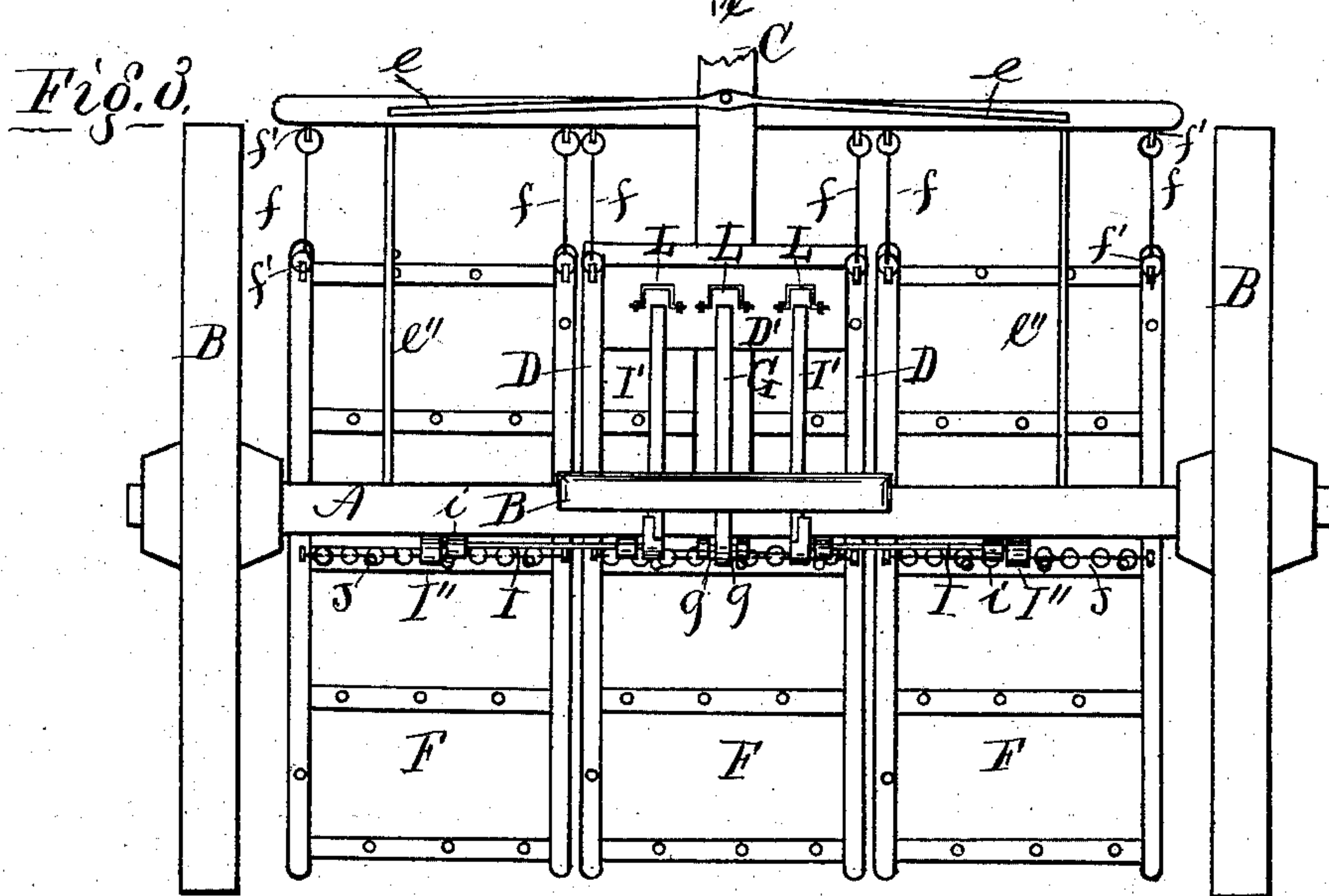
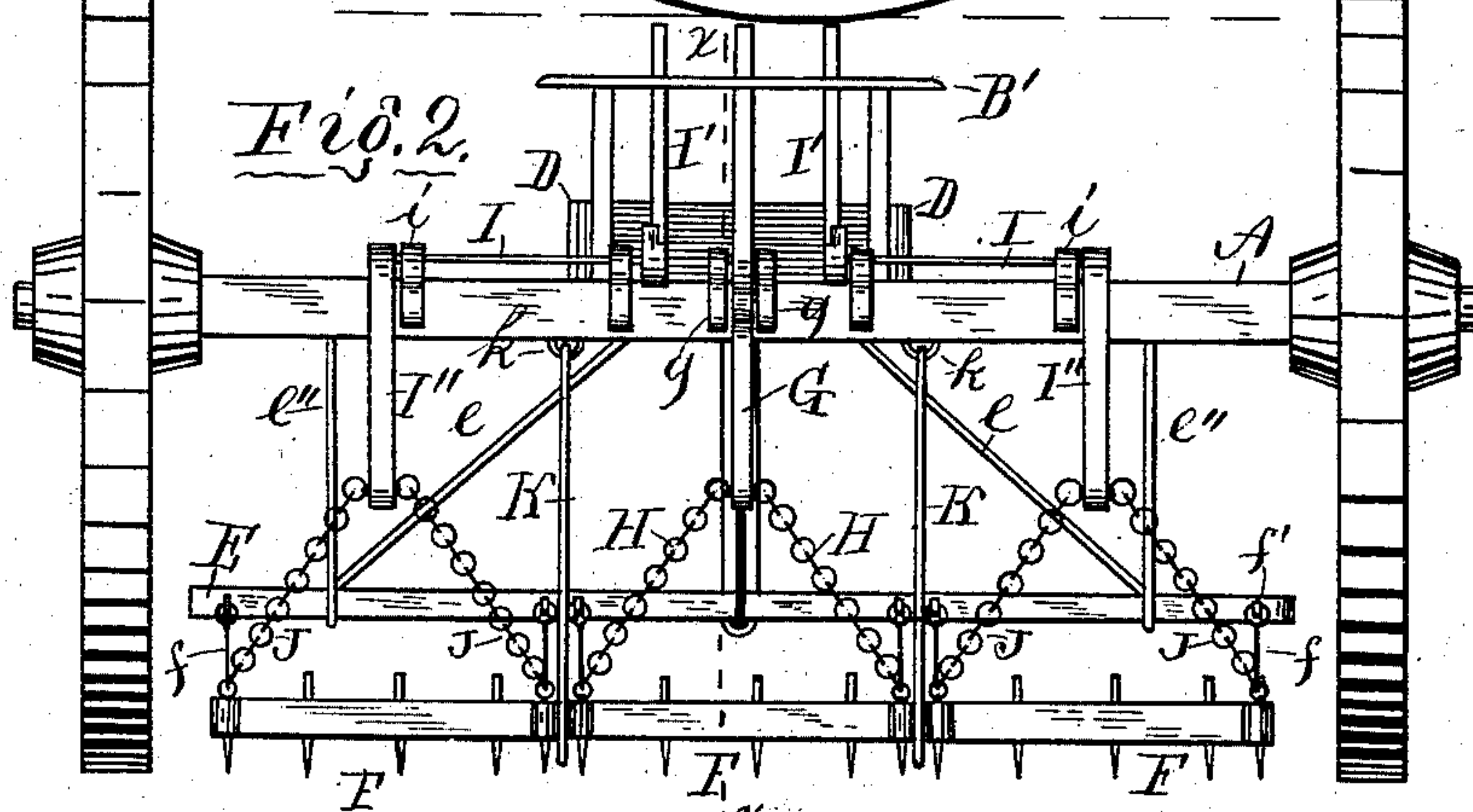
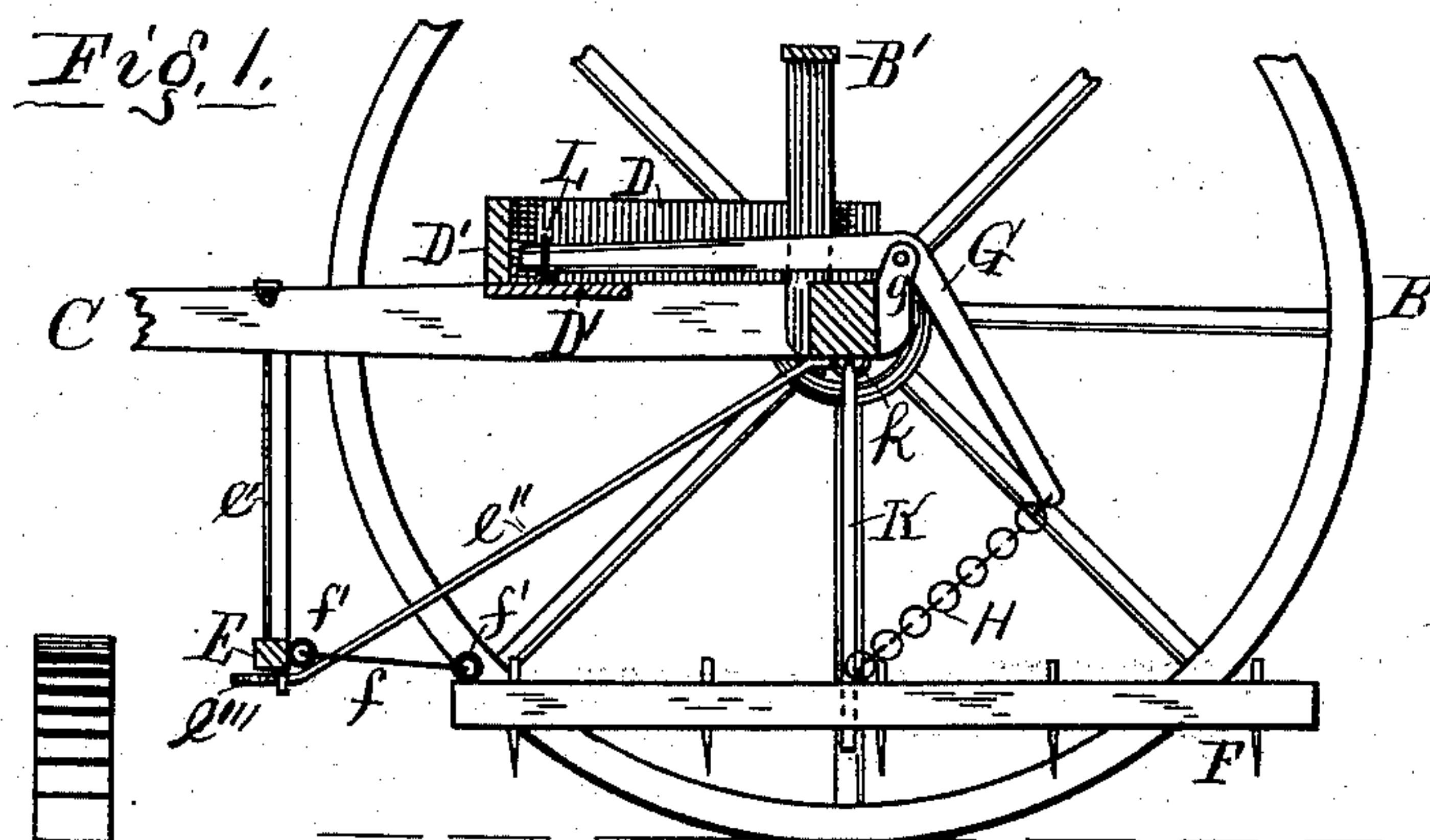


(No Model.)

J. S. CLEVELAND.
SULKY HARROW.

No. 282,271.

Patented July 31, 1883.



Witnesses:
L. R. Richards
P. D. Dunn

Inventor:
John S. Cleveland,
By W. T. B. Richards,
his atty.

UNITED STATES PATENT OFFICE.

JOHN S. CLEVELAND, OF NEPONSET, ILLINOIS.

SULKY-HARROW.

SPECIFICATION forming part of Letters Patent No. 282,271, dated July 31, 1883.

Application filed July 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. CLEVELAND, a citizen of the United States, residing at Neponset, in the county of Bureau and State of Illinois, have invented certain new and useful Improvements in Sulky-Harrows; 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.

Figure 1 is a sectional elevation in the line *xx* in Fig. 2. Fig. 2 is a rear-elevation. Fig. 3 is a top plan.

This invention relates to sulky-harrows; and it consists in constructions and combinations hereinafter described, and set forth in the claim hereto annexed.

Referring to the drawings by letters, the same letter indicating the same part in the different figures, letter A represents an axle supported on wheels B B, B' a driver's seat mounted on the axle, and C a tongue or guide-pole connected with the axle and braced by bars D D'. The foregoing parts described by letters are parts of an ordinary sulky for harrows.

E is a bar located some distance below the tongue C and transversely to the machine, and connected with the tongue by braces *e e'* and with the axle by braces *e''*.

F F F are harrows of oblong rectangular forms, and each connected to the bar E by links *f* and eyes *f'*.

G is an elbow-lever journaled at its bend to standards *g*, which project from the rear side and mid-length of the axle A. The upper end of the lever G extends forward beneath the driver's seat, and chains H extend from the rear end, one to each side of the central harrow.

I I are shafts journaled in standards *i* to the rear side of the axle, and each provided at its end next the lever G with a lever-handle, I', which passes forward beneath the driver's seat, similar to and close to the lever G. The shafts

I have each at their outer end an arm, I'', from which chains J extend to their respective harrows, similar to the chains H.

K K are rods having eyes at their upper ends, which interlock with eyes *k* on the axle A, and permit the rods K to swing sidewise and lengthwise of the machine. The rods K are located so that one hangs between each outer harrow and the central harrow. The central brace, *e''*, extends forward of the bar E, and has an eye, *e'''*, on its forward end, by which the draft-animals draw the machine.

L are staples or catches hinged to the brace or board D', so that they may be turned down forward to release the levers G I' and upward to hold them in the evident manner. The levers G I' are located close to the driver, so that he can raise and lower all or either of the harrows, as required. The chains H and J are connected to the harrows a short distance in front of their centers, so that their forward ends may be raised first to facilitate passing over rubbish. When the levers G I' are depressed to the board D', the harrows are elevated clear of the ground, and may be thus held by turning the catches L backward. The pendent hinged rods K will swing with the harrows and not interfere with their movements, and will prevent either harrow being thrown onto the adjacent harrow when elevated by accident or by design.

What I claim as new is—

In a sulky-harrow, the combination, with the harrows F F, hinged to the bar E, the bent lever G, chains H, levers I I' I'', and chains J, of the pendent swinging rods K K, hinged to the axle A and located between the harrow-sections, as described, all constructed and adapted to operate substantially as set forth.

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

JOHN S. CLEVELAND.

Witnesses:

SAML. N. GROSE,
P. R. RICHARDS.