frame and at the other end to one of  
the slides, whereby the two slides are com-  
35 pelled to move simultaneously and equally.

2. In a harvester, the combination of a suit-  
able supporting-frame, an apron-carrying roll,  
two slides sustaining the ends of said roll, two

crossed levers pivoted together and connect-  
ing at their opposite ends the respective slides 40  
with the frame, and a spring, substantially as  
described, acting to carry the roller outward  
and thereby stretch the apron.

3. In combination with the supporting-  
frame, the apron-carrying roll, and the roll- 45  
supporting slides, the crossed levers connect-  
ing at their opposite ends the respective  
slides with the frame and pivoted together,  
the rigid arms on said levers, and a spring  
50 acting between said arms.

4. The roll, the roll-carrying slides  $a$   $b$ , the  
crossed levers connected to the frame and to  
the respective slides at opposite ends and piv-  
oted together, the arms  $d$   $e$ , secured rigidly to  
the respective levers, the bolt  $f'$ , the spring  $f$  55  
thereon, and the adjustable nut  $f^2$ , said ele-  
ments combined substantially as described  
and shown.

5. In combination with the supporting-  
frame and the two roll-supporting slides pro- 60  
vided with slots, the crossed levers extending  
through the slots in the slides and connected  
at their opposite ends to the frame and the  
slides, substantially as described, whereby the  
levers are adapted to serve the twofold pur- 65  
pose of adjusting and supporting the slides.

6. In combination with the roll-supporting  
slide, the finger-bar and the guard-finger  
bolted thereto, as usual, and the slide-sus-  
taining plate  $a^3$ , secured to the bar by the 70  
vertical finger-bolt.

JOHN F. STEWARD.

Witnesses:

F. C. PIERS,

WILFRED TWINCH.