

J. DICK, Jr.
Straw-Cutter.

No. 215,894.

Patented May 27, 1879.

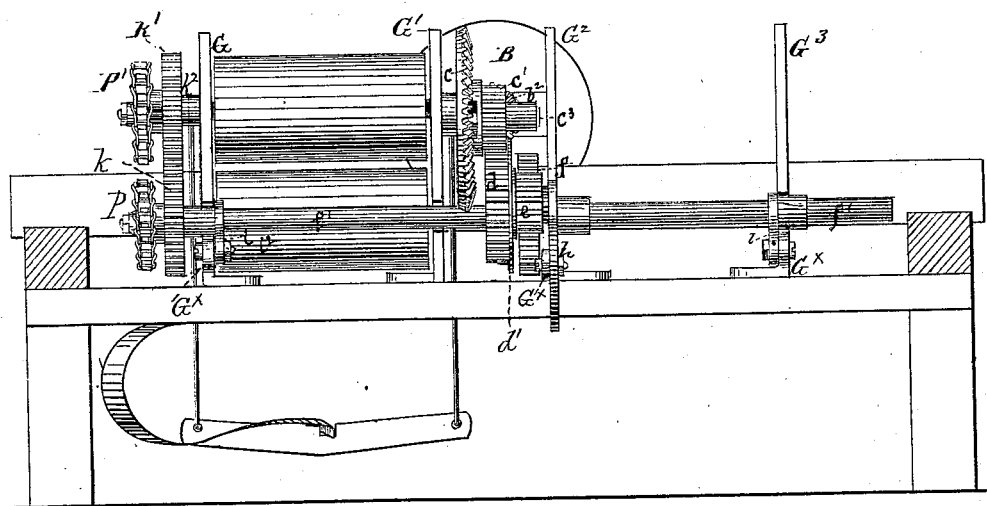


Fig. 1

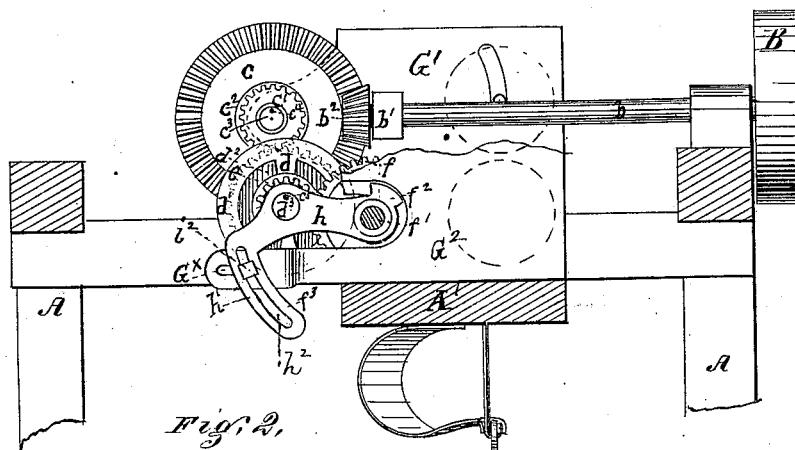


Fig. 2.

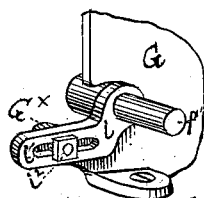


Fig. 3

Witnesses
J. H. Stevenson
D. H. Jones

Inventor Joseph Dick Jr
By Attorney J. C. Anderson

UNITED STATES PATENT OFFICE

JOSEPH DICK, JR., OF CANTON, OHIO.

IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. **215,894**, dated May 27, 1879; application filed November 6, 1876.

To all whom it may concern:

Be it known that I, JOSEPH DICK, JR., of Canton, county of Stark, State of Ohio, have invented certain new and useful Improvements in Feed and Straw Cutters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a vertical transverse section through a feed-cutter, showing my improvements applied. Fig. 2 is a side elevation of the same; and Fig. 3 is a perspective view of a portion of one of the gear-supporting standards detached, showing the means for adjusting the feed-actuating shaft.

Similar letters of reference denote corresponding parts wherever used.

The invention relates to a novel means for adjusting the feed and the feed-actuating devices; and consists, first, in the employment of a flanged spur-wheel in connection with an interchangeable pinion or pinions and an adjusting-shaft for changing the speed of the feed mechanism, said flanged wheel and pinions being made removable for the purpose of changing their relative positions or substituting other pinions of different diameters, and being held on their shafts when in place by the flange, as hereinafter explained.

It further consists in certain details of construction and arrangement for effecting the changes above described, and for adjusting the shaft through which the feed mechanism is actuated for taking up slack in the driving-chains, as hereinafter described.

In the accompanying drawings, A represents a strong upright frame of any usual or suitable construction, and *b* the main driving-shaft, provided at one end with a crank or driving-sheave or band-pulley, B, and mounted in suitable bearings on the frame. The inner end of this shaft *b* inside or in rear of its inner bearing, *b*¹, has a bevel-pinion, *b*², secured to it, which engages with and drives a bevel-wheel, *c*, mounted and rotating freely on a stud-shaft, *c*³, secured to one of the gear-standards or uprights G G¹, of which there are two, three, or more, according to the number of feed-boxes and of pairs of feed-rolls to be employed. The forward face of this bevel-wheel *c* or that

provided with the geared face has a clutch-face formed on its hub, which engages with a corresponding clutch-face on the inner end of a pinion, *c*¹, also mounted and turning loosely on the stud-shaft *c*³, with the bevel-wheel *c*. The gear-standards G are notched or provided with U-shaped sockets on their rear edges (see Figs. 2 and 3) for the reception of bearings for an adjustable shaft, *f*¹, from which motion is communicated to the feed-rolls, as hereinafter explained.

The bearings for said shaft are made in the form of sleeves attached to plates *i*, provided with slots *i*¹, through which they are adjustably connected with arms G^x, formed on the standards G, thus permitting the shaft *f*¹ to be moved in and out in the bearing-notches in the standards for regulating the tension of the driving-chains, through which motion is imparted to the feed-rolls, as will be explained.

The arm attached to the standard G², adjacent to that, G¹, to which the stud-shaft C³, above described, is attached, (indicated at *h*, Fig. 2,) instead of having the horizontal slot like the other arm, *i*, is provided at its outer end with an angular projection or arm, *h*¹, having a slot, *h*², formed on it in the arc of a circle of which the shaft *f*¹ is the center, thus permitting it to be adjusted around the shaft *f*¹ as a center, the slot for permitting the adjustment of the shaft in and out being, in this instance, formed in the standard-arm G^x, as shown in Fig. 2. The same bolt *i*² accommodates both of the adjustments described. The arm *h*, midway between the fastening-bolt *i*² and shaft *f*¹, has a stud-shaft, *d*³, on its face adjacent to standard G¹, upon which is loosely mounted a pinion, *e*, which engages with and imparts motion to a spur-gear, *f*, on the shaft *f*¹.

The outer face of the hub of pinion *e* is provided with a clutch-face similar to that on wheel *c*, above described, adapting it to engage with and receive motion through a similar clutch-face on the hub of a flanged spur-wheel, *d*, also mounted loosely on the stud *d*³, and engaging with and receiving motion from the pinion *c*¹, above described. The flange *d*¹ of the wheel *d* is formed on the inner or clutch side of said wheel, and projects beyond its teeth, overlapping the teeth of the wheel *c*¹,

engaging with said wheel d , as shown in Figs. 1 and 2, and serves to hold both of said wheels on their respective shafts.

By this arrangement it will be seen that by loosening the bolt i^2 of arm h , and depressing said arm until the flange d^1 of wheel d is clear of wheel c^1 , said wheels can be readily removed and transposed or transferred each to the shaft of the other for changing the relative speed of their shafts; or other similar wheels of different relative diameters may be put in their places for giving any desired speed to the shaft f' , the arm h permitting the adjustment to conform to such change of gears.

The outer end of shaft f' has a gear-wheel, k , and a sprocket-wheel, P , secured to it, the former gearing into and driving a gear-wheel, k^1 , attached to a stud-axle, k^2 , on the outer face of standard G , said gear-wheel having also a sprocket-wheel, P' , attached to it, from which motion is imparted through a driving-chain to the upper feed-roll, a similar chain communicating motion from the wheel P to the lower feed-roll, this latter arrangement being the same as in my patent of May 16, 1876, No. 177,383.

Only a single pair of feed-rolls is represented in the drawings—viz., between the standards G G^1 ; but the shaft f' is shown extended, and similar rolls may be applied between the standards G^2 G^3 , and geared to and driven from the

opposite end of the shaft f' in a similar manner.

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

1. In a feed or straw cutter, the combination of interchangeable transmitting-gears held in place on their respective shafts by a projecting flange formed upon one of said wheels, substantially as described.

2. The interchangeable gears c^1 and d , held in place on their respective shafts by the projecting flange, as described, in combination with the adjustable shaft, permitting the removal of said gears when required, substantially as and for the purpose specified.

3. The combination of the gears c^1 , d , and e , arranged in pairs, having interposed clutch-faces, and the peripheral flange for holding them in clutch and upon their respective shafts, substantially as described.

4. The shaft f' , through which motion is communicated to the feed-rolls mounted in adjustable arms i , attached to the gear-standards, substantially as described.

In testimony that I claim the foregoing as my invention I hereto set my hand.

JOSEPH DICK, JR.

Witnesses:

AMELAUS DUMONT,
WM. F. SCHERIV.