(No Model.) 2 Sheets—Sheet 1.

J. B. SYKES & T. A. FOUST.

FEED CUTTER.

No. 421,632. Patented Feb. 18, 1890.

Fig. 1.

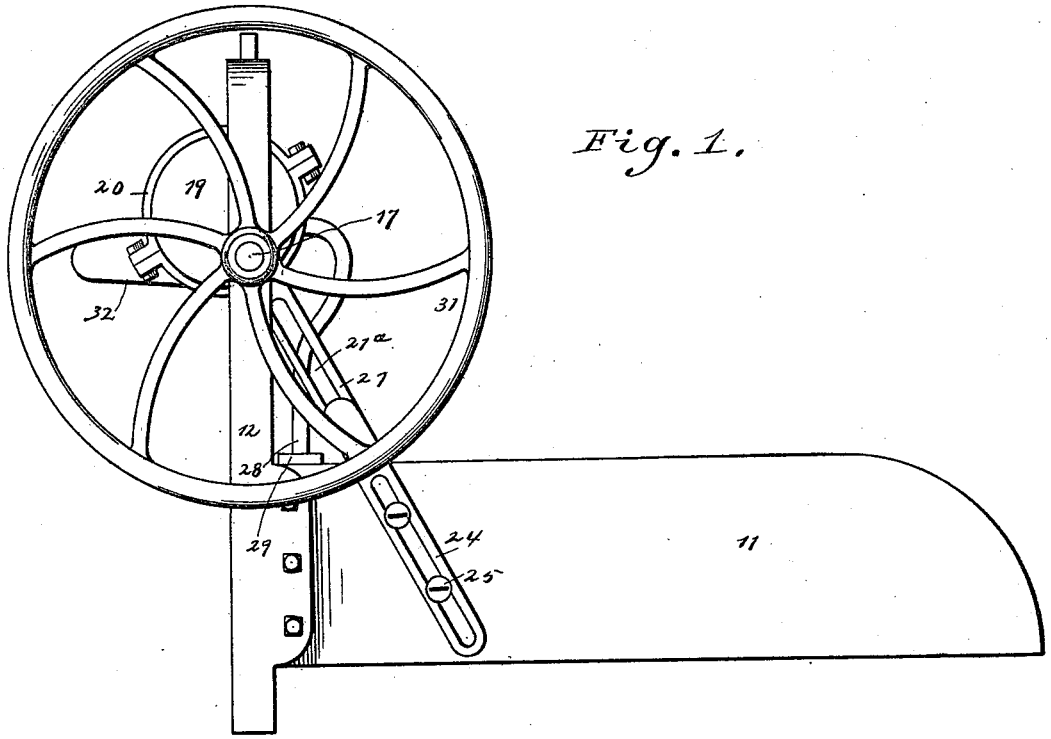
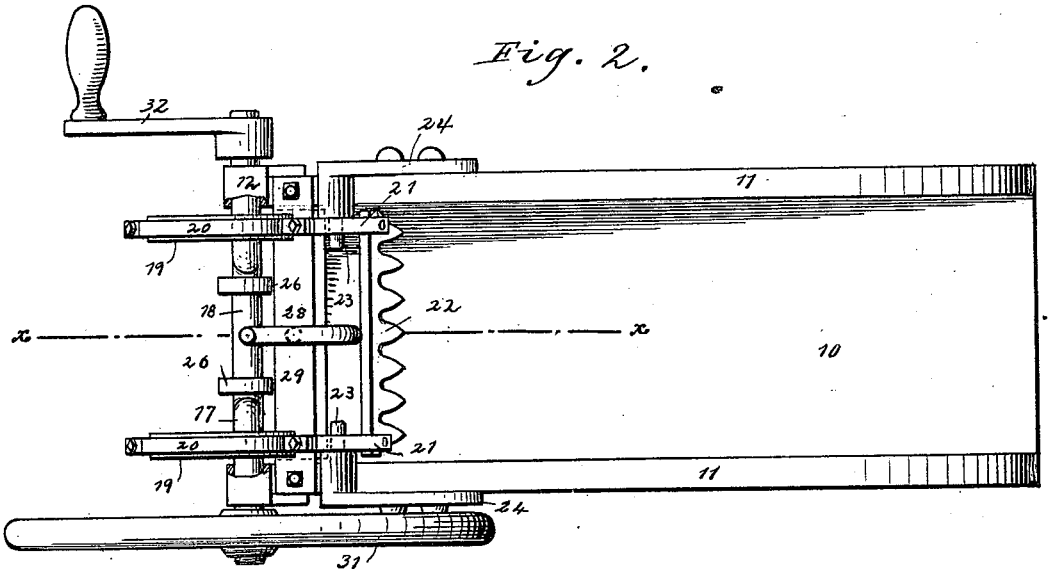


Fig. 2.



WITNESSES:
Donnell & Reimer
C. Sedgwick

INVENTOR:
J. B. Sykes
T. A. Foust
BY Munn & Co
ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

J. B. SYKES & T. A. FOUST.

FEED CUTTER.

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Fig. 3.

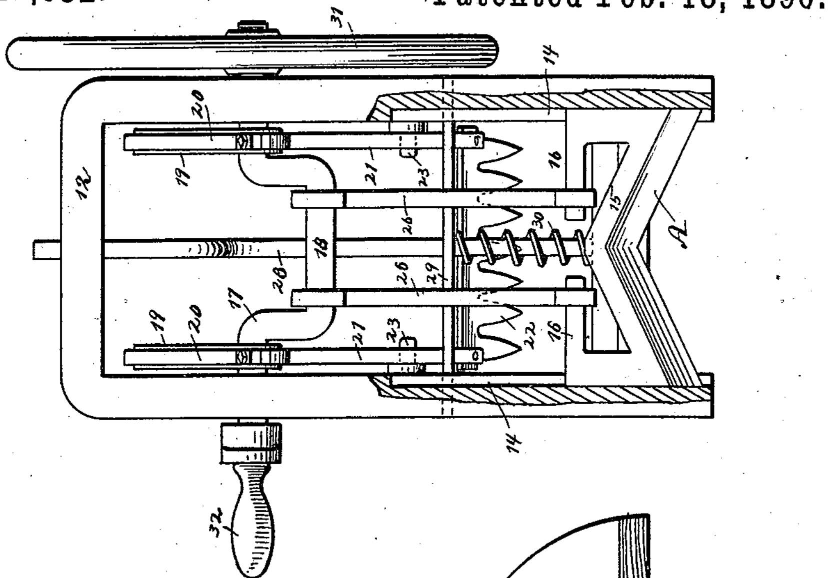
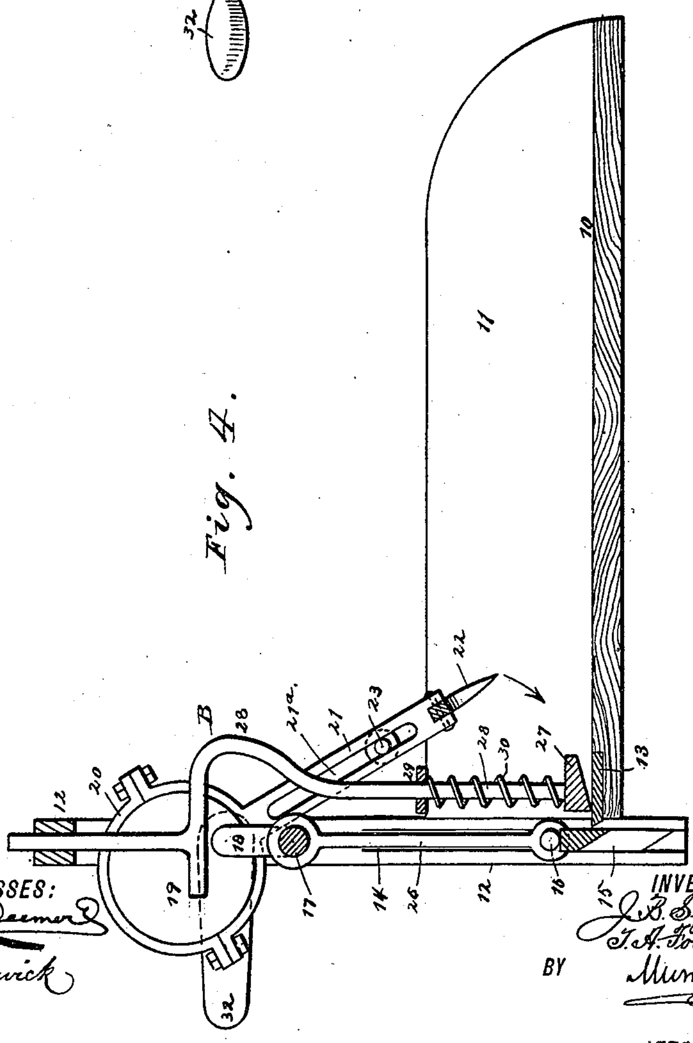


Fig. 4.



WITNESSES:

C. Sedgwick

INVENTOR:

J. B. Sykes
T. A. Foust

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN B. SYKES AND THADDEUS A. FOUST, OF DAWSON, PENNSYLVANIA.

FEED-CUTTER.

SPECIFICATION forming part of Letters Patent No. 421,632, dated February 18, 1890.

Application filed May 18, 1889. Serial No. 311,314. (No model.)

To all whom it may concern:

Be it known that we, JOHN B. SYKES and THADDEUS A. FOUST, of Dawson, in the county of Fayette and State of Pennsylvania, have invented a new and Improved Feed-Cutter, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in feed-cutters, and has for its object to provide a machine of simple, durable, and effective construction, in which the cutting-blade is driven direct from the main shaft.

A further object of the invention is to provide a means for firmly clamping the material to be cut close to the knife as the latter is descending, and also to provide a feed mechanism which will effectively carry the material forward to the knife at the proper moment, but which will not contact with the material in its rearward movement.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the machine. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section through the body of the machine, and Fig. 4 is a longitudinal vertical section through the same on line *x x* of Fig. 2.

The body of the machine consists of a bottom 10, sides 11, projected upward from the bottom, and a metal bow-frame 12, the members whereof are secured to the said side pieces in any approved manner. The sides and bottom of the body are usually formed of wood, and transversely at the rear or delivery end of the said bottom a cutting-blade 13 is secured, the cutting-edge of which is beveled on the under side and made to extend slightly within the bow-frame, as shown in Fig. 4.

In channels 14, produced in opposed faces of the bow-frame members, the upper knife 15 is held to slide, having the cutting-edge inclined downward in opposite directions from the center of the blade, as best shown at A in Fig. 3. Each end of the sliding knife at the upper side is provided with an arm 16, extending inward over the body of the knife, for a purpose hereinafter set forth.

In the bow-frame 12, near the upper end, a shaft 17 is journaled, provided with a central crank-arm 18, and at each side of the crank-arm within the frame a cam-disk 19 is rigidly mounted upon the shaft, and each disk is loosely encircled by an eccentric strap 20, made in one or two pieces, having projected therefrom within the body and in direction of the receiving end a feed-arm 21, provided with a longitudinal slot 21^a.

Each feed-arm is rigidly secured to a comb 22, located transversely within the body and independent of the same. The several feed-arms are each guided in their throw by a pin 23, passed through the slot therein above the sides of the body. Each pin, which serves as a fulcrum for the feed-arms, is integral with an angled bracket 24, the brackets being adjustably secured by set-screws 25 or their equivalent to the outer face of the side pieces, as shown in Figs. 1 and 2. By raising or lowering the fulcrum of the feed-arms the attached comb may be made to travel in its feeding throw close to or a distance from the knives.

It will be observed that by the peculiar attachment of the feeding mechanism to the drive-shaft the comb will contact positively with the material to feed it to the knives, and that in the return throw said comb will clear the material, whereby no portion of the said material will be drawn from the knives as frequently happens when a ratchet-feed is employed. The sliding knife is driven directly from the crank or drive shaft by connecting each arm 16 of said knife with the crank-arm of the drive-shaft by a pitman 26, as best illustrated in Figs. 3 and 4.

In connection with the feed-cutter, we employ a presser-block or clamp-head 27, adapted to hold the material firmly upon the fixed blade, when the sliding blade makes its downward cut. To the upper surface of the clamp-head or presser-block a rod 28 is secured, which extends vertically upward through a guide-bar 29 to a point opposite the drive-shaft, from whence it is curved outward and horizontally over the shaft, as shown at B in Fig. 4, and vertically upward through the bow-

frame, which serves as an upper guide. One arm of the rod 28 is preferably made to extend rearward over and beyond the shaft.

The head 27 is normally held in contact with the fixed knife by a spring 30, coiled around the rod 28 between the head and the guide-bar 27, and at the proper moment the head is elevated to permit the feed mechanism to operate by the contact of the crank-arm of the drive-shaft with the curved portion of clamp-head rod 27, whereby the rod is lifted. When the crank-shaft passes the rod, the spring 30 again forces the head downward. The drive-shaft is provided with a fly-wheel 31 at one end and a crank 32 at the opposite end, or, if desired, the shaft may be revolved by a suitable motor.

In operation when the sliding knife is carried upward by the rotation of the shaft the clamping-head is also elevated, and at this moment the feed mechanism is acted upon to force the comb in direction of the knives. The clamp-head descends before the knife, whereby the material is held in position to receive the cut, and as the knife descends the feed mechanism makes its backward throw.

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

1. In a feed-cutter, the combination, with a trough-like body, a bow-frame attached to said body, a crank-shaft journaled in the frame, a knife held to slide in said frame, and pitmen connecting the crank-shaft and knife, of disks eccentrically secured to the shaft, a slotted arm actuated by each disk, a comb secured to said arms, and angle-brackets attached to the body, one member whereof is passed through the slot in said arms and serving as fulcrums therefor, substantially as shown and described.

2. In a feed-cutter, the combination, with a trough-like body, a bow-frame attached to said body, a knife capable of sliding in said frame, having arms integral with the upper edge, a crank-shaft journaled in the frame, and pitmen connecting said knife-arms and the crank-shaft, of disks eccentrically secured to the crank-shaft, straps encircling said disks, a slotted arm projected from each strap, a comb secured to said arms, and an angle-bracket adjustably secured to each side of the body, having one member passed through the slot of the strap-arms and serving as fulcrums therefor, substantially as shown and described.

3. In a feed-cutter, the combination, with a trough-like body, a bow-frame attached to the same, a knife held to slide in said frame, a crank-shaft journaled in the frame, and pitmen connecting the knife and crank-shaft, of eccentrics secured to the crank-shaft, an eccentric strap encircling each eccentric, a slotted arm projected from each strap, a comb secured to said arms, angle-brackets pivoting said arms, a clamp-head, and a spring-actuated rod secured to the clamp-head, curved over the crank-shaft and adapted for contact therewith, substantially as shown and described.

4. In a feed-cutter, the combination, with the body and a crank drive-shaft, of a feed mechanism comprising eccentrics secured to the shaft, an eccentric strap encircling each eccentric, a slotted arm projected from each strap, a comb secured to said arms, and angled brackets adjustably secured to the body, having one member passed through the slot of the strap-arms, serving as a fulcrum for the same, substantially as shown and described, and for the purpose specified.

JOHN B. SYKES.
THADDEUS A. FOUST.

Witnesses:
M. E. PORTER,
J. S. STRAWN.