

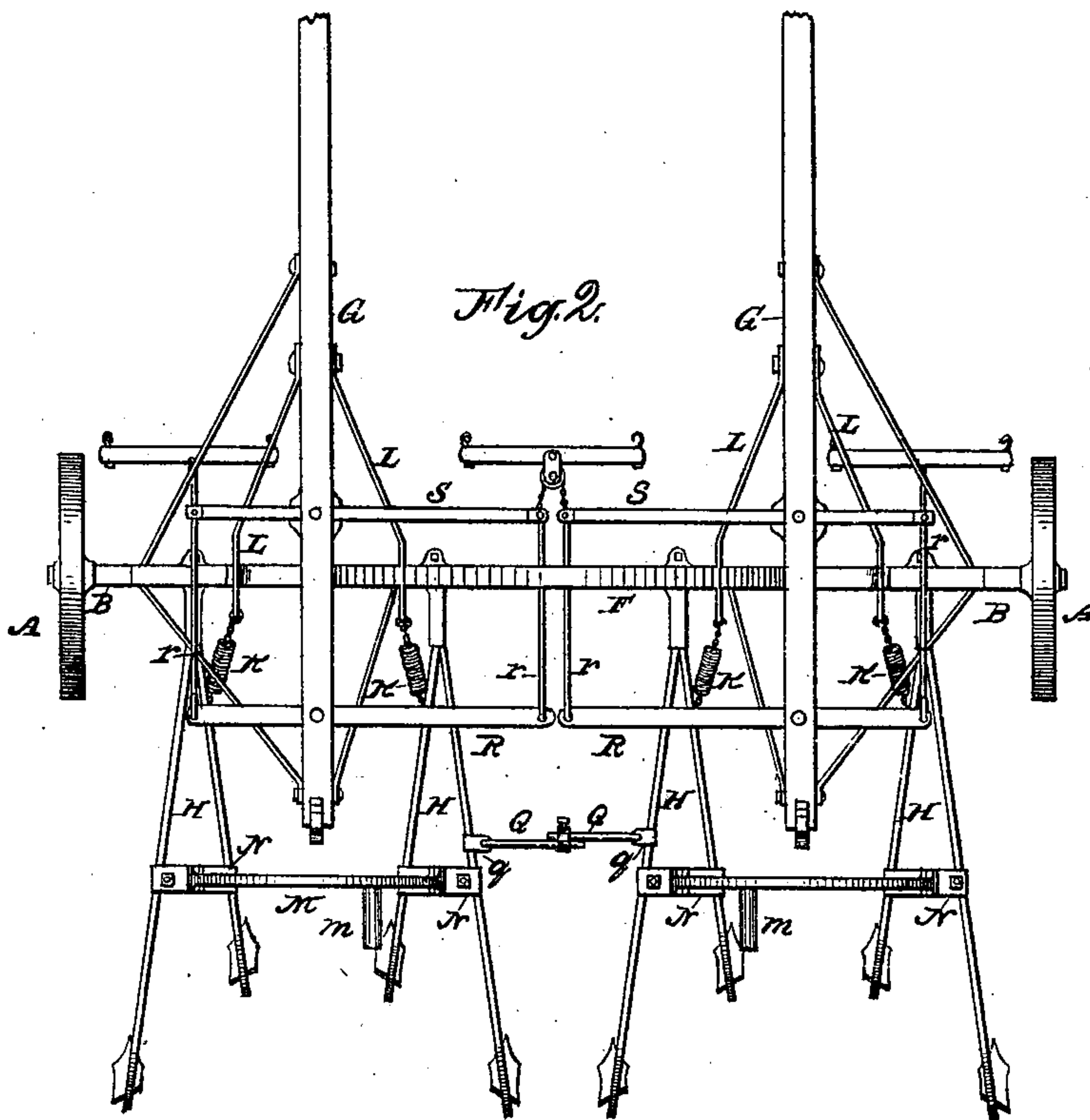
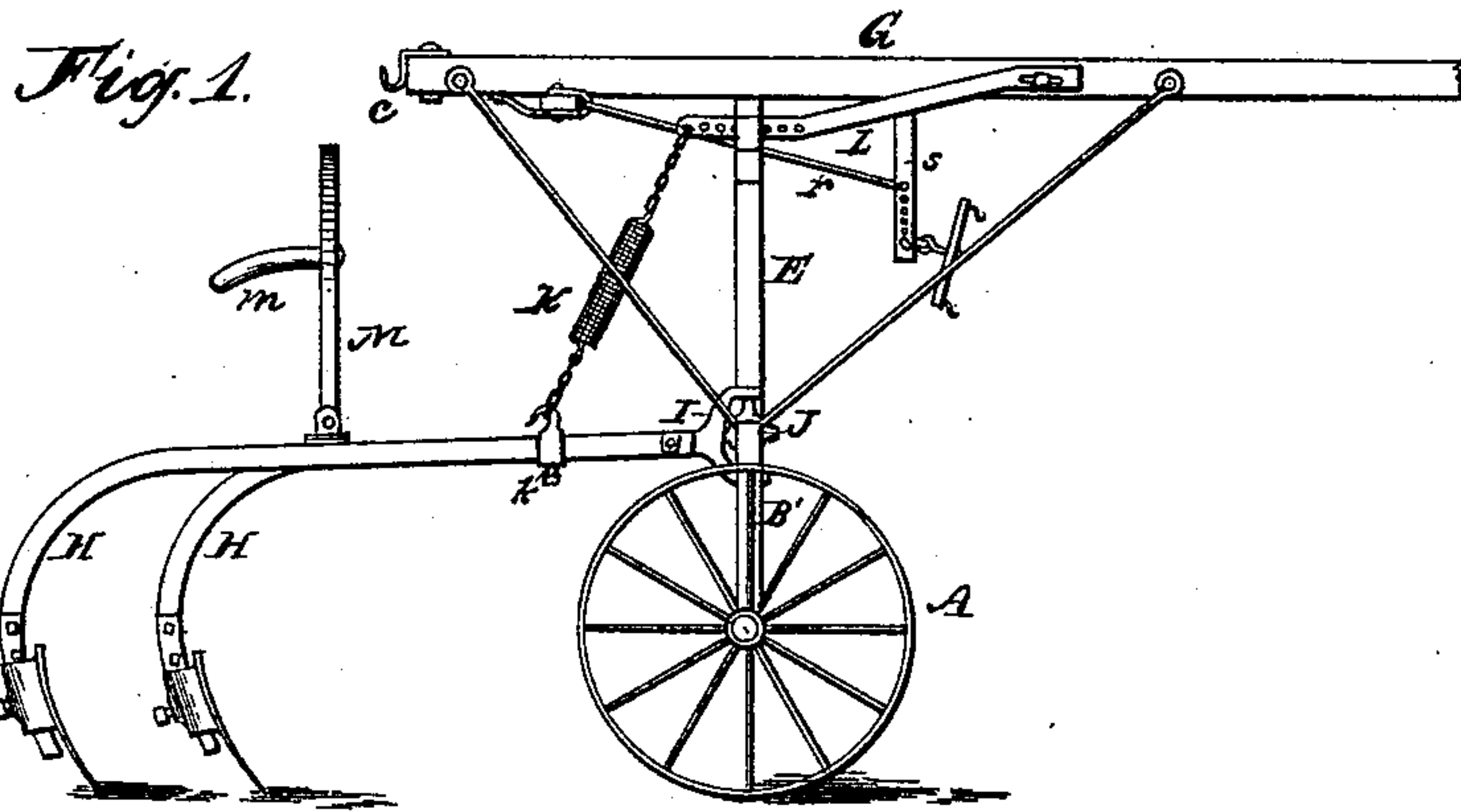
(No Model.)

2 Sheets—Sheet 1.

E. H. SNYDER.
CULTIVATOR.

No. 592,715.

Patented Oct. 26, 1897.



Attest.

J. F. Groat,
C. J. Kubicek.

Inventor

Emmanuel H. Snyder
By J. M. Johnson
Atty.

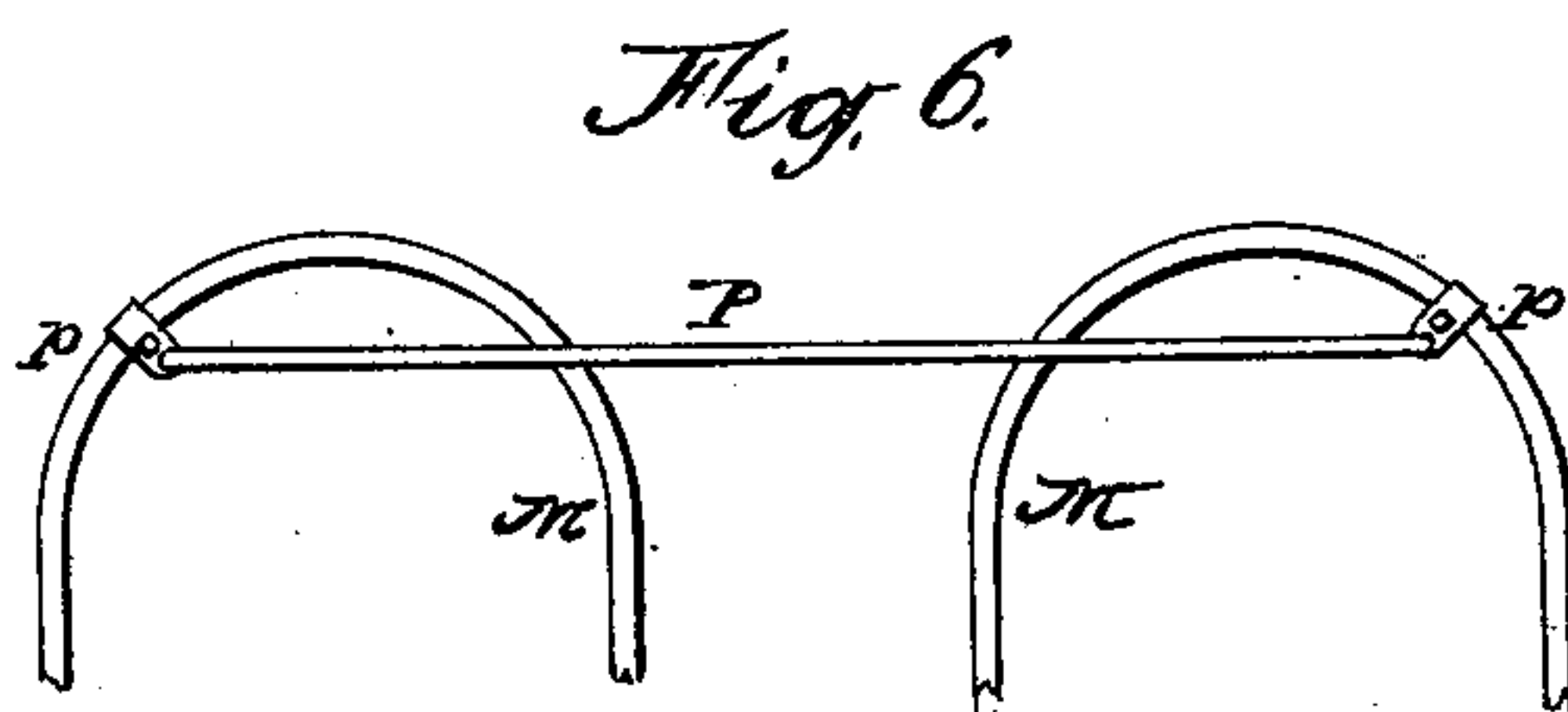
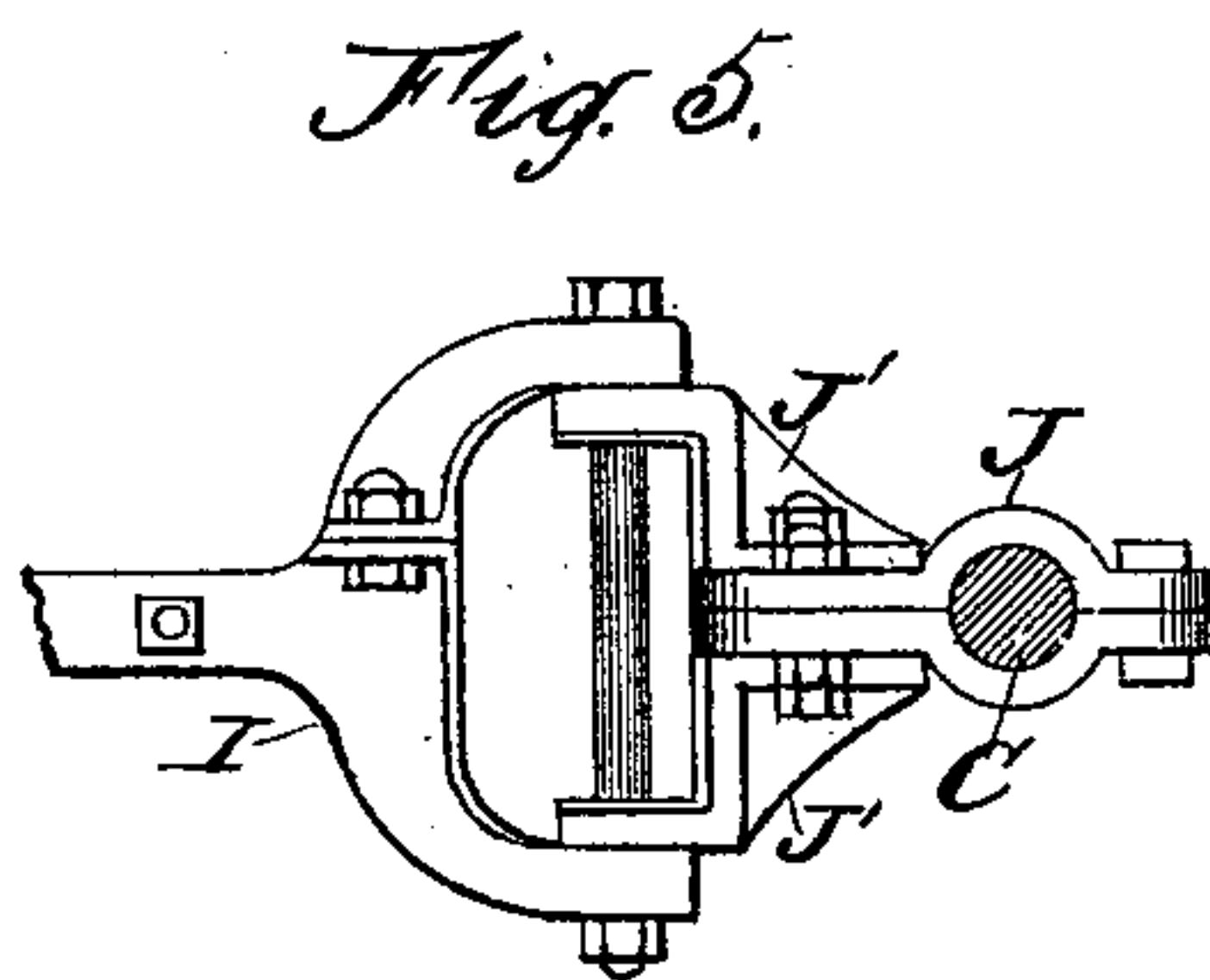
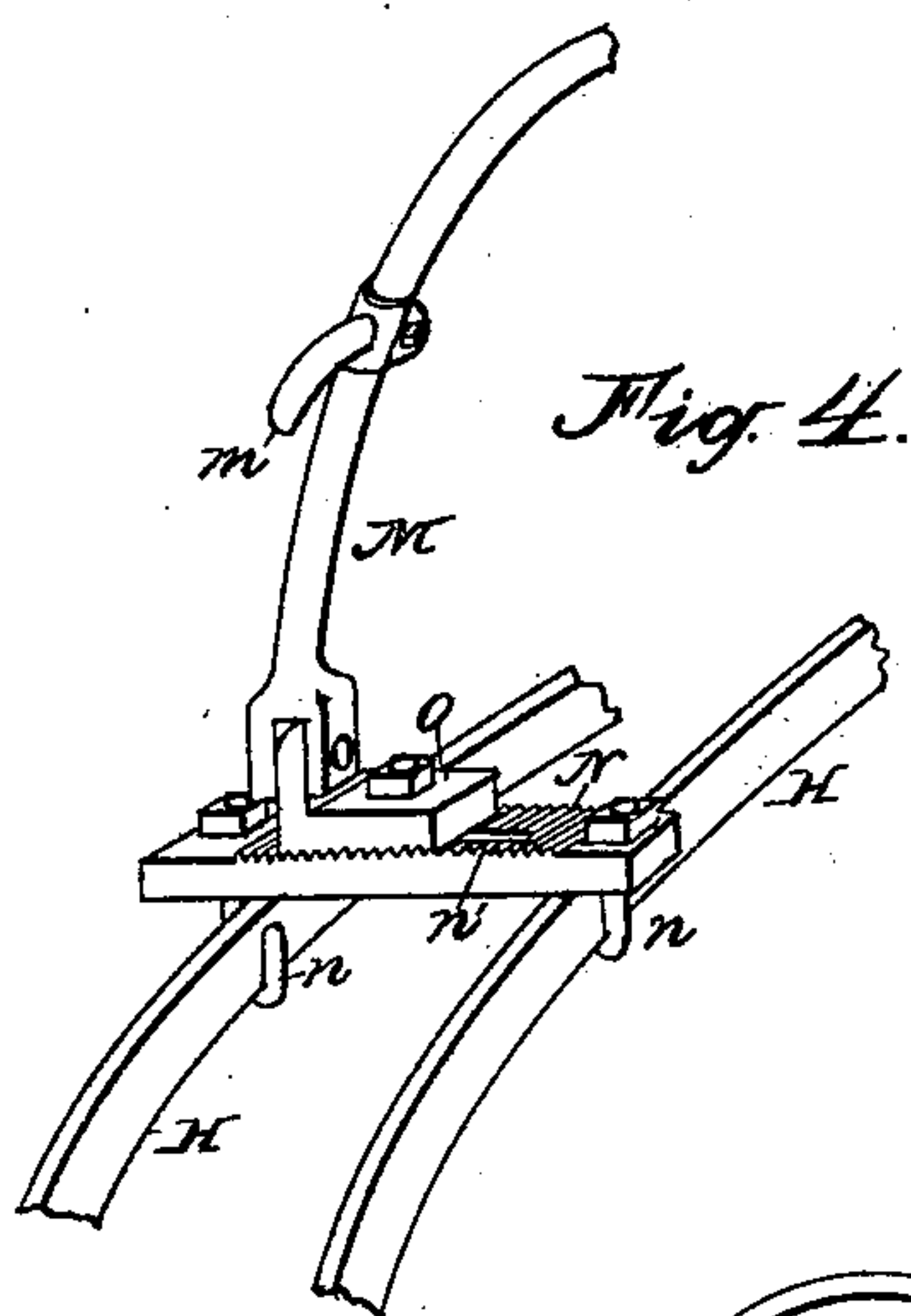
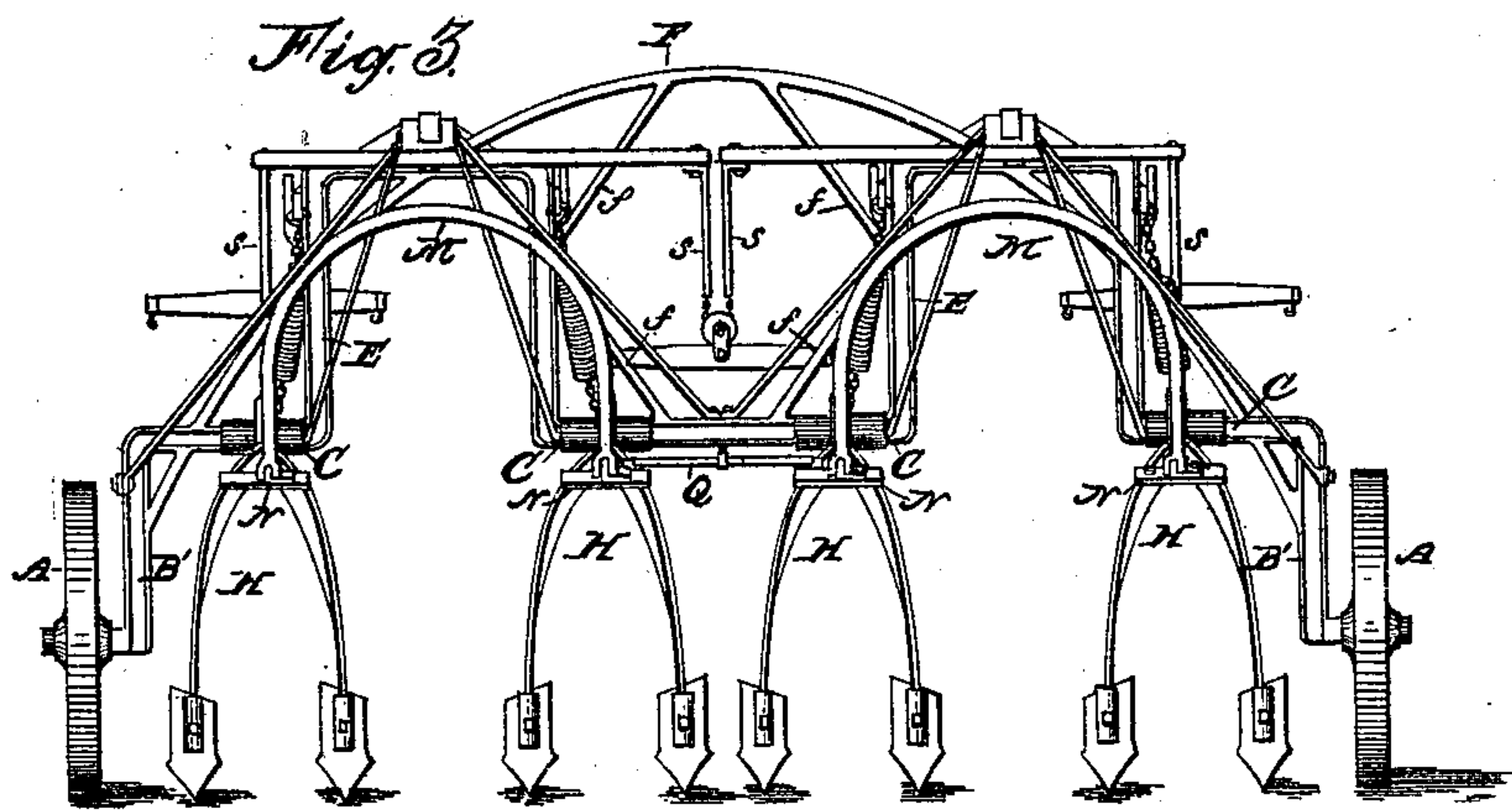
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2 Sheets—Sheet 2.

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By J. M. S. John
Atty.^r

UNITED STATES PATENT OFFICE.

EMMANUEL H. SNYDER, OF CEDAR RAPIDS, IOWA.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 592,715, dated October 26, 1897.

Application filed August 28, 1896. Serial No. 604,231. (No model.)

To all whom it may concern:

Be it known that I, EMMANUEL H. SNYDER, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Cultivators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to produce a strong and efficient cultivator adapted to cultivate two rows of corn at once, and an implement embodying the invention will be fully hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1, Sheet 1, is a side elevation of my improved cultivator. Fig. 2 is a plan view of the same. Fig. 3, Sheet 2, is a rear elevation of the same. Fig. 4 is a fragmentary view in perspective showing the attachment of the plow-beams to their connecting-arches. Fig. 5 is a fragmentary side elevation, partly sectional, showing the universal joint connecting the front end of the plow-beam with the main axle. Fig. 6 is a fragmentary rear elevation showing a simple device for connecting two plow-beam arches together.

Similar letters of reference indicate corresponding parts.

On suitable wheels A A is mounted the axle or main arch, which is practically a double arch, being designed to straddle two rows of corn. It consists, essentially, of axles B B, to which the wheels are attached, and an upwardly-extending standard B' B', rising from each axle to a height suitable for the connection of the plow-beams to the axle. Three horizontal portions C, C, and D, cylindrical, as shown in Fig. 5, take the boxes of the joint connecting the plow-beam with the axle. Between the parts C, C, and D are arches E E to permit the corn-row to pass through. The double arch described is trussed by an intersecting arch F and diagonal braces f f f f. In practice this entire trussed axle or double arch is made of malleable iron or steel in a single casting.

To the top of each main arch E E is secured a tongue G, the rear end of each tongue projecting backwardly to a considerable distance, as shown. Diagonal braces g g g serve to stay

the tongues horizontally and laterally and give them a rigid connection with the truss.

The plow-beams H H H H may be of any desired form and are swiveled to the axle by a stirrup I, secured to each beam and pivotally connected to a box J, which is in two parts, bolted together, as illustrated in Fig. 5.

To counteract the downward suction of the shovels a compensating-spring K connects with each beam and at the other end with an adjustable arm L, bolted at one end to the tongue, the other end resting in a notch at the side of the arch E. The hook k, to which one end of the spring connects, is made adjustable on the beam and the other end of the spring may be adjusted to a series of holes in the arm L, which is also adjustable on the tongue, as will be seen. This admits of the angle and the tension of the spring with respect to the beam being accurately regulated, so as to control very nicely the depth to which the shovels will penetrate. Two or more notches for the support of this arm L may be provided at the side of the arch, as indicated in Fig. 1, so that the height of the spring end of the arm may be varied, if desired.

The pair of beams designed to cultivate each corn-row is connected by an arch M, to which is attached an adjustable handle m for the control of the plows. As the distance of the two beams apart may often need to be varied, provision is made for shifting them. This consists of a notched plate N, secured to the beam (the two parts of the beam) by hook-bolts n n. A slot n' in the plate is adapted to receive a bolt passing through this plate and an angle-plate O, to which the end of the arch M is hinged. The arch has a limited swing on the angle-plate, its squared ends serving to stop it forward and back. This permits the arch to tilt back for the convenience of the operator walking behind the cultivator and also admits of its being tilted forward to engage with a hook c at the rear end of each tongue when it is desired to suspend the plows out of contact with the ground. Both of these arches may be connected so as to move concurrently by a rod P and adjustable clips p p. This rod affords a convenient means for guiding the plows, instead of the handles above described or in addition thereto.

The two sets of plows are coupled by an ad-

justable connecting-rod Q, hinged to clips *qq*, secured to the inner pair of beams.

The cultivator is designed for three horses. To this end the singletrees are connected to
5 equalizers R R through the medium of the usual parallel bars S S, which have depending arms *ss*, to which the singletrees are connected, rods *rr* connecting the equalizers with the parallel bars. The middle singletree con-
10 nects by a chain and sheave with the inner ends of the equalizers, the pivotal points of which are twice the distance from this as from the other singletrees, thus equalizing the pull of all three horses. As will be noticed, the
15 equalizers R R are pivoted to each tongue near the rear end, and as the wheels are made quite small this admits of the horses being hitched very close to the main arch, a desirable feature in the management of the team
20 in turning ends, &c.

An improved coupling for the plows with the main arch is illustrated in Fig. 5. The box J is made in halves, so as to be mounted on the bearings C C of the arch. To the rear
25 flanges of the box are secured a pair of brackets J' J', which connect with the stirrup I by a bolt I'. This admits of the convenient connection of the parts and also for the taking up of lost motion as the parts wear.

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

1. In a cultivator, the herein-described arch for four plows, consisting essentially of axles
35 B B, standard portions B' B', horizontal bearing portions C C C C, arches E E, truss arch

F and diagonal braces *fff*, substantially as and for the purpose set forth.

2. In a cultivator, the combination with the main arch, of plow-beams substantially as
40 specified, a pair of tongues, adjustable, rearwardly-extending arms connecting with said tongues, notches in said arch to support the rear ends of said arms, springs connecting
45 with the rear ends of said arms, and an adjustable connection of the other ends of said springs with the plow-beams, as described.

3. In a cultivator, the combination with a plow-beam, of a notched plate provided with a slot for a bolt, hook-bolts adapted to secure
50 said plate to the beam, an angle-plate adjustable thereon, and an arch pivoted to said angle-plate, and having a limited tilt with respect thereto.

4. In a cultivator, the combination of a main
55 arch, a pair of tongues attached thereto, and extending some distance back thereof, a pair of equalizers R R, pivoted to swing in a horizontal plane, and at some distance from their
60 centers parallel bars S S, connecting-rods *rrrr*, singletrees connecting with the outer and shorter ends of the parallel bars, and a singletree connecting with the inner ends thereof by a chain and pulley, substantially
65 as described.

In testimony whereof I affix my signature in presence of two witnesses.

EMMANUEL H. SNYDER.

Witnesses:

J. F. GROAT,
J. M. ST. JOHN.