

2 Sheets—Sheet 1.

FEEDER FOR THRASHING MACHINES AND CLOVER HULLERS.

Patented Apr. 28, 1885.

Fig. 1.

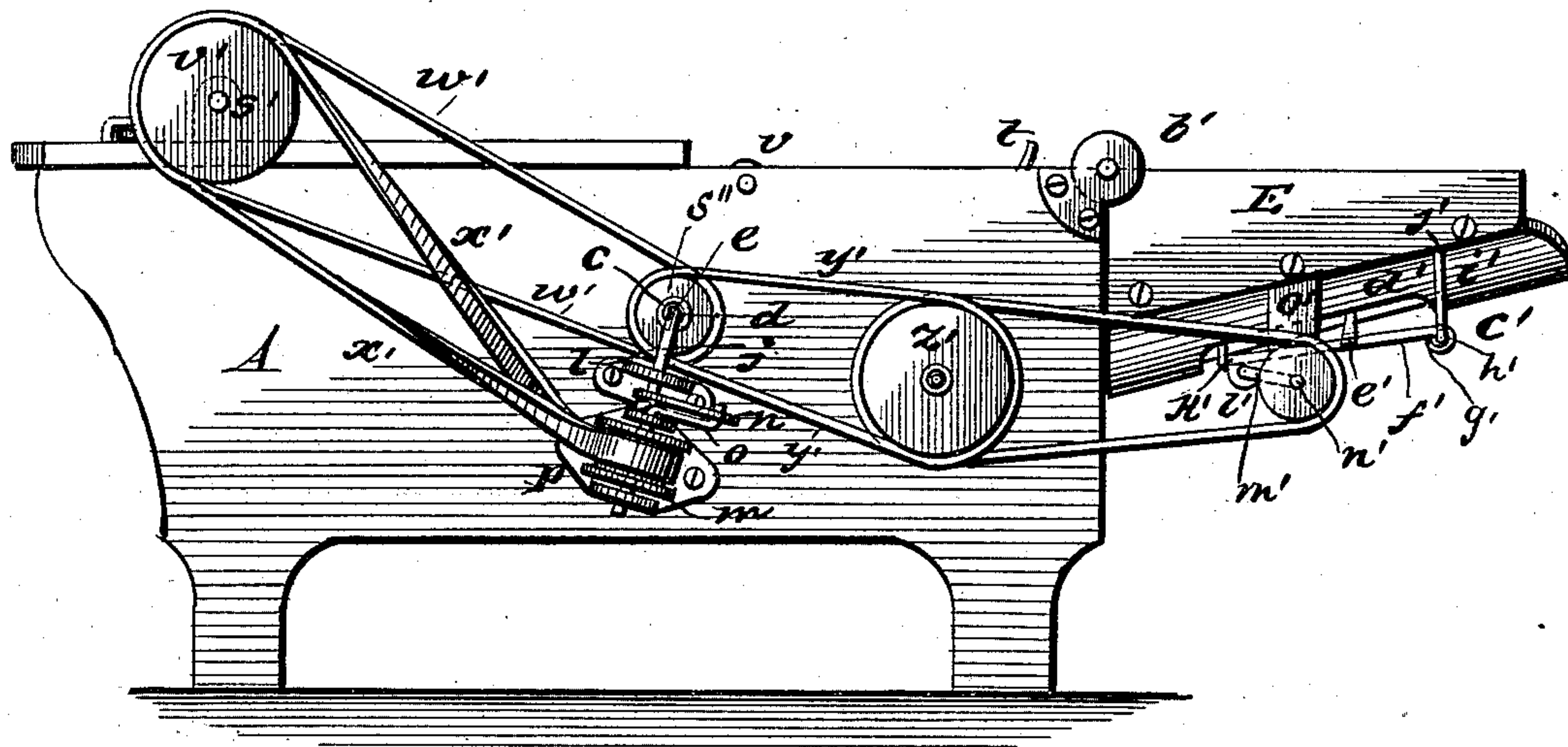
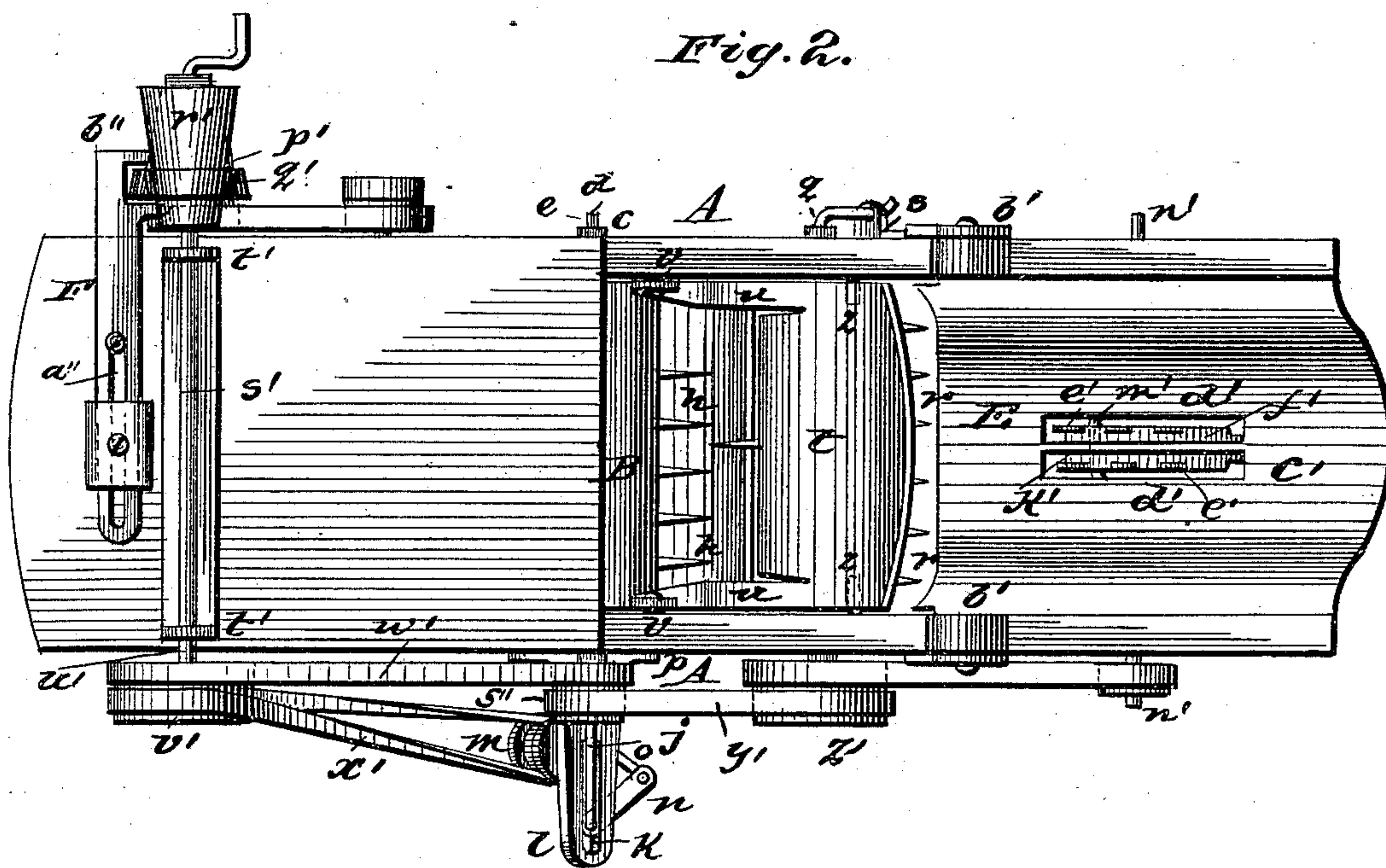


Fig. 2.



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FEEDER FOR THRASHING MACHINES AND CLOVER HULLERS.

No. 316,819.

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Fig. 3.

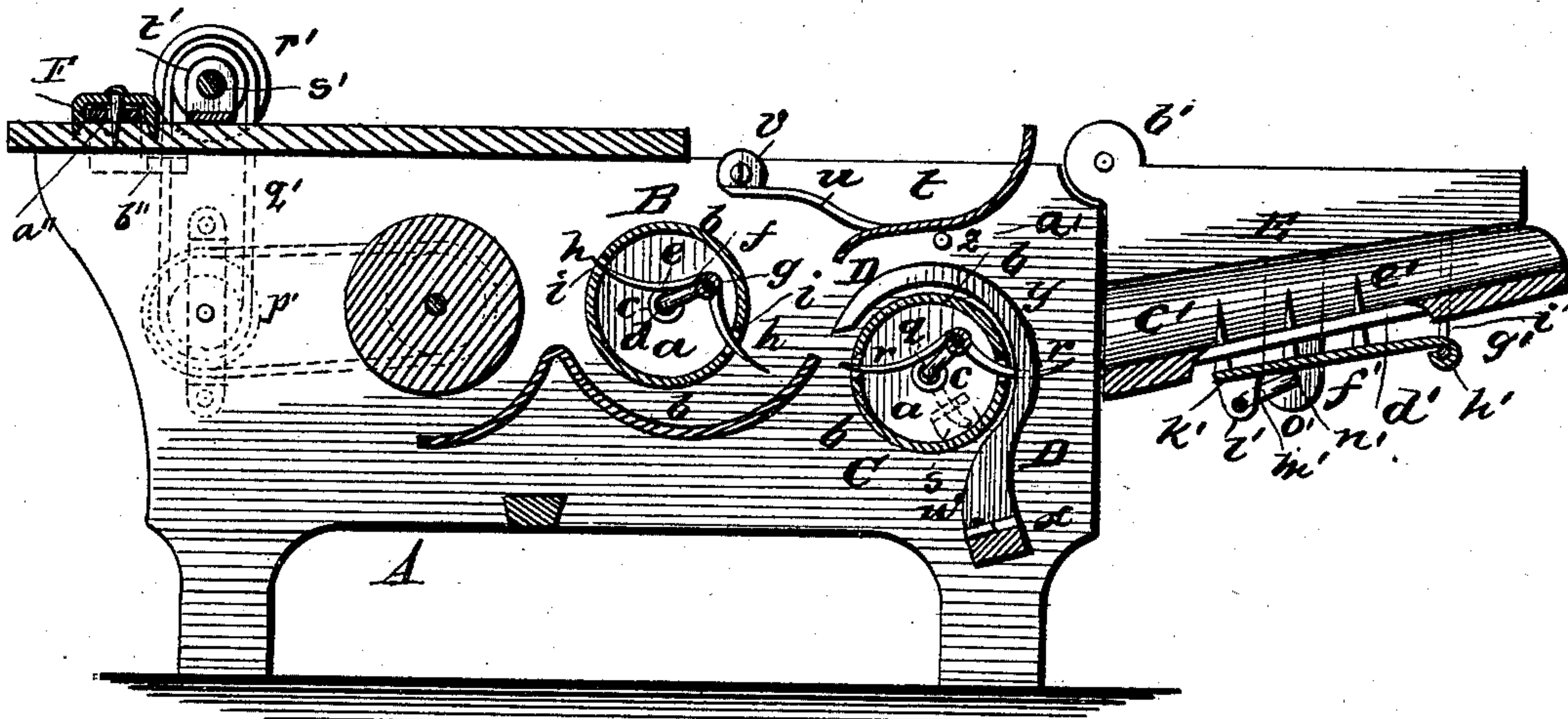


Fig. 4.

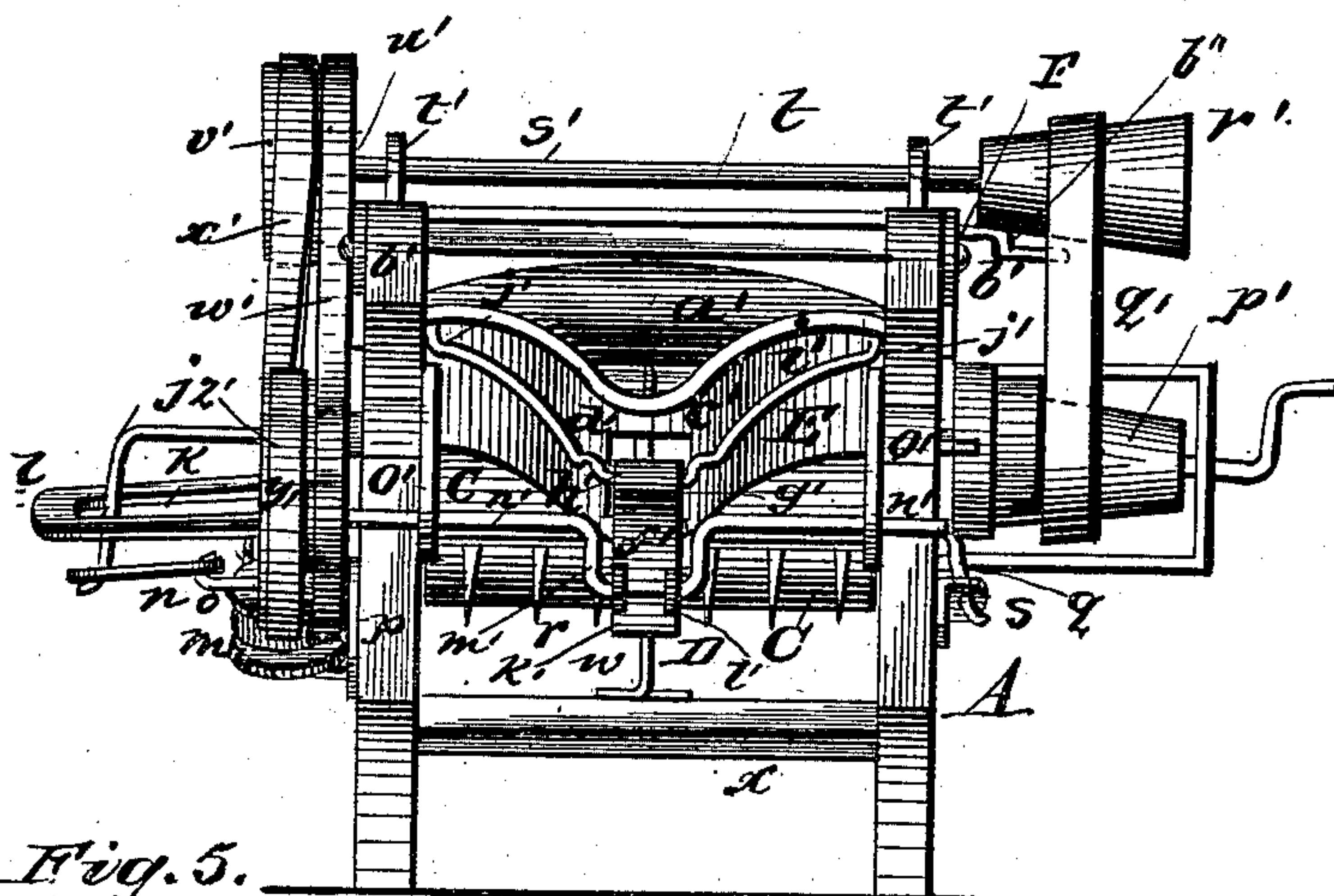
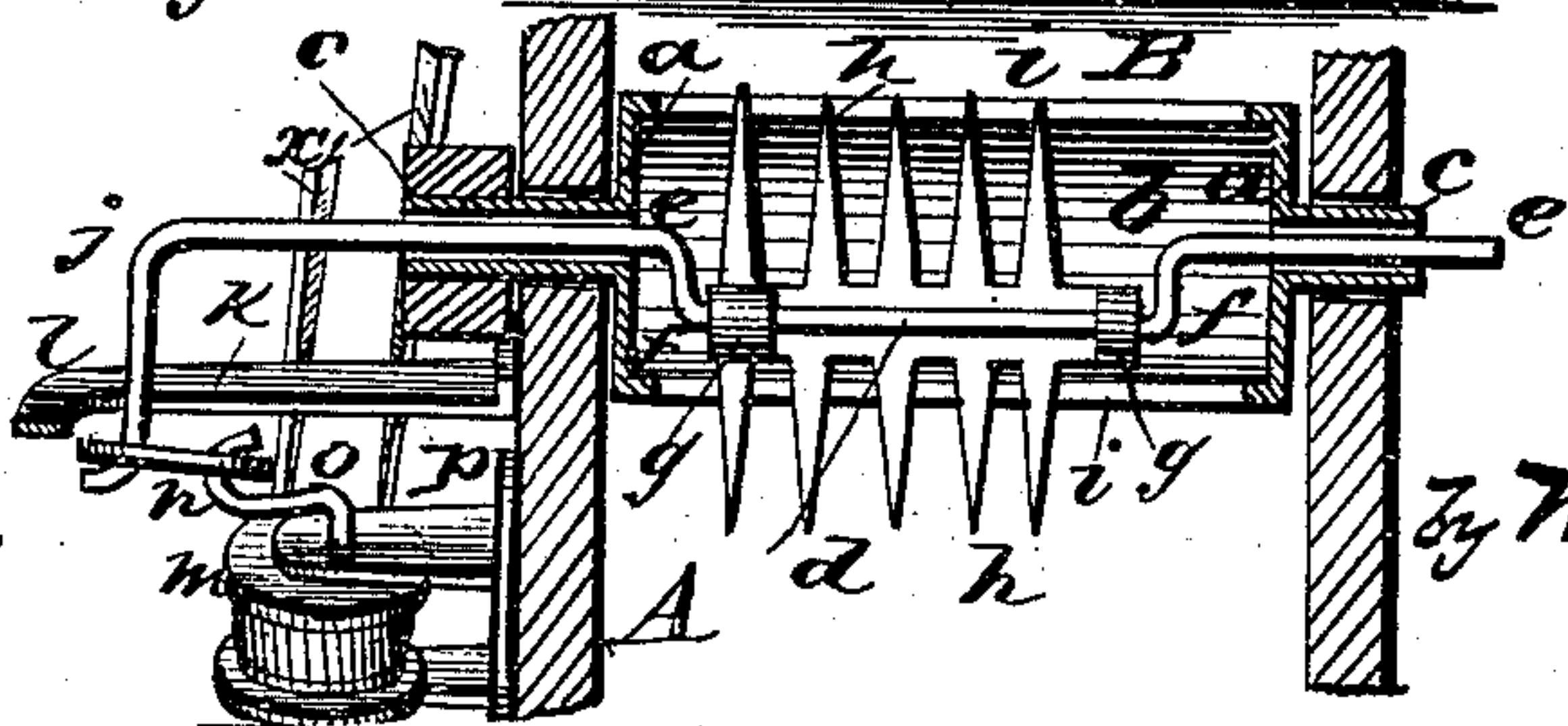


Fig. 5.



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FEEDER FOR THRASHING-MACHINES AND CLOVER-HULLERS.

SPECIFICATION forming part of Letters Patent No. 316,819, dated April 28, 1885.

Application filed June 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, MERRICK E. PERRING, a citizen of the United States, residing at Berrien Springs, in the State of Michigan, have invented certain new and useful Improvements in Feeders for Thrashing-Machines and Clover-Hullers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to improvements in thrashing-machines and clover-hullers; and it consists in the construction and novel arrangement of the several parts of which it is composed, all as will be hereinafter more fully explained, and particularly pointed out in the claims appended.

The annexed drawings, to which reference is made, fully illustrate my invention, in which Figure 1 represents a side view of my device. Fig. 2 is a top or plan view of the same. Fig. 3 is a vertical sectional view. Fig. 4 is an end view; and Fig. 5 is a cross-sectional view taken through the cylinder B.

Referring by letter to the accompanying drawings, A designates the body of a thrashing-machine or clover-huller, in the mouth of which and arranged transversely therein is a pair of feed-cylinders, B and C, each composed of a pair of end disks, *aa*, which are connected by the transverse segmental bars or plates *bb*, in any suitable manner, so as to leave longitudinal openings or slits in the perimeters of the cylinders. These cylinder-disks are provided with hollow journals *cc*, which have their bearing in the side walls of the machine, and arranged transversely within the cylinder B is a crank-shaft, *d*, the ends *e* of which have their bearing in the hollow journals *cc* of the cylinder aforesaid.

Upon the crank portion *f* of the shaft *d* is pivoted, by eye-bearings *g*, rake-fingers *h*, which project through the transverse slots *i*, between the bars *b b* of the cylinder B. One end of the crank-shaft *d* is bent downwardly, as at *j*, which reciprocates within a slot, *k*, in the end of a bracket, *l*, secured to the side of the frame. This bent arm is connected to a pulley, *m*, by a pitman, *n*, the connecting end being pivoted to a crank-pin, *o*, on the pulley, which latter is journaled in bracket *p*, secured to the frame of the machine. This slotted bracket permits a lateral movement of the

crank-shaft within the cylinder B, and at the same time prevents said shaft from revolving.

C represents the other cylinder, which is arranged transversely in the mouth of the machine and in front of the cylinder B. This cylinder is constructed in a similar manner to the cylinder B, except that the crank-shaft *q*, upon which the fingers *r* are pivoted, does not move in any direction, but is secured at one end to a bracket, *s*, secured to the outside of the side wall of the machine. Above this cylinder C, and within the mouth of the machine, is arranged a yielding board, *t*, which is provided with the lateral arms *u*, that are pivoted at their ends to the inside walls of the frame, as shown at *v*. This yielding board curves at its front end forward and upward, and at its rear end the same curves downwardly, and the same serves to press the sheaves firmly upon the band-cutting knife, hereinafter described, and relieve the bundles or sheaves from the binding-cord. At the same time, this hinged board not only guides the straw to the cylinder, but adjusts itself to different size bundles, and it also prevents the shaft from passing too rapidly over the feed-cylinder.

D represents the band-cutting knife, which is removably secured at its shank or lower portion, *w*, to the transverse bar *x* of the frame. This knife is constructed in semicircular form, as shown at *y*, and partly encircles the cylinder C, the upper edge of said knife being the cutting-edge. This knife can be removed and sharpened and replaced when desired. The pivoted board *t* is arranged directly over the knife and cylinder C, and rests upon stop-lugs *zz*, secured to the frame, thus leaving a space, *a'*, between the cylinder and board in order to admit the sheaves to the cylinders.

E indicates a trough or chute, which inclines forwardly and upwardly from the mouth of the machine, and the same is pivoted or hinged to said frame, as at *b'*, and the floor or bottom of which is concaved, as at *c'*, in the center of which is made two longitudinal slots, *d'*, through which project vertically-reciprocating fingers *e'*, which are secured to a bar, *f'*, one end, *g'*, of which is hinged at *h'* to the center of a bail, *i'*, which is in turn pivoted at its ends *j'* to the incline chute aforesaid.

The opposite end, *k'*, of said bar is provided with eye lugs or bearings *l'*, which engage the crank portion *m'* of a transverse shaft, *n'*, that has its end bearings in brackets *o'*, secured to each side and beneath the chute.

Power is applied to the cone-pulley *p'*, secured in bearings on the side of the frame, and by the belt *q'* revolves the cone-pulley *r'* on the shaft *s'*, secured in bearings *t'* on the frame, as shown.

Secured to the end *u'* of the shaft *s'* is a double pulley, *v'*, which is provided with the belts *w'* and *x'*. The former is connected to a pulley, *s''*, on the hollow journal of the cylinder B, and said cylinder receives its rotary movement therefrom, while the belt *x'* connects with the pulley *m*, and through the medium of the pitman operates the crank-shaft *d* and fingers *h* in their lateral movement. This pulley *s''* on the hollow shaft or end bearings of the cylinder-head is also a double pulley, and a belt, *y'*, connects the same with a double pulley, *z'*, on the hollow shaft of the cylinder C, and from this double pulley *z'* a belt connects with a small pulley on the end of the transverse crank-shaft *n'* beneath the chute, and to which the chute-fingers are attached. Thus through the medium of the pulleys and belting the device is operated.

F represents an adjustable arm, which is provided with a horizontal slot, *a''*, and a forked end, *b''*, which latter engages the belt on the cone-pulleys, and the same is adjustably secured to the top of the machine, as shown, whereby the belt may be shifted in regulating the speed of the upper cone, thus regulating the speed of the feeding device.

It will be observed from the above description and by reference to the annexed drawings that the cylinders alone revolve, carrying with them the fingers therein, which latter project forward and grasp the straw, grain, &c., and carry it to the thrashing-cylinder commonly used in these machines, and after the fingers carry the straw as far as is necessary they draw inwardly at the rear of the cylinders, and do not project again until they and the slots in the cylinders in which they work face the inclined chute. At the same time the crank-shaft in the cylinder C remains fixed, and the crank-shaft in the cylinder B with its fingers has a transverse movement, which spreads the straw as it is about to pass under the thrashing-cylinder of the machine. These fingers extend from end to end of the cylinders, the slots in which they work being the entire length thereof. The grain is fed upon the inclined chute E and is carried forward by the fingers *e'*, operated by the crank-shaft *n'*. When the same reaches the first cylinder, if bound, the cord or binding is cut by the knife D. At the same time the grain passes beneath the hinged board *t* and over the cylinder C, when it is carried by the fingers of the latter cylinder to the next cylinder, B, and by the fingers of this cylinder the grain is not only carried to the thrashing-

cylinder of the machine, but said grain is loosened or spread out before entering said thrashing-cylinder, which is accomplished by the transverse or sidewise movement of the fingers in said cylinder B. The hinged board over the cylinder may be thrown rearwardly, and the straw can be thrown directly on the cylinder C when the straw is not bound in sheaves. The feeding and separating cylinder B makes about two revolutions to one revolution of the cylinder C, thus receiving the straw very rapidly from the cylinder C, thereby preventing the mouth of the machine from choking.

It will be seen by the drawings that the top of the machine is open above the cylinders to admit the loose grain when the pressure-board is thrown back, and when the machine is not in use the hinged chute can be folded back over this opening, thereby forming a cover for the same. At the same time said chute, when folded back, is out of the way when the machine is being transported from place to place.

As my improvement can be readily applied to different machines, I therefore have not described any particular machine, and, as it only relates to the feed for the same, I have omitted the other parts which all machines of this class usually have.

It will be readily perceived that my improved feeding device can be applied to machines now in use at a small cost, and it is simple in operation, durable, and at the same time cheap to construct.

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

1. "In a feeding-cylinder for a thrashing-machine or clover-huller, the combination of the heads *a a*, having the hollow journals *c* and the connecting-segments *b*, the rake teeth or fingers *h*, the crank-shaft *d*, slotted bracket *l*, pitman *n*, and crank-wheel *m*, whereby a rotary and reciprocating movement is given to the rake-fingers, as described, and for the purpose set forth.

2. The combination of the frame, the cylinders B and C, the pressure-board *t*, hinged at *v* to the frame, the bevel-knife D, partly encircling the cylinder C, the rigid crank-shaft *q*, carrying the rake-fingers *r*, and means whereby the parts are operated, as described, whereby the grain is fed to the separating-cylinder B and the band of the sheaf is severed, substantially as described.

3. The combination, with the machine-casing, the feed-cylinder, and separating-cylinder arranged within said casing, of the folding chute E, pivoted at *b'*, and constructed with a slotted concave floor, of the reciprocating teeth *e'*, secured to the plate *f'*, the hinged bail *i'*, crank-shaft *n'*, and means for operating the same, as shown, whereby the grain is fed from the chute to the cylinders, as described, and for the purposes set forth.

4. In a feeder for a thrashing-machine or clover-huller, the combination of the feeding

and separating cylinder B, means for operating it, substantially as described, the feed-cylinder carrying the fingers *r*, the fixed crank-shaft *q*, the pivoted pressure-board *t*, the band-cutting-knife D, arranged as shown, the hinged chute E, having the slots *d' d'*, the reciprocating fingers *e'*, bail *v*, and crank-shaft *n'*, the whole operating substantially as described.

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

MERRICK E. PERRING.

Witnesses:

B. F. PENNELL,
JOEL BENSON.