G. T. MURRAY, H. & S. McC. WILLSON.

Hay, Straw and Fodder Cutter.

No. 216,486. Patented June 10, 1879.

Fig. 1.

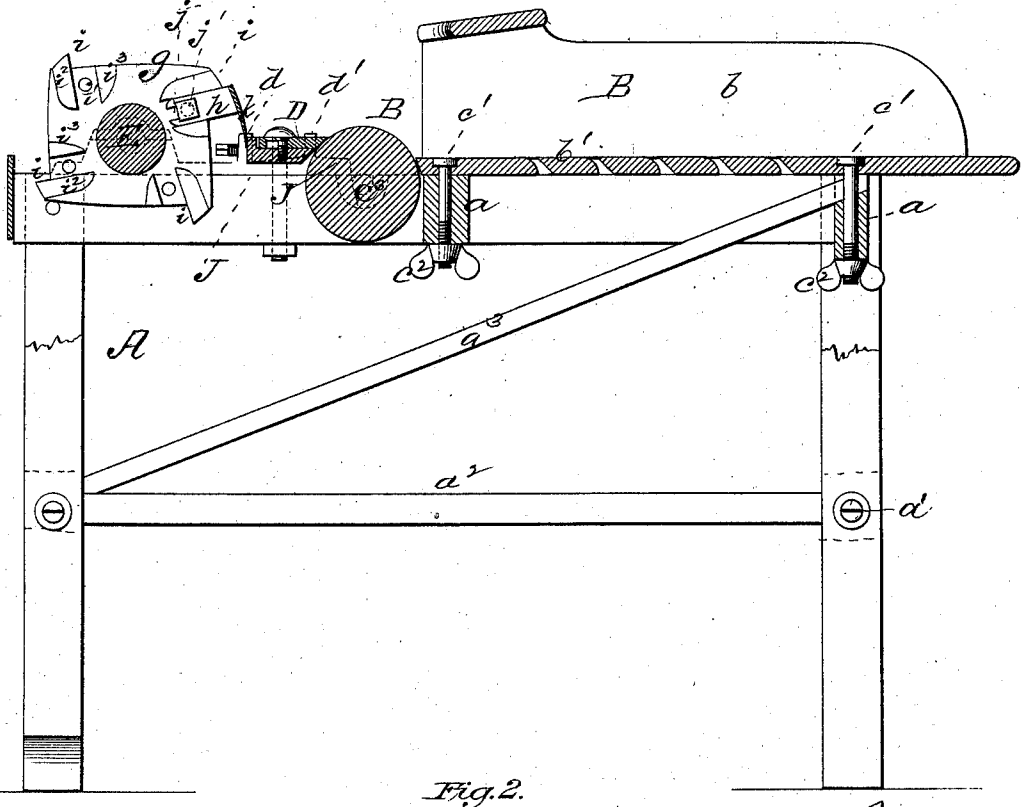
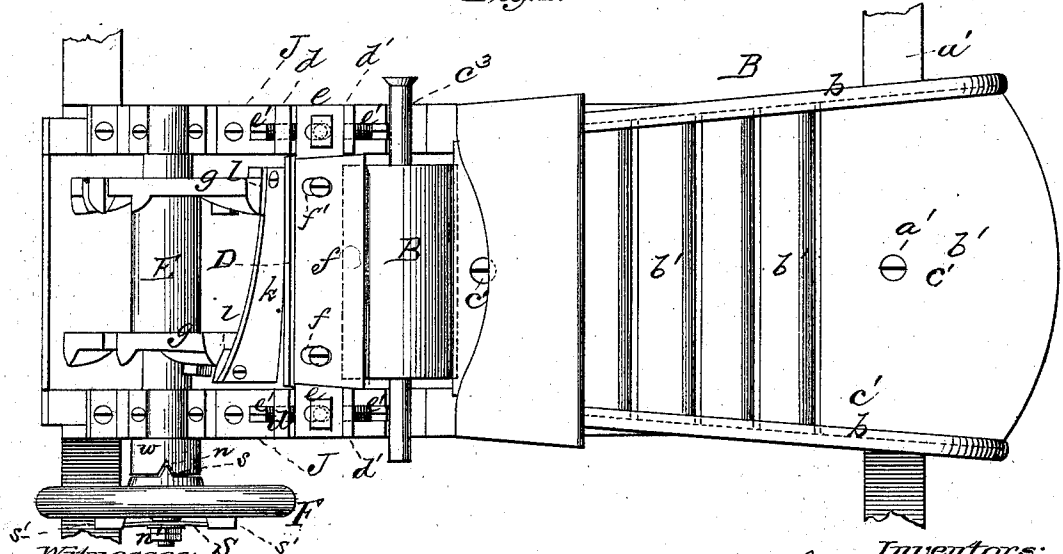


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE T. MURRAY, HIRAM WILLSON, AND SAMUEL McC. WILLSON, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN HAY, STRAW, AND FODDER CUTTERS.

Specification forming part of Letters Patent No. **216,486**, dated June 10, 1879; application filed March 20, 1879.

To all whom it may concern.

Be it known that we, GEORGE T. MURRAY, HIRAM WILLSON, and SAMUEL McC. WILLSON, of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a new and valuable Improvement in Hay, Straw, and Fodder Cutters; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of our feed-cutter, and Fig. 2 is a top view of the same.

This invention has relation to improvements in hay and feed cutters; and the nature of the invention consists in certain novel combinations of parts, as will be hereinafter more fully set forth.

In the accompanying drawings, the letter A designates an upright frame, braced together at top by the transverse beams *a*, and near its bottom by other beams, a^1, connected to each other by a beam, a^2. The frame is also braced diagonally by a beam, a^3.

Resting upon the frame is a hopper, B, the sides *b* of which are rabbeted internally at their lower edges to receive the ends of the bottom boards, b^1, as shown at *c*, the said sides and bottoms being then secured together by screws. Extending downward through the bottom of the hopper and through the beams *a* are the headed screws c^1, upon the ends of which are applied the thumb-nuts c^2, by detaching which the hopper may be lifted off of the frame and stowed compactly under the beams *a* for transportation. It is thus protected *in transitu* and the bulk of the machine greatly reduced. On arriving at its destination the hopper may be set in place with ease and dispatch.

At the reduced end of the hopper is a feed-roller, B, the journals of which are seated in sunken bearings c^3 at the ends of the metallic plates J, that support the working parts of the cutter.

d d' indicate two spaced parallel lugs erected upon the said plates, in the space between which are received the reduced ends *e* of a cutter-bar, D. This bar is adjusted toward the cutting mechanism by means of set-screws *e'*, extending through the lugs *d d'* from opposite directions, and bearing against the reduced ends *e* of the said bar. This adjustment is had by unscrewing the set-screws *e'* adjacent to the cutting mechanism, and setting up the others. This creates an interval between the feed-roller and the adjacent edge of the bar D, that is bridged by a metallic plate, *f*, preferably recessed into the top thereof, and provided with transverse slots *f'*, by means of which and suitable screws passing through them into the bar this adjustment is possible.

The cutting-wheel consists, mainly, in two disks or hubs, *g g*, keyed upon a shaft, E, and provided upon their edges with square-shouldered projections *i*, and upon one side with grooves i^1, formed by the parallel ribs i^2 i^3.

h indicates an angular bracket, one leg of which is adapted to be received between the ribs i^3 i^2 in the groove i^1, and to be secured thereto by means of a set-screw, *j'*, extending through a slot, *j*, in said leg into the body of the disk or hub. To these brackets are secured, by means of screws or their equivalents, the cutting-knives *k*, a recess being formed in the top of the bracket for their reception, or a shoulder, *l*, carried across the back of the said bracket, to serve as a bearing for the back of the said knife.

By loosening the set-screws the knife may be adjusted in the desired position.

Upon the shaft E is a collar, *w*, having in its face the angular notches *n*. The driving or hand wheel F has similar spurs *s*, fitting in the said notches, and on its other side is provided on opposite sides of the hub with the notched spurs *s'*. A spring, S, having a central opening, is passed over the shaft, its ends engaged in the notches of spurs *s'*, and prevented from leaving the shaft by a suitable nut, *n'*, and washer. When the revolving cutter strikes against a resisting substance, as a stick or chip, in the act of cutting feed, the yielding of the spring that holds the hub into engagement with the collar aforesaid allows

the spurs *s* to escape from the notches in said collar, and the driving-wheel to turn without further actuating the cutter.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a feed-cutter, the hopper having the lower edge of its sides rabbeted and the bottom boards let into said rabbets, the bolts c^1, extending downward through the said bottom and the cross-beams of the frame, and the thumb-nuts c^2 on the lower ends of said beams, all combined as specified.

2. The combination, with the feed-roller B, and the plates J, having spaced lugs *d d'*, of the cutter-bar D, having reduced ends *e*, received between said lugs, the adjusting-screws *e'*, and the plate *f* on the cutter-bar adjustable toward the roller, substantially as specified.

3. The cutting-wheel consisting of the shaft E, the hubs *g*, having square-shouldered projections *i* and ribs i^2 i^3, forming the grooves i^1, the angular brackets *h*, adjustably secured in said grooves and provided with a shoulder, *l*, and the cutting-knives *k*, secured to said brackets, substantially as specified.

4. The combination, with the shaft E, having collar *w*, provided with notches *n*, of the driving-wheel F, having spurs *s*, received in said notches, and the notched lugs *s'*, the spring S, passed over the end of the shaft and having its ends engaged with lugs *s'*, and a retainer-nut or nut, *n'*, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

GEORGE T. MURRAY.
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SAMUEL McC. WILLSON.

Witnesses:
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S. W. FLEMING.