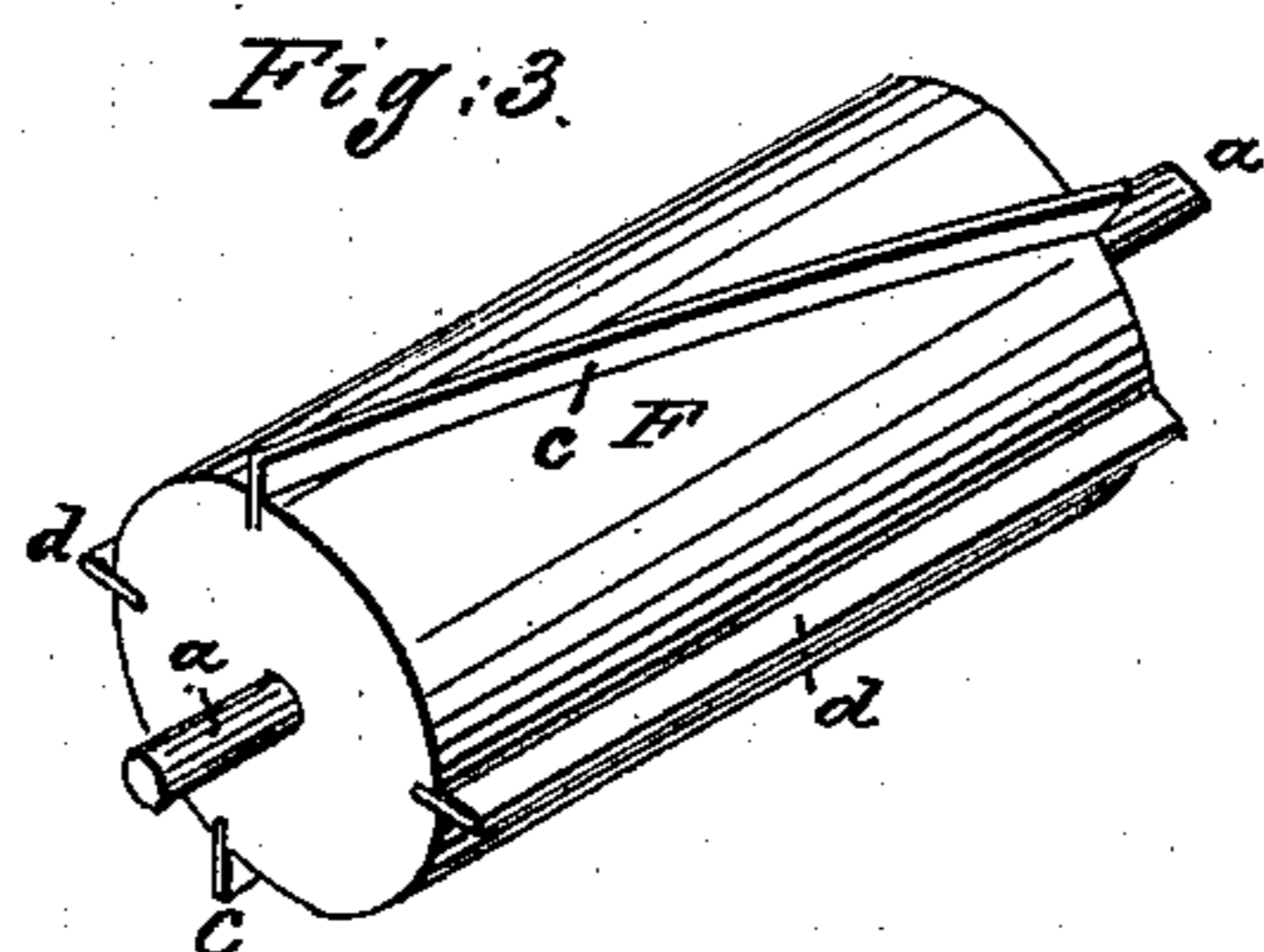
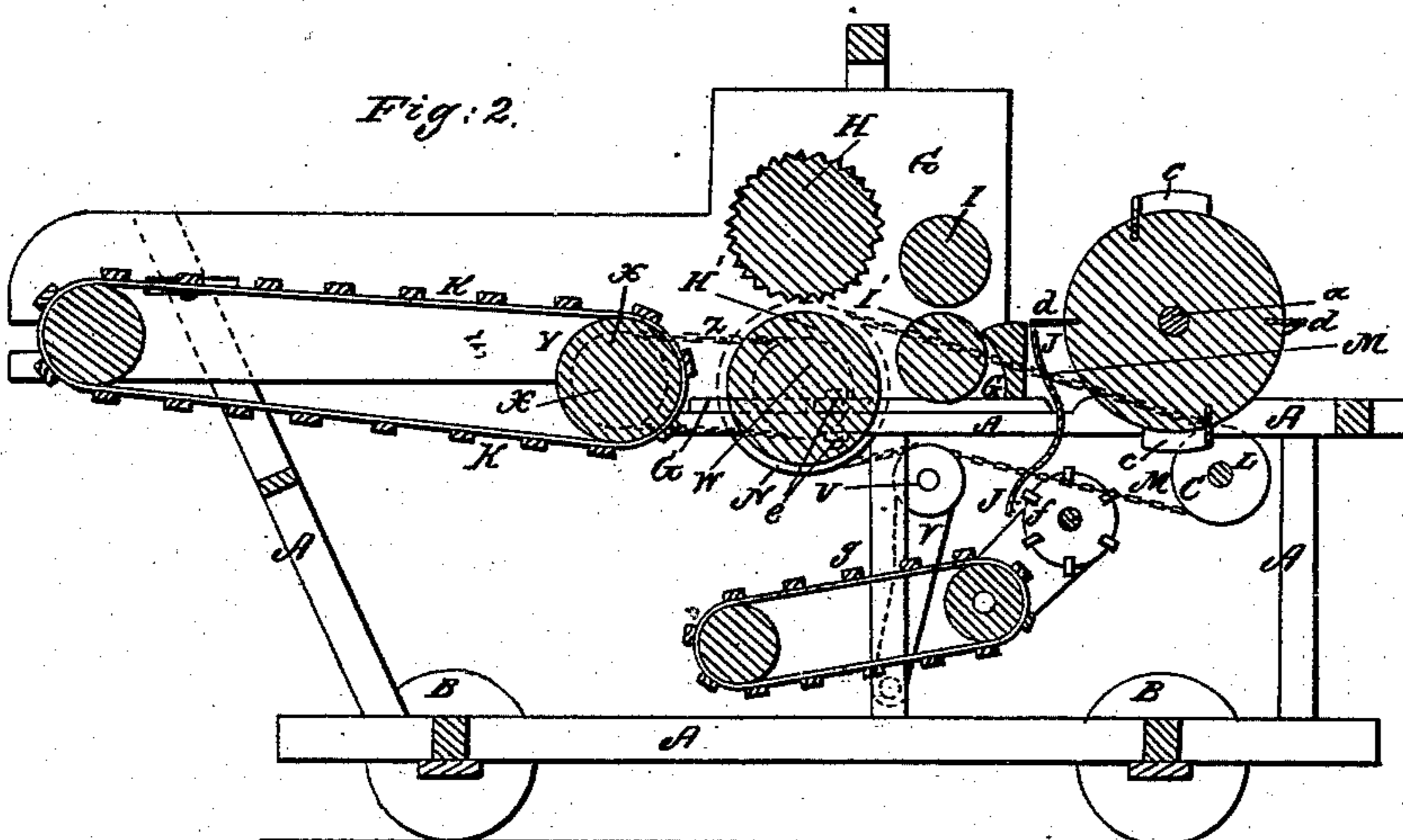
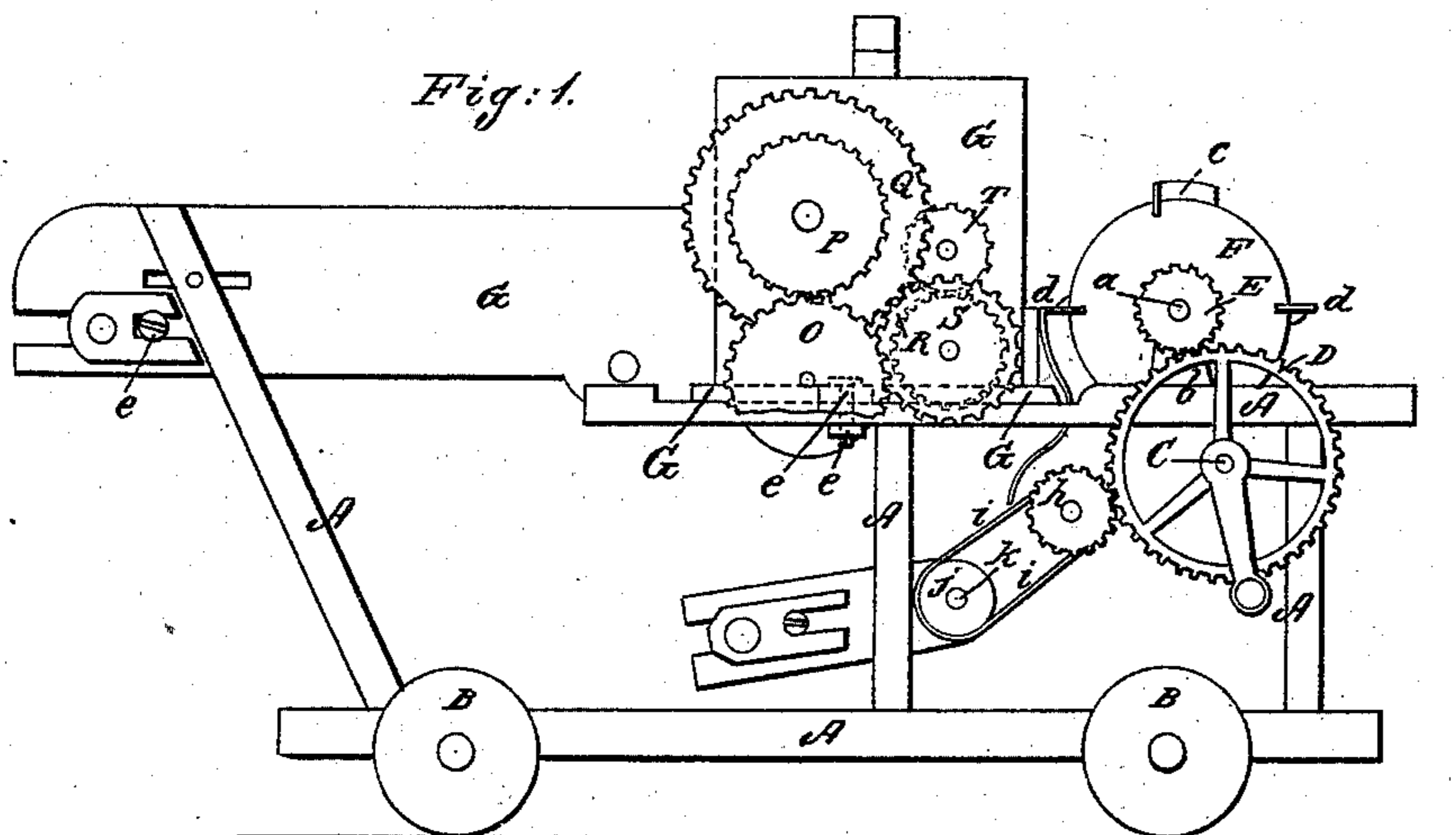


S. H. LITTLE.

Hemp Brake.

No. 21,264.

Patented Aug. 24, 1858.



UNITED STATES PATENT OFFICE.

SAMUEL H. LITTLE, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN MACHINES FOR BREAKING HEMP.

Specification forming part of Letters Patent No. 21,264, dated August 24, 1858.

To all whom it may concern:

Be it known that I, SAMUEL H. LITTLE, of the city and county of St. Louis, and State of Missouri, have invented certain new and useful Improvements in Machines for Breaking Hemp; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a perspective view of the machine. Fig. 2 represents a longitudinal vertical section through the same.

Similar letters of reference, where they occur in the separate figures, denote like parts of the machine in all of them.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents the main frame of the machine, which, for convenient transportation from place to place or from field to field, may be mounted on wheels B B B B. In bearings or boxes in this main frame is hung a shaft, C, to which motion may be communicated from any first moving power through a crank or endless belt. On one end of this shaft C there is a cog-wheel, D, which drives a pinion, E, that is arranged on the shaft or journal *a* of the beating-cylinder F, said journals rotating in pillow-block boxes *b*, resting on the main frame. The cylinder F is furnished with a series of beaters, *c c c*, set spirally or obliquely on its periphery and between each pair of beaters so arranged there are clearers *d d d*, made of leather or other similar flexible material, set straight across said cylinder.

Upon the main frame A is placed a second frame, G, which latter is adjustable on the former by means of set-screws *e*, passing through slots in each. This second frame, G, supports the breaking-rollers H H', (which may both be grooved, though one is represented as plain,) the crushing-rollers I I', and the concave J, so that all these parts will retain their relative positions to each other when it becomes necessary to adjust the concave to the beating-cylinder. The endless feeding-apron K may also be hung to or made a part of the second frame, G, so that said apron shall always be in proper position for delivering the hemp to the pair of breaking-rollers H H'.

The breaking and crushing rollers may be driven in the following manner: On the end of the shaft C there is a chain-pulley, L, around which a chain, M, passes, and thence around another chain-pulley, N, on the end of the shaft or journal of the lower one of the pair of breaking-rollers, thus rotating said lower roller. On the opposite end of said lower roll, H', there is a gear-wheel, O, that meshes with a similar gear-wheel, P, on the journal of the upper roller, H, of the pair. There is also on this last-mentioned journal a gear-wheel, Q, that takes into a pinion, R, on the shaft of the lower one, I', of the pair of crushing-rollers, and thus rotates it, and through the gears S T the upper crushing-roll is rotated. When the two breaking-rollers are both grooved, one will turn the other by the meshing of their ribs and grooves, and consequently much of the above-described gearing may be dispensed with.

U is a pressure-pulley hung on an arm, V, that is made adjustable, so that when the second frame is moved to or from the main beating cylinder the slack of the chain may be taken up properly. A chain-pulley, W, is also placed on the journal of the lower one of the pair of breaking-rolls near the first-described one, N, and around said pulley W, and around a similar one, X, on the journal of one of the rollers, Y, that carries the endless feeding-apron K, passes a chain, Z, to give motion to said apron K. The concave G has two curves, 1 2, in it, the upper one, 1, for holding the hemp up to the beaters and clearers *c* and *d* on the main beating-cylinder F. After the hemp has passed beyond the action of the beaters and clearers *c d*, it is then acted upon by a reel, *f*, which carries it against the curve 2 in said concave, which holds it up against the action of the reel, which completes the operation of cleaning the hemp, by knocking and blowing off all the remaining woody fiber not removed by the previous action of the machine. After the hemp passes the reel and its portion of the concave, it is received upon an endless carrying-apron, *g*, which takes it to a point or place where it can be readily removed. The reel *f* is driven from the gear-wheel D through the pinion *h* on its shaft, and the carrying or delivering apron is operated by a belt, *i*, passing around a pulley on the reel-shaft, and a pulley, *j*, upon the journal *k* of one of its rollers,

There may be a chute underneath the main beating-cylinder for receiving and conducting away the material knocked off the hemp by its action.

Having thus fully described the nature and object of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. In combination with the main beating-cylinder F, rotating in a fixed vertical plane on the permanent frame of the machine, the arranging of the feeding-apron, breaking and crushing rollers, and concave in a second frame adjustable on the first one, so that when it

becomes necessary to adjust the concave to the beater-cylinder the parts preceding the concave in the operation shall always maintain the same relative positions to it and to each other, as set forth.

2. The arrangement and operation of the beater-cylinder F, the concave J, the reel *f*, and carrying-apron *g*, all as described and represented, and for the purpose specified.

SAML. H. LITTLE.

Witnesses:

JAMES SWENEY,
N. RANKIN.