

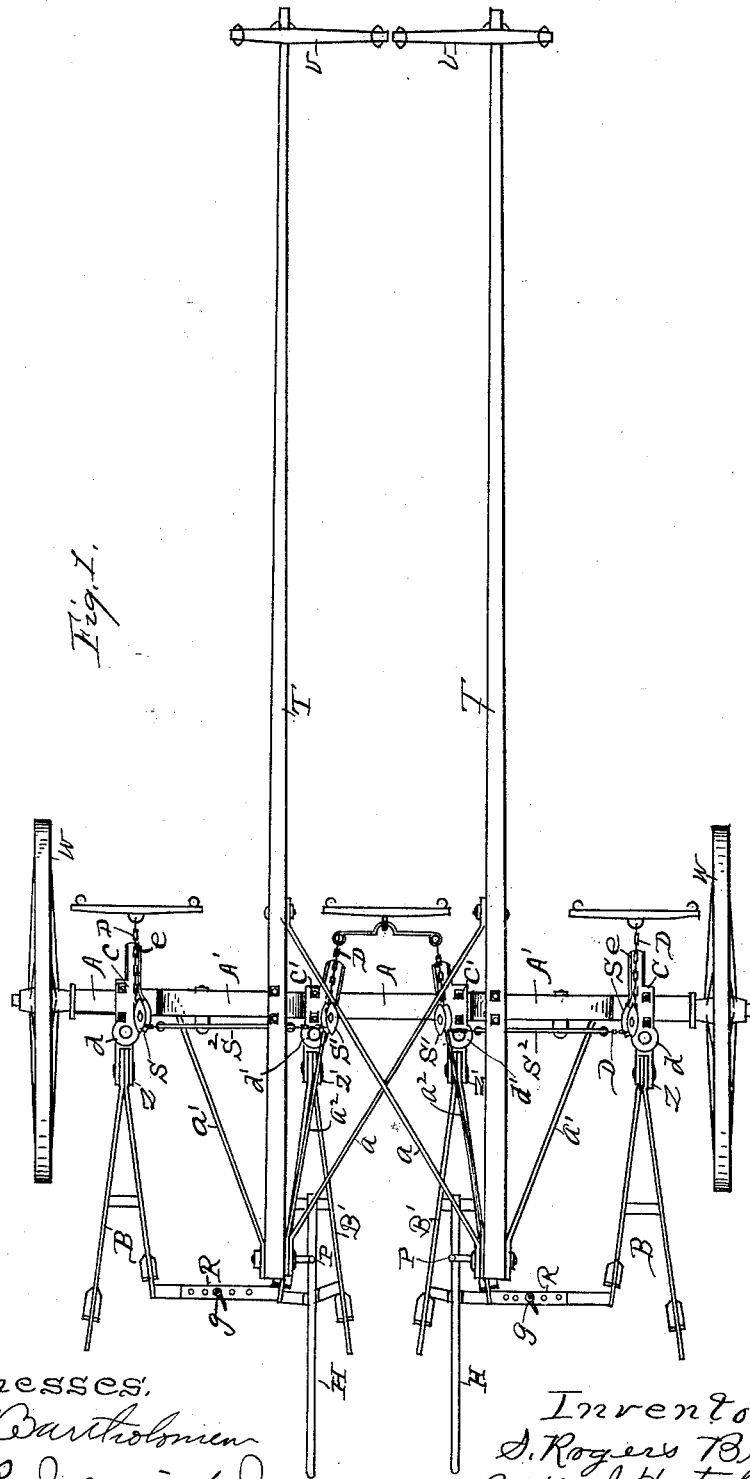
(No Model.)

2 Sheets—Sheet 1.

S. R. BROWN.
CULTIVATOR.

No. 422,711.

Patented Mar. 4, 1890.



Witnesses:
J. M. Bartholomew
A. R. Jeserich Jr.

Inventor
S. Rogers Brown
By *Wm. J. Hutchins*
Atty.

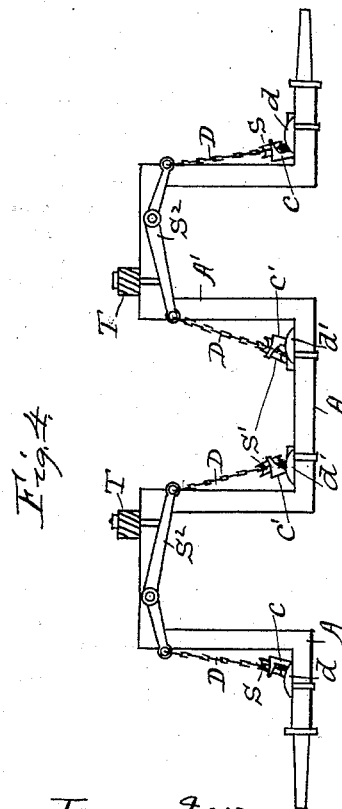
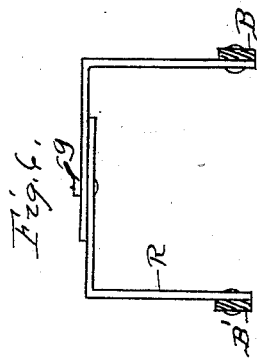
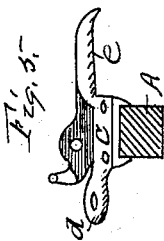
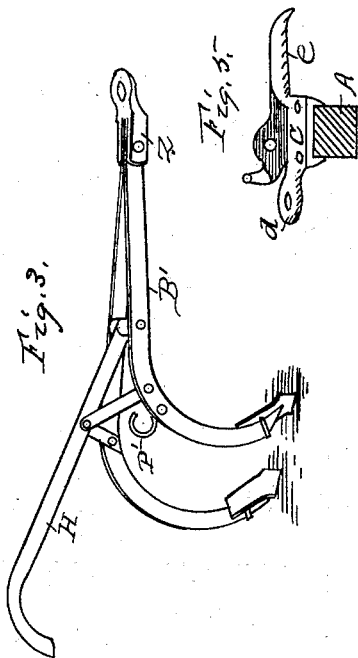
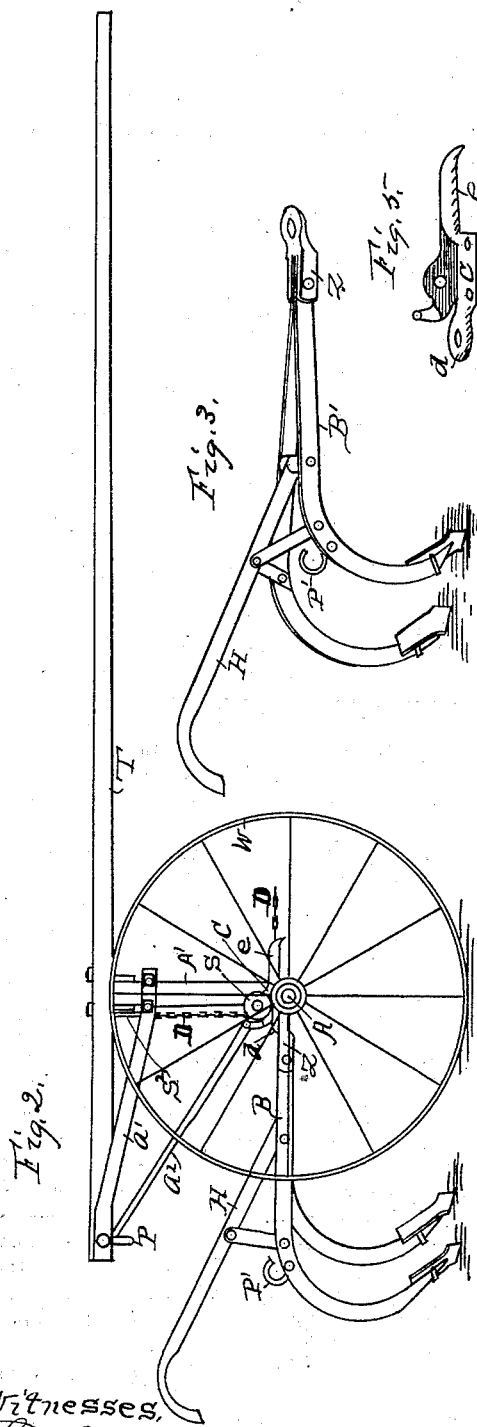
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UNITED STATES PATENT OFFICE.

STEPHEN ROGERS BROWN, OF WICHITA, KANSAS.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 422,711, dated March 4, 1890.

Application filed June 5, 1889. Serial No. 313,207. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN ROGERS BROWN, a citizen of the United States of America, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Cultivators, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a top plan view of my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a detailed perspective view of one of the pair of shovel-beams. Fig. 4 is a side plan of the double-arched axle of the cultivator, showing the tongues in cross-section and a plan of the draft-equalizer. Fig. 5 is a perspective view of the casting which clips to the axle for supporting the lower draft-sheaves and to which the shovel-beams are pivotally connected; and Fig. 6 is a side view of the adjustable arch which connects together the pairs of shovel-beams, and a cross-section of the beams to which it is connected.

This invention relates to certain improvements in a three-horse cultivator for cultivating corn and the like, adapted to tend two rows at the same time by a single operation; and it consists of a double-arched axle mounted on a pair of traveling wheels, and provided with a pair of tongues arranged to accommodate a horse between them and one at either side of a chain draft-equalizer operating over sheave-wheels secured to the axle by means of castings clipped to the axle on a line parallel with the axle-spindles, and connecting equalizing-beams pivotally secured to the upper part of the arches, and of a set of four pairs of shovel-beams pivotally connected to the axle, a pair either side of either arch, each outer pair of beams being connected to the adjoining inner pair by an adjustable arch, and each inside pair is provided with a handle for guiding the shovels.

Referring to the drawings, A represents the axle, formed with the two arches A' A'.

W W are the traveling wheels, which are mounted on and support the axle.

T T are a pair of tongues, one being secured on the top of each arch A' near their inner part by means of clips, as shown.

a a are a pair of cross-braces secured to the rear part of the tongues to give them lateral strength.

a' a' are a pair of side braces connecting the rear end of the tongues and outer upper part of the axle-arches for strength to the arches, and a² a² are a pair of braces connecting the rear end of the tongues with the axle proper for bracing the axle to properly support the arches A' in a vertical position.

c c are castings made, respectively, for a right and left position for supporting the outer lower draft-equalizing sheaves S S, and are secured to the axle A, as shown, by means of clips, and are provided with rear-extending perforated plates d d, to which the outer pairs of shovel-beams are connected, and with each a forward-extending hollowed arm e e, which supports that portion of the equalizing draft-chain leading from the sheaves to the whiffletrees. c' c' are similar castings similarly connected to the axle between the arches A' A' and support the inner lower draft-equalizing sheaves S' S', and have connected thereto the inner pairs of shovel-beams, as shown.

S² S² are a pair of equalizing-beams, respectively pivotally secured to the upper part of arches A' A' at a point about one-third way from their outer end for the purpose of connecting and supporting the draft-chain at the arches, so as to provide free way under the arches and also equalize the draft on the chain; and D is the draft-chain, and is arranged connecting either end of each equalizer S², thence down at either side of each arch about the outer sheaves S S and about sheaves S' S', having a whiffletree connected at each end opposite the said end sheaves and a whiffletree connected to its center opposite the center sheaves, so that draft to the said whiffletrees will be equalized by reason of being connected through the medium of said chain and the equalizers S² S².

It will be observed by reference to the drawings that I arrange the sheaves at an angle corresponding with the angle of the chain where it leads down from the equalizing-beams S² S², and thereby relieve the sheaves from side friction.

B B represent the outer pairs of shovel-beams, having the ordinary shovels, and are

pivotally connected with the axle adjacent the outer part of the arches through the medium of the perforated plates *d d* of castings *c c* and the intermediate couplings *Z Z*, which
 5 are provided with a perforated section pivotally connected with plates *d d* by means of bolts engaging in said perforations in a vertical position, thus permitting the said beams to move laterally on said pivots, the opposite
 10 sections of said couplings being forked and arranged to receive the forward end of said beams between the forks, and both the forks and beams are perforated and pivotally connected by means of bolts arranged horizontally, thus permitting the said beam to move
 15 vertically on said pivots.

B' B' represent the inner pairs of shovel-beams, also having the ordinary shovels, and are pivotally connected with the axle adjacent
 20 the inner part of the arches by means of plates *d' d'*, couplings *Z' Z'*, and pivotal bolts in the same manner as the outer beams. Each pair of inner beams are adjustably connected near their outer part with the adjacent outer beams
 25 by means of the adjustable arches *R R*, which are provided with a series of holes and secured to the desired lateral adjustment by means of the bolts *g g*, as shown, thus establishing two independently-adjustable sets of
 30 beams and shovels, each set adapted to stride a row of corn with two shovels at either side of the row, and be managed by the operator traveling between the rows by means of the handles *H H*, which are respectively secured
 35 to the inner beams *B' B'*, as shown.

P P are hooks respectively depending from the inner rear end part of the tongues *T T*, and *P' P'* are upright loops respectively secured to the inner shovel-beams *B' B'*, and
 40 are adapted to hold the sets of shovels off the ground when the beams are raised, and they are hooked over hooks *P P*, which is done when transporting the machine.

For equalizing the weight of the end of the
 45 tongues *T T* each tongue is provided with a separate neck-yoke *V*, each presenting two-thirds its length to the space between the tongues, thus equalizing the said weight between the three horses.

50 In operation the center horse will travel between the rows of corn being cultivated, and the outer horses will travel one at either side between the adjacent rows, and each draw by means of being hitched to their respective whiffletree on the equalizing-chain
 55 *D*, and each draw his share to operate the cultivator.

In some instances in cultivating, the two
 60 inner pairs of beams *B' B'* may be connected, and thus cause all the shovels to bear a like

distance one from the other at all times, and also, if desired, a seat may be attached to accommodate the operator.

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

1. The combination, with the double-arched axle *A*, having the tongues *T T*, arranged as described and shown, the shovel-beams *B B* and *B' B'*, the adjustable arches *R R*, connecting said beams in two separate sets, the
 70 handles *H H*, respectively connecting said sets of beams, the couplings *Z Z* and *Z' Z'*, and castings *c c* and *c' c'*, having the perforated plates overreaching the axle and secured thereto and pivotally connecting said
 75 couplings, whereby said shovel-beams are permitted both lateral and vertical movement on the pivots of said axle-connections and the equalizing-beams and the chain draft-equalizer for hauling the machine, substantially as and for the purpose set forth.

2. In combination with the axle *A*, the castings *c c* and *c' c'*, clipped to said axle and provided with a seat, whereby the equalizing-sheaves are pivotally connected at an angle
 85 with the axle with a rear extending perforated plate, to which the shovel-beams are pivotally connected by means of the intermediate couplings and bolts, as set forth, and with
 90 the arms extending forward from the sheaves for supporting that part of the equalizing-chain adjacent the whiffletrees, substantially as specified.

3. In combination with the double-arched
 95 axle *A*, the castings *c c* and *c' c'*, clipped to the axle, one either side from each arch, the sheaves *S S* and *S' S'*, respectively secured to said castings at an angle with the axle, as set forth, the equalizing-beams *S² S²*, respectively
 100 secured to the upper side part of the axle-arches, and the draft-chain *D*, arranged connecting said equalizing-beams and about said sheaves and connecting the whiffletrees respectively at its center and either end, thus
 105 forming a three-horse equalizer, for the purpose specified.

4. In the cultivator described and shown, the castings *c c'*, provided with seats adapting them to be secured to the axle, with
 110 extending perforated plates for pivotally connecting the shovel-beams, with opposite-extending hollowed arms for supporting the draft-chain, and with upright parts adapted to support the equalizing-sheaves, substantially as set forth.

S. ROGERS BROWN.

Witnesses:

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 PHILIP BRYAN.