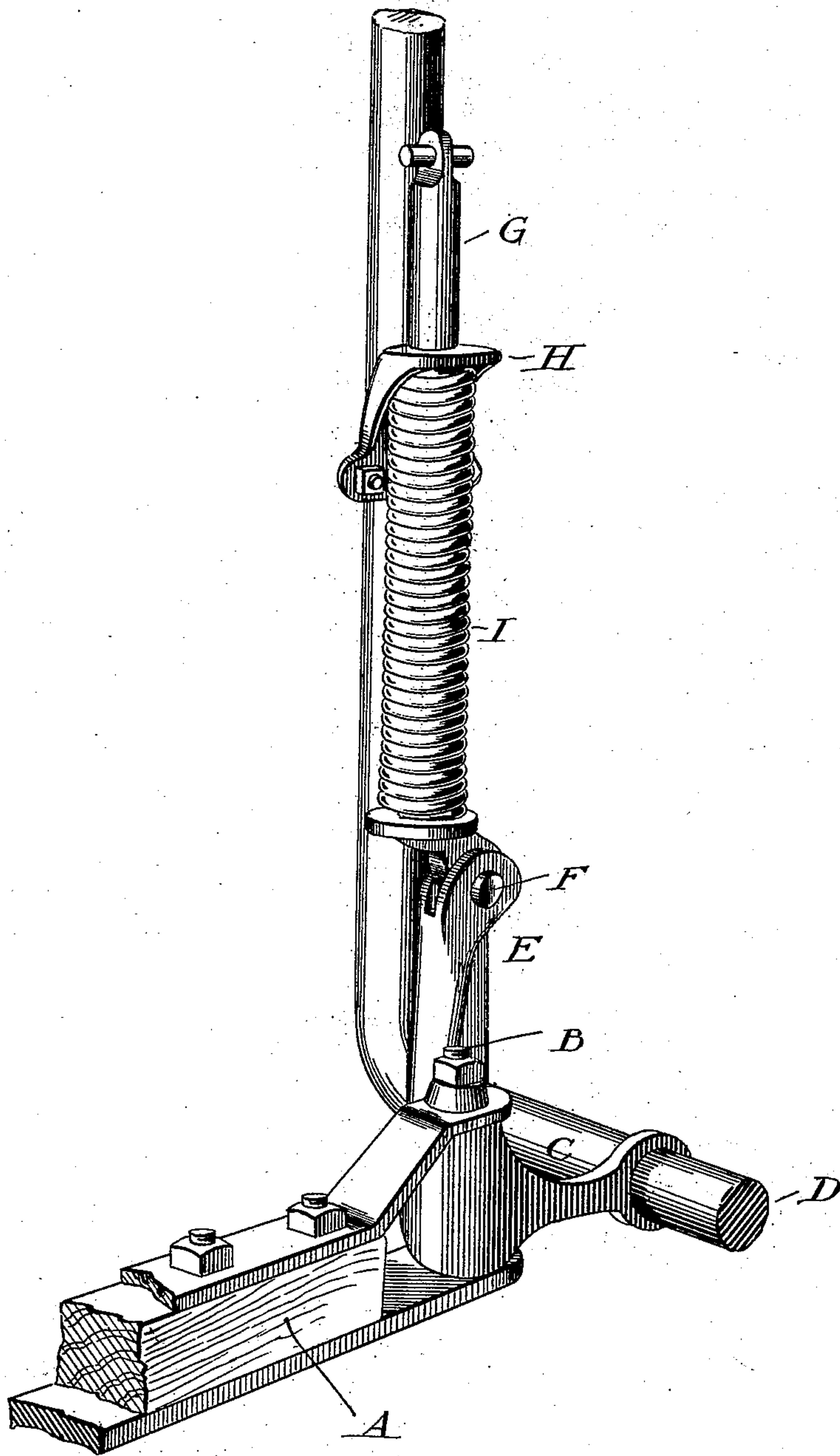


(No Model.)

E. EINFELDT.
WHEEL CULTIVATOR.

No. 509,024.

Patented Nov. 21, 1893.



Witnesses:
Fabius J. Elmore
J. M. Copenhaver.

Inventor:
Emil Einfeldt
By P. Y. Dodge
Atty.

UNITED STATES PATENT OFFICE.

EMIL EINFELDT, OF DAVENPORT, IOWA.

WHEEL-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 509,024, dated November 21, 1893.

Application filed March 17, 1893. Serial No. 466,514. (No model.)

To all whom it may concern:

Be it known that I, EMIL EINFELDT, of Davenport, county of Scott, and State of Iowa, have invented a new and useful Improvement in Wheel-Cultivators, of which the following is a specification.

This invention relates to that class of wheeled cultivators in which the pipe box or coupling which connects the forward end of the shovel carrying beam to the axle or frame is provided with an upright arm jointed to an uprising rod which slides through a guide at its top and which is encircled by a spiral spring exerting a downward pressure so that when the beam is lifted at the rear end the spring connection will tend to raise it and to relieve the operator of a portion of the weight. Heretofore the spring carrying rod has been made straight. When in this form its use is attended with certain disadvantages which will I find be entirely overcome by giving the lower end of the rod a forward curvature to the point at which it is pivoted to the arm of the coupling.

The drawing represents in perspective the forward end of the beam or drag bar or portion of the frame to which it is jointed and the spring connections in accordance with my invention.

A represents the forward end of the beam or drag bar connected by a vertical pivot B to arms on the rear side of a pipe box or sleeve C which loosely encircles the axle D, projecting in one side of the arch or main frame. The box C is provided with an upright arm E cast thereon or fixed rigidly thereto. The upper end of this arm is connected by a horizontal pivot pin F, to the lower end of a rod G, which slides at its upper end through a guide H on the frame. This rod is encircled by a strong spiral spring I, bearing at the upper end against the guide H and at the lower end against the collar on the rod. The rod, instead of being made straight as usual is curved forward at its lower end to receive the pivot, the effect of this being to incline the body of the rod backward and throw the spring behind the arm E.

When the machine is in operation and the rear end of the beam lowered, the spring sustains all or part of the weight of the gangs,

and has practically no depressing effect thereon. As the beam is lifted at the rear end to raise the shovels from the soil, the pivot F is thrown forward so that the rod actuated by the spring, tends to force the arm farther forward and thereby raise or assist in raising the rear end of the beam.

In practice the forward curvature of the rod is found to be attended with many advantages,—the principal one of which is that it permits the other parts to be so proportioned and arranged in relation to each other that there is practically no depressing influence exerted on the beam when it is down in operative position. Further it permits of a much wider range of motion of the beams up and down while in operation, without the springs exerting any depressing effect, the beams being practically suspended at the different positions which they assume while in use, while on the other hand, with the straight spring rod, there is less range, and practically but one point at which the beams are suspended. As the beams go lower, there is an objectionable depressing action of the springs.

Having thus described my invention, I claim—

1. In a cultivator the combination with the axle of the beam and the arm E, connected therewith, the rod G curved forward at its lower end and jointed to the arm, the guide for said rod and the spring surrounding the rod, the joint between the arm and rod being in front of the line of action of the spring.

2. As an improvement in cultivators, the combination with the axle of the beam jointed to swing forward and downward, the arm E connected thereto, the rod G jointed to said arm and extending through a guide on the axle frame, the spiral spring surrounding the rod between the jointed end and the guide, the said rod having the portion which carries the spring thrown rearward out of line with the arm.

In testimony whereof I hereunto set my hand, this 4th day of February, 1893, in the presence of two attesting witnesses.

EMIL EINFELDT.

Witnesses:

MAY L. DODGE,
NATH FRENCH.