

(No Model.)

2 Sheets—Sheet 1.

C. ROEHL.
STRAW CUTTER.

No. 257,388.

Patented May 2, 1882.

Fig. 1.

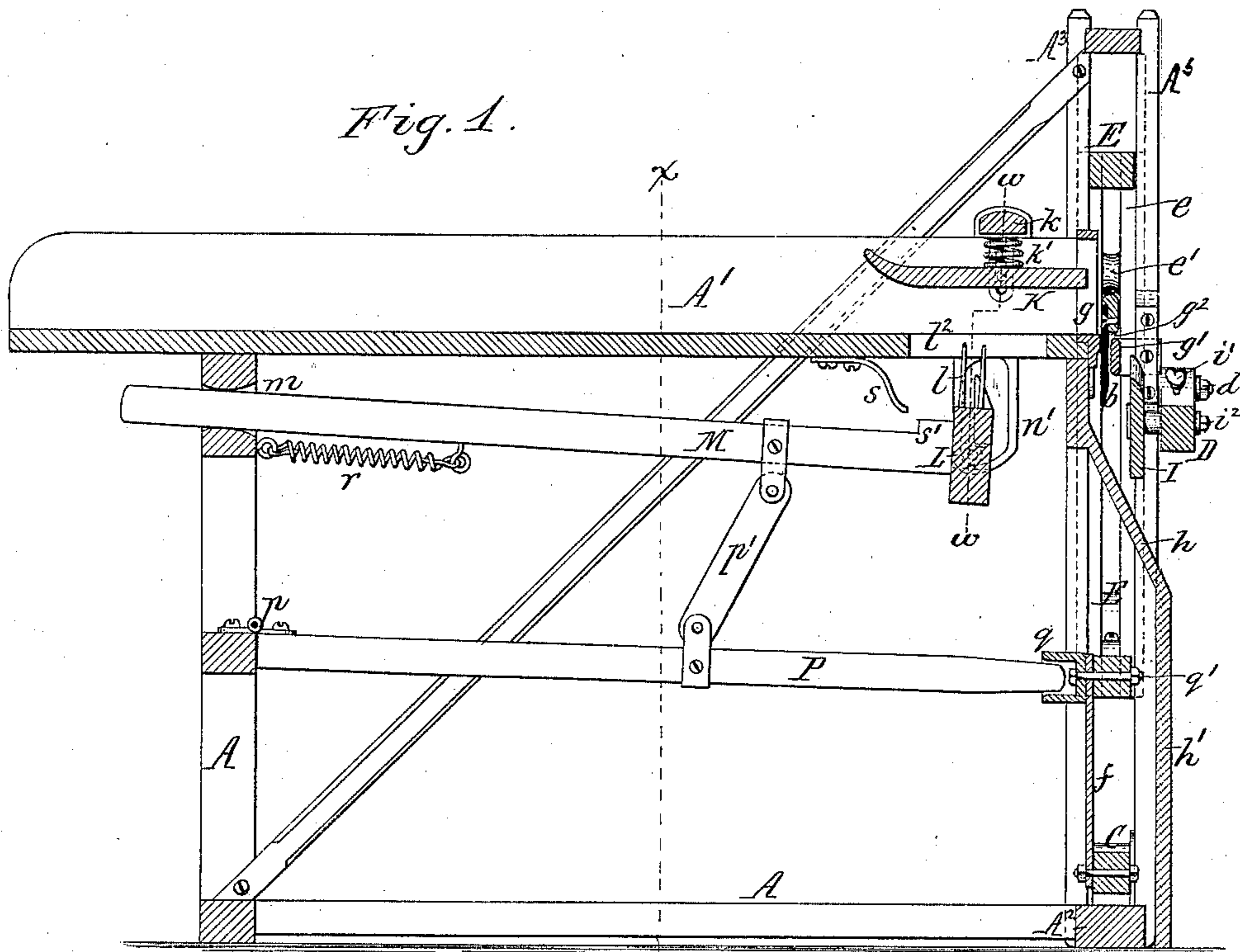
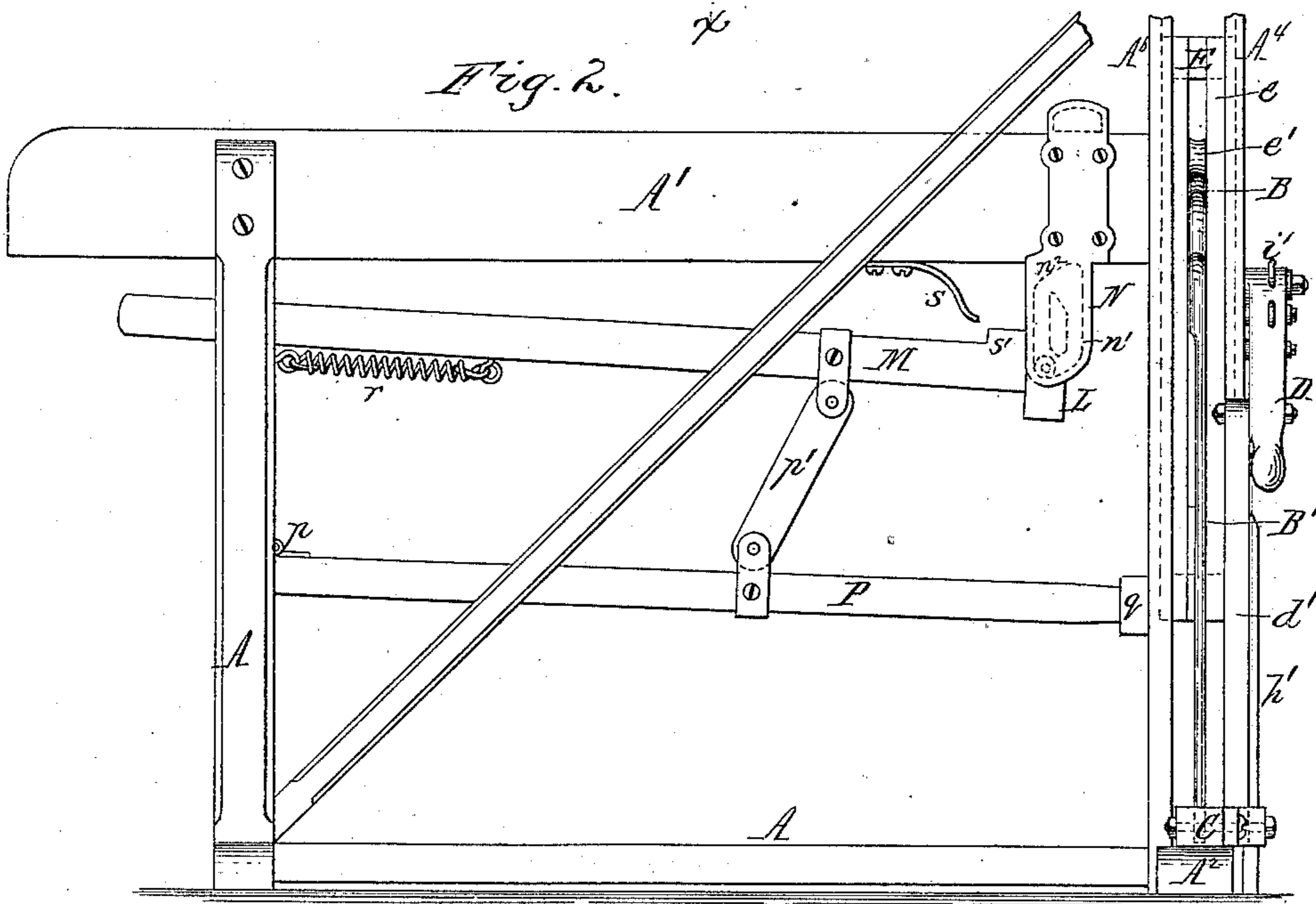


Fig. 2.



Chas. J. Buckheit,
Edw. J. Brady, Witnesses.

Carl Roehl, Inventor
By Wilhelm H. Bomer, Attorneys.

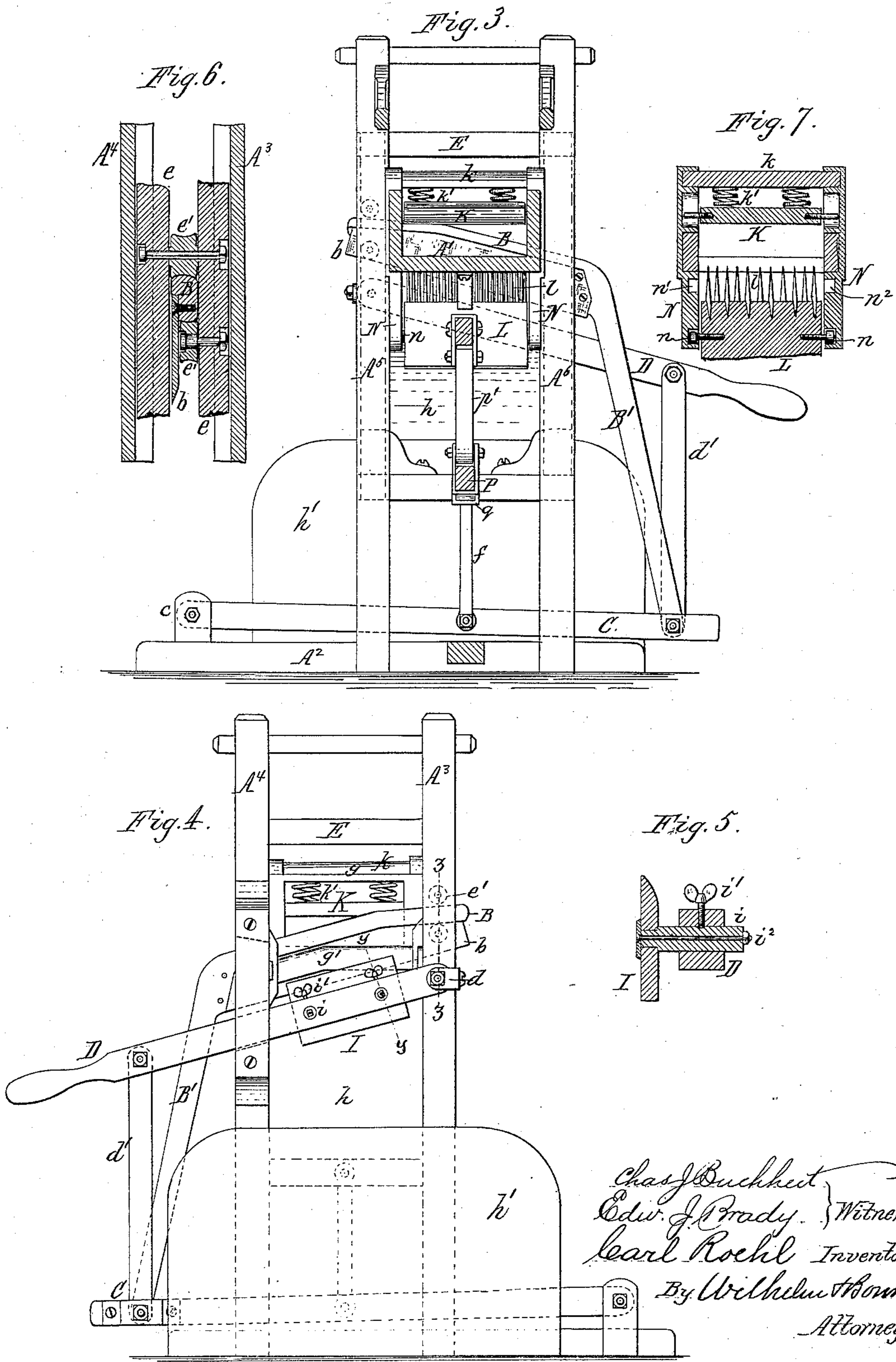
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Chas. Buchheit
Edw. J. Brady } Witnesses
Carl Roehl } Inventor
By Wilhelm Thomeier.
Attorneys.

UNITED STATES PATENT OFFICE.

CARL ROEHL, OF LOCKPORT, NEW YORK, ASSIGNOR OF ONE-HALF TO
WILLIAM S. CAMP, OF SAME PLACE.

STRAW-CUTTER.

SPECIFICATION forming part of Letters Patent No. 257,388, dated May 2, 1882.

Application filed December 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, CARL ROEHL, of Lockport, in the county of Niagara and State of New York, have invented a new and useful Improvement in Straw-Cutters, of which the following is a specification.

This invention relates more particularly to that class of straw-cutters in which the knife moves in a vertical plane; and it has for its object to improve the operation of the cutting and feed mechanism.

My invention consists of the peculiar construction of the cutting and feed mechanism and of the means whereby the feed mechanism is connected with the cutting mechanism, as will be hereinafter fully set forth.

In the accompanying drawings, consisting of two sheets, Figure 1 is a longitudinal section, and Fig. 2 a fragmentary side elevation, of my improved straw-cutter. Fig. 3 is a cross-section in line *x x*, Fig. 1; Fig. 4 is a front elevation of the machine; Fig. 5 is a cross-section, on an enlarged scale, of the adjustable plate, whereby the length of feed is regulated. Fig. 6 is an enlarged vertical section in line *z z*, Fig. 4. Fig. 7 is a cross-section in line *w w*, Fig. 1.

Like letters of reference refer to like parts in the several figures.

A represents the stationary frame of the machine, and A' the open box or trough in which the straw, hay, or other substances to be cut is placed.

b represents the knife, which is attached to a cast-frame, B, constructed with a downwardly-extending arm, B'. The latter is attached with its lower end to a transverse arm, C, which is pivoted to a support, c, on the opposite side of the machine, the support c being attached to the cross-sill A².

D represents the actuating hand-lever, which is pivoted at d to the post A³, and connected near its opposite end by a rod, d', with the arm C at or near the point at which the knife-arm B' is attached to the transverse arm C.

The knife-frame B is guided between the vertical bars e of a frame, E, which slides vertically between the posts A³ A⁴ A⁵ A⁶ at the

head of the machine. The frame E is preferably provided with rollers e', between which the end of the knife-frame B is guided. The frame E is attached to the cross-arm C by a connecting-rod, f, which is located between the front posts of the main frame. The arm B' of the knife follows the movement of the end of the arm C and the frame E receives a shorter reciprocating motion, as it is connected with the arm C, nearer its fulcrum. By this means the knife is pushed forward in the direction of its cutting-edge between the rollers e' e' at the same time that it is elevated and drawn back as it is lowered, whereby a drawing-cut is produced.

g represents a cast rectangular frame, which surrounds the throat or mouth of the trough A', and g' is a metallic cross-bar, which is secured to the front posts of the machine, and extends across the machine in line with the lower horizontal bar of the frame g, a slot, g², being formed between the frame g and the bar g', through which the knife works. The bar g' and the lower part of the frame g support the material to be cut on both sides of the knife and enable the latter to produce a sharp clean cut.

h represents an inclined board, upon which the cut material falls, and h' a vertical board, which forms a continuation of the board h and prevents the cut material from falling rearward under the machine.

I represents an adjustable plate, which is attached to the inner side of the actuating-lever D, and which serves to limit the forward movement of the straw or other material caused by the feed mechanism. The plate I is attached to the lever D by means of sleeves i, which extend through the lever, and which are adjustably held therein by set-screws i'. The sleeves are secured to the plate I by bolts i². When the lever D is raised the plate I assumes a position opposite the mouth of the trough A', and the straw or other material is pushed against the plate I by the feed mechanism.

K is a movable plate, which is arranged in the trough A', and which serves to hold the straw or other material down against the bot-

tom of the trough. The plate K is attached to a cross-piece, *k*, by springs *k'*, which permit the plate to yield.

L represents the cross-head of the feed mechanism, provided on its upper side with pins or prongs *l*, which project upwardly into the trough A' through an opening, *l'*, which extends across the bottom of the trough. The stones, earth, and similar matter contained in the straw and other material fall through this opening, and are thereby prevented from injuring the knife. The cross-head L is attached to the forward end of a lever, M, whose rear end is guided in an opening, *m*. The cross-head carries at each end a stud or pin, preferably provided with a roller, *n*, which engages in a groove, *n'*, having approximately the form of an O, whereby the cross-head receives first a rising motion, then a forward motion, then a falling motion, and then a rearward motion. The grooves *n'* are formed in cast-plates N, which are secured to the sides of the trough A'. The arm M is actuated from the frame E by a lever, P, which is pivoted at *p* to the rear end of the main frame and connected with the arm M by a forwardly-inclined rod, *p'*. The front end of the lever P engages in a cast-socket, *q*, which is attached to the rear side of the frame E at the point where the connecting-rod *f* is attached to the frame E, so that the same bolt *q'* serves to connect both the connecting-rod *f* and the socket *q* to the frame E.

r represents a spiral or other suitable spring, which connects the arm M with the rear part of the main frame, and tends to draw the arm M backward.

s represents a curved spring, which is secured to the under side of the trough A', over the arm M, and which engages against a shoulder, *s'*, on the upper side of the arm M when the latter has been raised. As the arm M is raised the rollers of the cross-head move upward in the vertical rear portions of the grooves *n'* until they reach the upper ends of these grooves, when the arm M comes in contact with the spring *s* and deflects the same. The further upward movement of the lever P increases the forward inclination of the rod *p'* and moves

the cross-head L and the rod M, to which it is attached, forward, thereby causing the rollers of the cross-head to pass over the ridge *n''*, between the two vertical portions of each groove. As the lever P descends the cross-head L descends also, and its rollers move downward in the front portions of the grooves *n'*, and are returned to their rearward position by the reaction of the spring *r*. In the highest position of the cross-head the spring *s* is straightened and bears against the shoulder *s'* of the arm M, and pushes the latter forward and compels the rollers of the cross-head L to enter the front portions of the grooves *n'*. In this manner a four-part feed motion is imparted to the cross-head L, which thereby imparts an intermittent forward motion to the straw or other material in the trough A'.

I claim as my invention—

1. In a straw-cutter, the combination, with the knife *b*, of the frame B, sliding at one end in the reciprocating frame E, and connected at the other end with the swinging arm C, whereby a drawing-cut is imparted to the knife, substantially as set forth.

2. The combination, with a trough A', of the cutter *b*, frame B, provided with arm B', cross-arm C, reciprocating frame E, in which the knife-frame slides, and connecting-rod *f*, whereby the frame E is connected to the arm C, substantially as set forth.

3. The combination, with the trough A', of the cross-head L, provided with studs or rollers *n*, arm M, having shoulder *s'*, grooved plates N, a spring, *r*, tending to draw the arm M backward, and a spring, *s*, whereby the rearward movement of the arm M is prevented when in its highest position, substantially as set forth.

4. The combination, with the arm C, link *f*, and reciprocating frame E, of the cross-head L, arm M, springs *r* *s*, lever P, and connecting-rod *p'*, all arranged to operate substantially as set forth.

CARL ROEHL.

Witnesses:

E. A. MARTIN,
C. H. MACDONALD.