

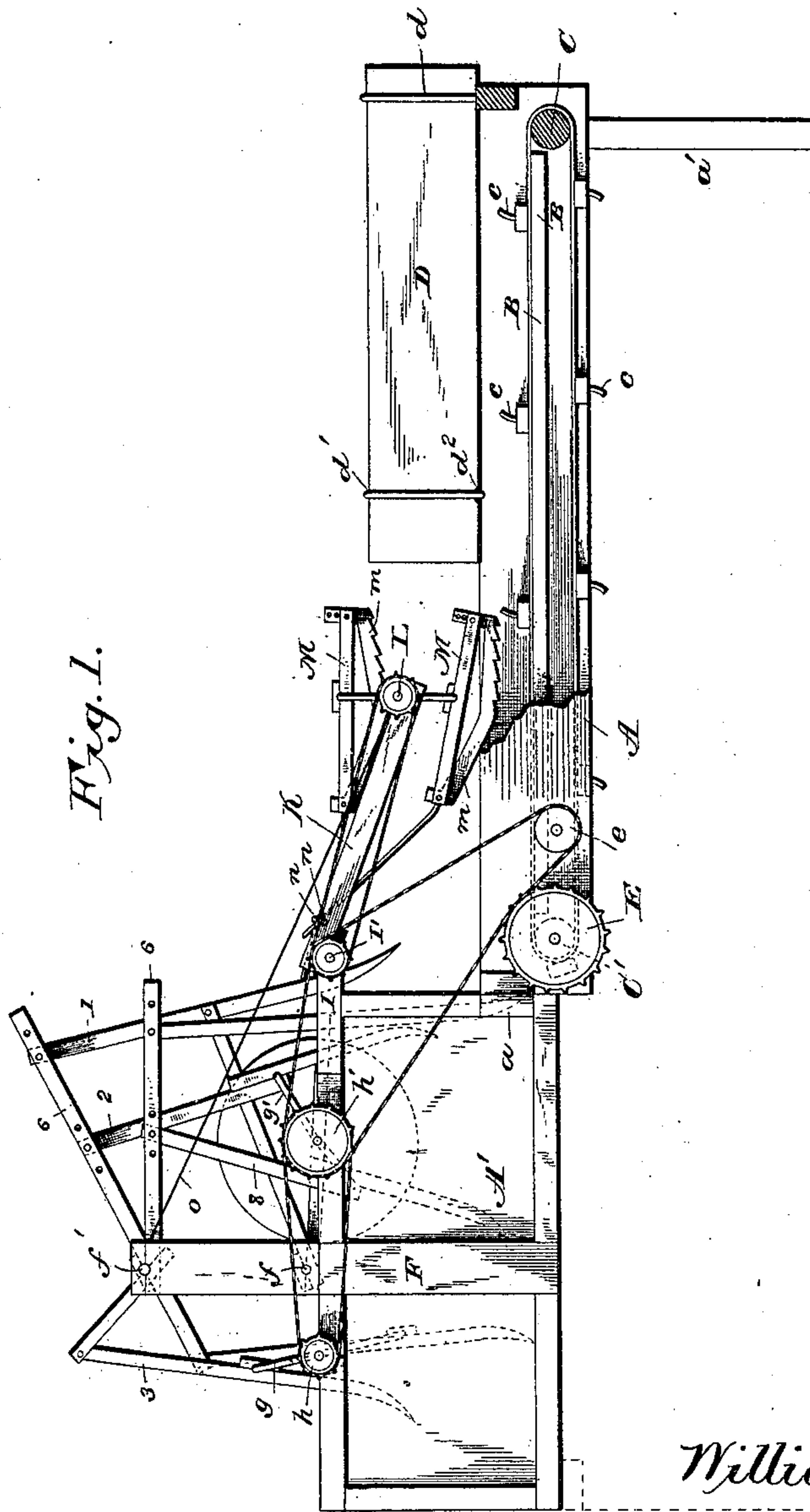
(No Model.)

2 Sheets—Sheet 1.

W. CLOSE.
BAND CUTTER AND FEEDER.

No. 429,014.

Patented May 27, 1890.



William Close.

Witnesses

L. S. Elliott.
W. Johnson.

Inventor

by

Attorney

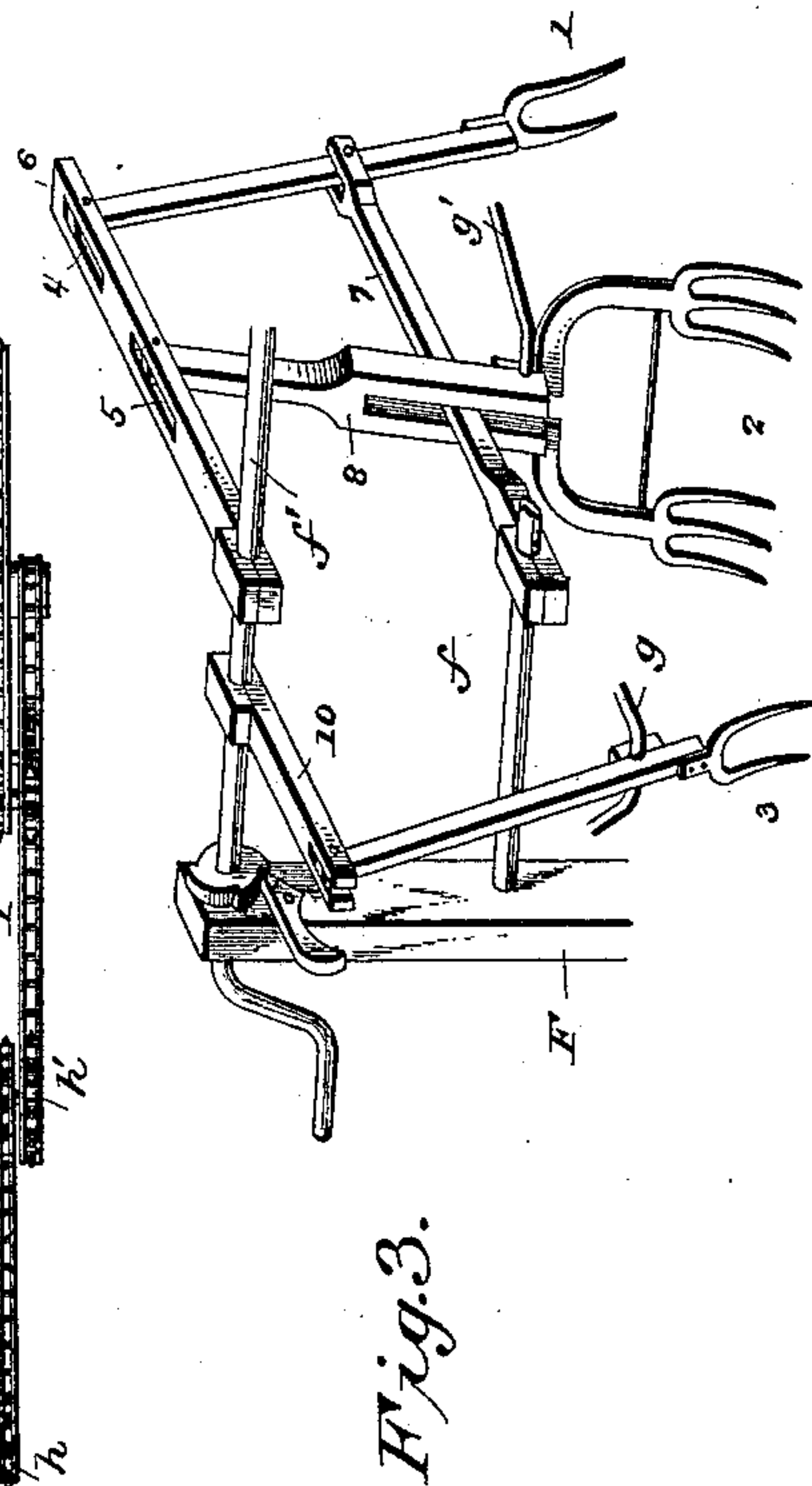
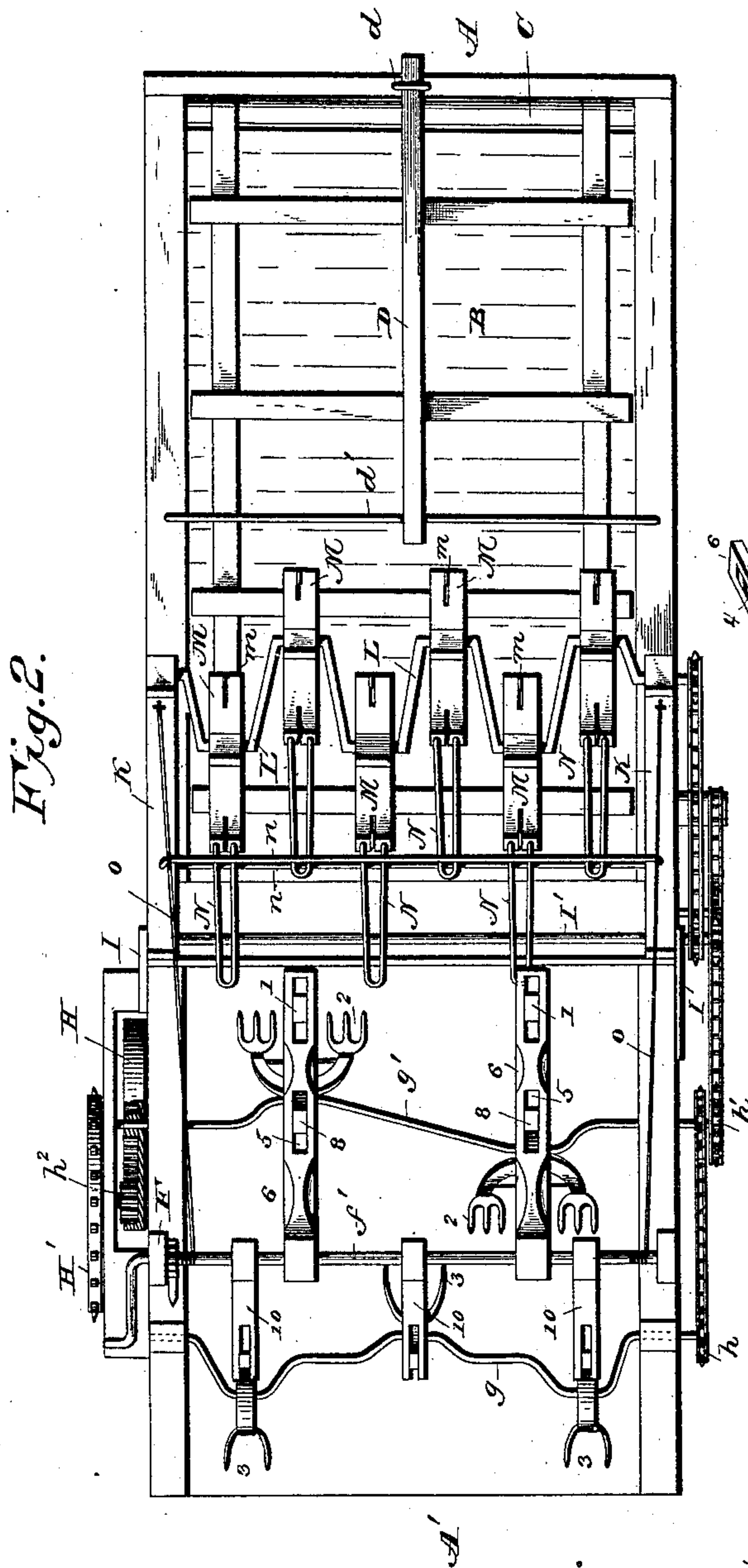
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UNITED STATES PATENT OFFICE.

WILLIAM CLOSE, OF LEONA, KANSAS.

BAND-CUTTER AND FEEDER.

SPECIFICATION forming part of Letters Patent No. 429,014, dated May 27, 1890.

Application filed March 12, 1890. Serial No. 343,673. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CLOSE, a citizen of the United States of America, residing at Leona, in the county of Doniphan and State of Kansas, have invented certain new and useful Improvements in Band-Cutters and Feeders; 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, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in band-cutters and feeders for thrashing-machines, the object of the invention being to provide an improved device for cutting the bands of sheaves of straw and feeding the same to the cylinder of a thrashing-machine.

In the accompanying drawings, Figure 1 is a side view, partly in section, of a band-cutter and feeder for thrashing-machines. Fig. 2 is a plan view. Fig. 3 is a detail perspective view.

A refers to one of the frames of the device, which may be detached from the frame A', and when in use these frames A and A' are rigidly connected to each other by bolts or screws which pass through the plates *a*, used for connecting the frames together. The frame A when in use is supported in a horizontal position by the legs *a'*, while the end of the frame A' rests upon and is secured to the frame of the thrashing-machine adjacent to the cylinder thereof. The frame A is made up of side pieces rigidly connected to each other by suitable transverse bars or braces and a rigid platform B. This frame, near each end, is provided with transverse shafts C and C', the upper edges of which are on a line with the upper edge of the platform B, and around these shafts C and C' pass belts, to which are secured transverse strips having teeth *c*, which incline in an opposite direction from the travel of said belt, so that they will not only carry the straw, but hold the same from a forward movement when the band-cutters operate, said band-cutters moving faster than the belt. These inclined teeth

also free themselves from the straw as it passes off the belt upon the platform of the frame A'. The frame A at one end of the same is provided with uprights *d* and a rigid frame *d'*, having a downwardly-extended looped portion adapted to support and hold in a vertical position a partition-board D, so that the sheaves can be fed upon the endless belt on each side of the frame. The teeth *c* are arranged in parallel series, so that the band-cutters will operate between them. One side of the frame is provided with an idle-pulley *e*, while the shaft C' has a sprocket-wheel E secured to the end thereof, over which the drive-chain passes. The partition-board D has at one end a notch or recess *d²*, and can be readily removed by raising the front end of the same and moving it forward, as in some instances it may be desired to feed the sheaves upon the endless carrier-belt from only one side, and when this is the case the partition-board will serve no useful purpose.

The frame A' is provided on each side with vertical standards F F, in which are journaled straight shafts *f* and *f'*, said shafts passing through arms attached to the feeding-forks, as will be hereinafter more fully set forth, and to the upper edge of the frame A' are journaled crank-shafts *g* and *g'*, which carry sprocket-wheels *h* and *h'*, over which passes the driving-chain. The end of the crank-shaft *g'*, on the opposite side from the sprocket-wheel *h'*, is provided with a wheel H with an internal gear, with which meshes a pinion *h²*, mounted on a stub-shaft which is supported by an open frame, the opposite end of said shaft carrying a sprocket-wheel H', over which a chain belt passes driven from one of the wheels of the thrashing-machine. It will thus be observed that the forks or feeders and cutters have a comparatively rapid movement, which tends to thoroughly separate the straw. The inner sides of the frame A' may be made up of sheet metal or lined with this material.

The frame A' on each side has projecting brackets I, within which is journaled a shaft I', which forms a pivotal bearing for the frame K, which carries the band-cutters. This frame K is preferably made up of a transverse strip adjacent to the shaft I' and side arms, and

at the ends of these side arms is journaled a transverse crank-shaft L, having four or more cranks, which are preferably oppositely disposed, and to the straight portions of this crank-shaft are journaled blocks M, each of which is provided with straight or looped projecting portions N, which pass between transverse bars *n n*, which permit a reciprocating as well as a pivotal movement of the blocks M and arms or loops N. To the under side of the blocks M are secured the cutters *m*, the lower faces of which are of the form shown in Fig. 1, the ends being bent upwardly. These cutters are pivotally secured to the blocks M adjacent to the ends of the bars N, while the upwardly-projecting portions opposite the cutters have a series of perforations, so that they can be properly adjusted by a securing and set pin which passes through the bifurcated end of the block M and through the upwardly-projecting portions of the cutters, as shown. The cutters M have a knife-edge at their rear portions, while the forward portions are provided with serrated edges. Thus the bands will be severed by the smooth portion of said cutters and separated by the serrated edges, which will also cut any of the strands which may remain unsevered after meeting the knife-edge of the cutters. A chain belt connects the sprocket-wheel on the end of the crank-shaft with the sprocket-wheel on the shaft I', and the outer sprocket-wheel on said shaft engages with the main driving-chain, as will be fully understood by reference to the drawings.

The upper shaft *f'* has one end bent, so as to form a crank-handle, and it is provided with a pawl and ratchet, and near the ends of this shaft, near the supports F F, are secured the ends of flexible connections *o o*, the opposite ends thereof being secured to the arms K, which carry the shaft L, and by means of this crank and cords the frame carrying the cutters can be adjusted, so that the free end of the same will be at the proper distance from the carrying-belt or platform B.

To the frame A' are secured three sets of feeding-forks 1, 2, and 3, the tines of the forks 1 being bent or curved toward the band-cutters, while the tines of the forks 2 and 3 are curved in an opposite direction. The forks 1 are pivotally attached at their upper ends within slots 4, formed in the bars 6, and near their central portions between the bifurcated end portions of bars 7, these bars 6 and 7 being loosely secured upon the transverse bars *f* and *f'*. Each bar 6 is provided with a slot 5, within which is adjustably pivoted the bifurcated shank 8, to the lower end of which are secured bent arms, carrying, preferably, three-tined forks 2. The lower end of this shank 8 is pivotally secured to the crank-shaft *g'*, so that as this crank-shaft is rotated or turned it will move the series of forks 2 forward, and during the movement of this crank-shaft the series of forks 1 will be lowered and remain

so while the forks 2 move forwardly, and then commence their upward movement, each series of forks 1 and 2 operating together. Thus the first series of forks 1 hold the straw, while the series 2 feed it forward, causing a thorough separation of the sheaf. The series of forks 3 are pivoted in the bifurcated ends of the bar 10, and the shanks of said forks are connected near their lower ends to the crank-shaft *g*, so that as the crank-shaft is rotated they will exert upon the straw a constant forward feed, which will deliver the straw to the beater of the thrashing-machine.

From the foregoing, and by reference to the accompanying drawings, a further description of the parts is deemed unnecessary, and it will be obvious that the construction of the parts may be varied from that shown in the drawings without departing from the spirit of my invention.

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

1. In combination in a band-cutter and feeder for thrashing-machines, an endless belt carrying a transverse series of inclined teeth *c* and reciprocating cutters, said cutters being adapted to move faster than the carrying-belt, so that the teeth will hold the sheaf while the band or bands thereof are being severed, substantially as shown and for the purpose set forth.

2. The combination, in a band-cutter and feeder for thrashing-machines, of an endless belt carrying a transverse series of inclined teeth *c*, and reciprocating cutters moving longitudinally of the belt, but faster than the same, supports *d d'*, and vertical partition-board removably sustained thereby, substantially as set forth.

3. The combination, in a band-cutter and feeder for thrashing-machines, of a carrying-belt having inclined teeth *c*, a frame pivotally secured above said carrying-belt and provided with a crank-shaft, upon which are mounted cutters, said cutters having guide-arms and reciprocated faster than the carrying-belt, but moving longitudinally of the same, substantially as shown, and for the purpose set forth.

4. The combination, in a band-cutter and feeder for thrashing-machines, of a series of cutting-blades mounted above the main feed-belt, said blades being adjustably secured to carrying-blocks M, which are pivotally secured to a crank-shaft, and bars N, which pass through guides or supports, the carrying-frames of the cutters being adjustable with respect to the feed-belt, substantially as set forth.

5. The combination, in a band-cutter and feeder for thrashing-machines, of a series of cutting-blades provided with curved cutting portions having a portion with knife-edges and the remaining portion with serrated edges, said cutting-blades being adjustably mounted upon blocks, said blocks being con-

5 nected to a crank-shaft, bars N, passing through guides, the crank-shaft being mounted upon a pivoted frame above the feed-belt, and cords o o, for adjusting the frame, substantially as set forth.

6. The combination, in a band-cutter and feeder for thrashing-machines, of a series of feeding-forks 1, 2, and 3, the series 2 and 3 being connected to crank-shafts, while the series 1 are connected by pivots to bars, the upper bar 6 being pivoted to the shanks of the series 2 of the forks, substantially as set forth.

7. In combination with the transverse bars *f* and *f'*, bars 6 and 7, pivoted thereto, a series of forks 2, pivoted at their upper ends to the bars 6 and below the bar 7 to a crank-shaft, and forks 1, pivotally connected to the ends of the bars 6 and 7, whereby the forks 1 are lowered before the forks 2 and remain lowered while said forks complete their forward movement, substantially as set forth.

8. The combination of bars 6 and 7, pivotally secured to supports, forked shanks pivotally secured to the bar 6, the bar 7 being disconnected from the shanks of the forks 2, and a crank-shaft connected with the forks 2, said cranks operating said forks, and through the shanks of said forks raising and lowering the bar 6, so as to elevate and depress the shanks of the forks 1, substantially as set forth.

9. In combination with the fixed pivots, a

bar having slots 4 and 5, a bar 7 of less length located beneath the same, a forked shank pivotally attached to the ends of the bars 6 and 7, and a shank of a fork pivotally secured about centrally to the bar 6, said shank below the bar 7 being connected to a crank-shaft, whereby the shank of the forks 1 will be raised and lowered as the crank-shaft is turned, the parts being organized so that the forks 1 will remain lowered during the forward movement of the forks 2, substantially as set forth.

10. The combination, in a band-cutter and feeder for thrashing-machines, of a carrying-belt having teeth extending in a direction opposite to the travel of said belt, a series of reciprocating cutters mounted on a crank-shaft above said belt, feeding-forks 1 and 2, pivotally supported and operated by a crank-shaft *g'*, the tines of the first series of forks being curved toward the feeding-belt, the tines of the series of forks 2 being curved opposite thereto, and a series of forks 3, mounted on the crank-shaft *g*, so as to operate alternately with the series 2, the parts being organized substantially as shown, and for the purpose set forth.

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

WILLIAM CLOSE.

Witnesses:

B. A. SEAVER,
FRANK LUCAS.