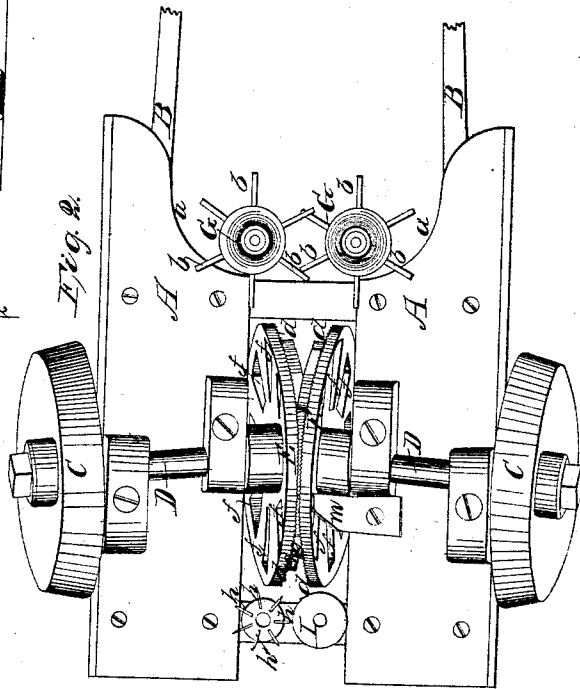
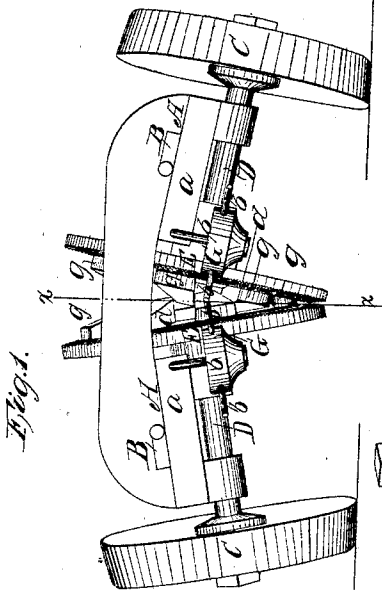
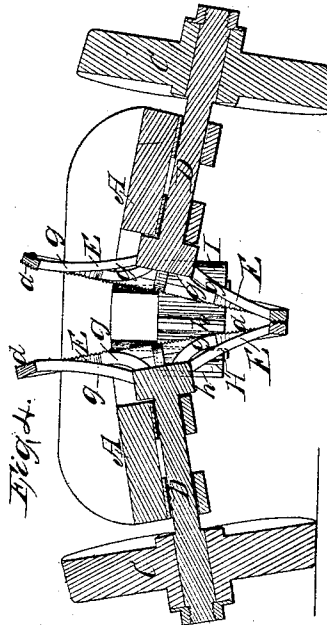
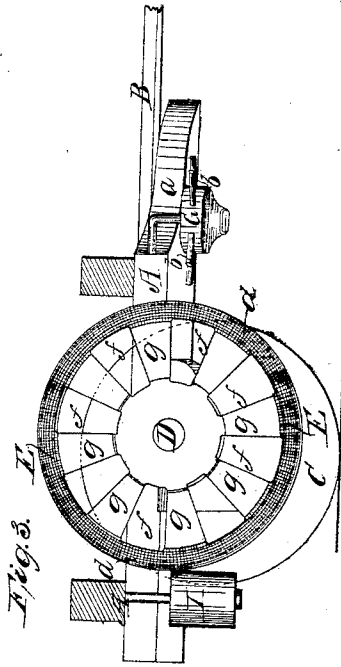


S. BEERS.

MACHINE FOR PULLING AND CUTTING COTTON STALKS, &c.

No. 26,828.

Patented Jan. 17, 1860.



Witnesses:
R. L. Cogswell.
C. W. Smith.

Smith Beers, Inventor:
Prof. his attorney.
J. L. Brown.

UNITED STATES PATENT OFFICE.

SMITH BEERS, OF NAUGATUCK, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR PULLING AND CUTTING COTTON-STALKS.

Specification forming part of Letters Patent No. 26,828, dated January 17, 1860.

To all whom it may concern:

Be it known that I, SMITH BEERS, of Naugatuck, in the county of New Haven and State of Connecticut, have invented a new and Improved Machine for Pulling and Cutting Cotton-Stalks, and other Stalks, Roots, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a front elevation of the machine; Fig. 2, a plan of the under side thereof; Fig. 3, a vertical section thereof in the plane indicated by the line *x x*, Fig. 1; Fig. 4, a transverse section in a plane cutting the center of the wheel-axes and exhibiting a modification of the construction of the pulling-wheels.

Like letters designate corresponding parts in all the figures.

A frame, *A*, of suitable construction to receive the other parts of the machine is provided, and is mounted on (generally only) two sustaining and driving wheels, *C C*, of about four feet in diameter, more or less, secured to separate axles or shafts *D D*. On the inner adjacent ends of the axles are respectively secured the pulling-wheels *E E*. These pulling-wheels are of about the same diameter as the driving-wheels, and the axles *D D* are inclined upward toward the center of the machine, so as to bring the lower edges of the pulling-wheels, say, about eight inches higher than the lower edges of the driving-wheels. This inclination of the axles gives to the pulling-wheels a corresponding inclination to each other, so that while their rims at the lower edges nearly touch each other at their upper edges they are considerably separated, as shown in the drawings. The raising of the pulling-wheels above the ground also naturally adapts them to pass over the hills or ridges around the stalks, while the driving-wheels move in the furrows between the ridges; but in this respect the pulling-wheels are made of a suitable diameter in relation to the driving-wheels to bring their lower edges the proper distance above the ground to suit the purposes intended, while the inclination of the pulling-wheels in relation to each other, as above specified, is required for their proper operation. The inner ends of the axles also incline forward somewhat, (properly about half as

much as they incline upward,) so that the place of contact or nearest approach of the wheels shall be somewhat farther back and higher than the lowest points of their peripheries, in order that their action in pulling may be exerted to the best advantage. The inner faces of the rims *d d* of these wheels are provided with suitable teeth or projections to enable them to hold the stalks without slipping. This may be conveniently effected by making concentric grooves and cross-radial notches therein, as shown in the drawings. The rims fit together at their nearest point of approach, and are separated only just far enough there to admit the compressed stalks between them. If the stalks are dry enough, or of a nature to be readily broken and crumbled, the pulling-wheels themselves may cut or reduce them to the proper fineness in the act of pulling them. For this purpose the spokes *g g* of each wheel project inward from its face and match into the intermediate spaces, *ff*, of the other wheel in the manner of the cogs of cog-wheels, and these projecting spokes have sufficiently sharp edges and fit sufficiently close in the spaces *ff* to force in the stalks and cut or break them in pieces. To trim off and clear away such pieces or bunches of stalks as may project through the outside of the wheels knives may be secured close to the outer faces of the wheels, as shown at *m* in Fig. 2; but if the stalks are green, wet, or of such a nature as not to be cut or broken in this way readily the wheels may have ordinary spokes and retreat from each other by making the inner faces of the wheels somewhat concave, as in Fig. 4, so that the tops of the stalks may pass back readily through the intervening space in pulling. In this case additional cutters or choppers may be employed. A method of arranging these is represented in the drawings, there being a vertical cylinder, *H*, at the rear end of the machine, provided with knives *h h*, working against a chop-roller, *I*, placed opposite, as shown. The knife cylinder may be horizontal instead of vertical, as in the drawings, and be driven by banding or gearing from one of the axles *D D*. The stalks are gathered and directed to the pulling-wheels, first, by the concave outline of the front of the frame or platform between the shafts *B B*, as shown at *a a*, and beside this construction by

the employment of a pair or two of wheels or rollers, G G, on vertical axes and provided with radial gathering-arms *b b*, substantially as shown in the drawings.

The machine is simply drawn along by horses traveling outside of the shafts or tongues B B centrally over the rows of stalks, which are first gathered between the arms of the rollers G G, and directed thereby between the front separated edges of the pulling-wheels E E, which in turning downward and backward approach close together, and thereby grip and securely hold the stalks, and then, in turning backward still farther, and ascending at the same time, pull the stalks up out of the ground, and a little afterward separate and let the stalks fall back from the machine, either cut and broken in pieces by the pulling-wheels themselves, when they are provided with intermatching spokes, or passed in a whole condition back to the chopping-knives *h h* to reduce them to the proper fineness for plowing into the ground.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The construction, arrangement, and operation of the pulling-wheels E E, whether provided with the intermatching spokes *g g*, for cutting and crushing, as well as pulling, or simply arranged for pulling, and either with or without the auxiliary cutting and clearing knives, substantially in the manner and for the purposes hereinbefore specified.

2. The gathering wheels or rollers G G, constructed and operating as described, in combination with the pulling-wheels E E.

In witness that the above is a true specification of my improved machine for pulling and cutting cotton-stalks and other stalks and roots I hereunto set my hand this 28th day of November, 1859.

SMITH BEERS.

Witnesses:

W. C. BRISTOL,
NELSON FULLER.