

UNITED STATES PATENT OFFICE.

CHARLES A. PETTET, OF BELLEVILLE, CANADA.

STRAW OR ENSILAGE CUTTER.

SPECIFICATION forming part of Letters Patent No. 480,508, dated August 9, 1892.

Application filed March 26, 1890. Renewed April 7, 1892. Serial No. 428,160. (No model.) Patented in Canada March 1, 1889, No. 30,876.

To all whom it may concern:

Be it known that I, CHARLES A. PETTET, a citizen of the Dominion of Canada, and a resident of Belleville, in the county of Hastings and Province of Ontario, Canada, have invented certain new and useful Improvements in Straw or Ensilage Cutters, (for which Letters Patent have been granted to me in Canada, bearing date March 1, 1889, and numbered 30,876;) and I do 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is an end view. Fig. 2 is a vertical transverse section. Fig. 3 is a top plan view. Fig. 4 is a detail view of the knife-wheel.

This invention relates to certain improvements in straw or ensilage cutters, having for its object, among other things, to effect a differential feed motion of the feed-rollers, to cause the feeding of the straw or ensilage to be slow when the knives of the knife-wheel are passing the throat of the feed-box and fast when the knives are leaving or approaching said throat, and also to require the application of comparatively little power for the operation of the machine and to do away to a great extent with the jarring from the cutting action of the knives or knife-wheel.

To these ends the invention consists of the novel combination and construction of parts, as will appear from the following description and accompanying drawings.

In accordance with my invention I employ, as usual, a frame A, upon which is mounted in suitable bearings the shaft *a* of the knife-wheel B, carrying the knives or cutters C C. Upon this frame is also secured the feed-box D, having a lateral throat or opening *b*, in front of and adjacent to which the knife-wheel B has its plane of rotation. The horizontal plane of the throat or opening *b* is below the axis of the wheel B. The knives or cutters C C of wheel B have each an elliptical cutting-edge and are bolted to correspond-

ingly-curved seats *d*, formed in the S-shaped cross-bar or spokes of the wheel B. The knives extend in opposite directions from near the axis of the wheel outward to the inner margin of the rim, the more acute curvature being near the axis. The position of the knives on account of the elevation of the axial plane of the wheel B above the plane of the throat or opening *b* of the feed-box D and the lateral arrangement of said throat enables them to have a draw cutting action, the initial pressure being toward the center of the throat and the knives caused to touch or pass through the entire plane of the latter during the revolution of the wheel. This construction and arrangement of parts require the application of comparatively little power for the operation of the machine and do away to a great extent with the jarring, as the stroke of the knife commences at the inner upper corner edge of the throat and continues the cutting until the knife has the entire plane of the mouth of the throat.

E E are the feed-rollers, arranged in the feed-box D adjacent to the throat or opening *b*, the shafts *e* of which are suitably journaled in or upon the frame A, and secured to one end of which shafts is a gear-wheel *f*, gearing with a small gear-wheel or pinion *g* on a journal supported on the frame A, said journal carrying another larger gear-wheel *h*, gearing with a pinion or gear-wheel *i* on a counter-shaft *j*, also journaled upon said frame.

Upon one end of the knife-wheel shaft *a* is secured an ellipsoidal gear *k*, with which gears a similar gear *l*, secured to the counter-shaft *j*, each of these gears also being concave upon its inner surface, whereby when the knife-wheel, with its shaft, is operated through the aforesaid gearing the feed-rollers will simultaneously be operated to effect the feeding of the straw or ensilage to the knife-wheel. The gears *k l* are so geared that they meet or intersect at planes passing through the lesser diameter or axis of one and the major axis or diameter of the other. This arrangement, taken in connection with the peculiar construction of the gearing *k l*, has the effect to feed the straw or contents of the feed-box fast through the throat or opening *b* when the

knives of the knife-wheel are approaching or leaving the said throat and slow when the knives are in the plane of the throat or cutting the straw or ensilage, thus providing for
5 "long-cut" straw or ensilage.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

10 In a straw or ensilage cutter, the combination, with the knife-wheel and its shaft, the

feed-box, and the feed-rollers, of the ellipsoidal concave gearing between said knife-wheel shaft and a shaft geared to said feed-roller shaft, substantially as set forth.

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

CHAS. A. PETTET.

Witnesses:

H. PARKER THOMAS,
J. PARKER THOMAS.