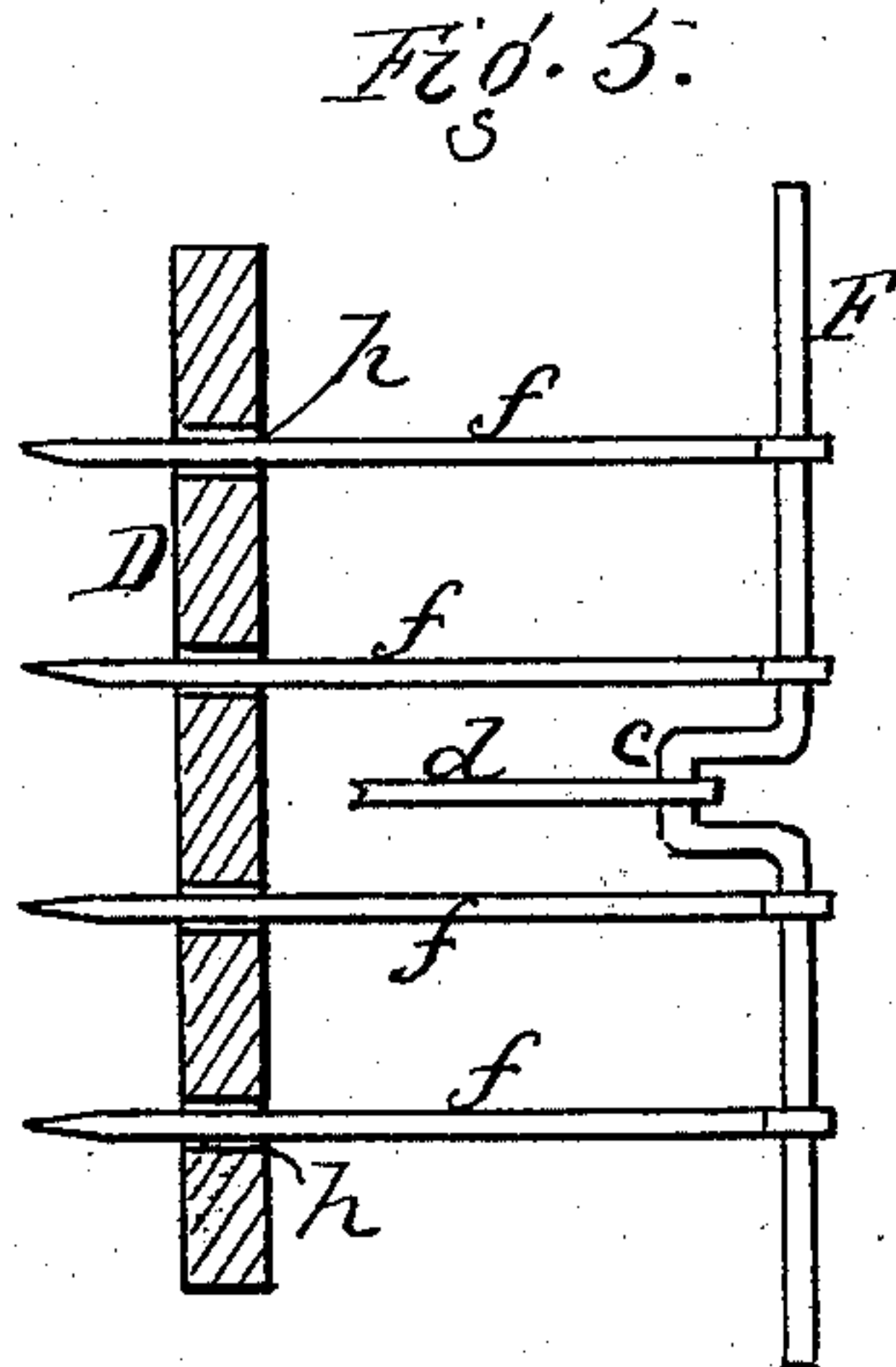
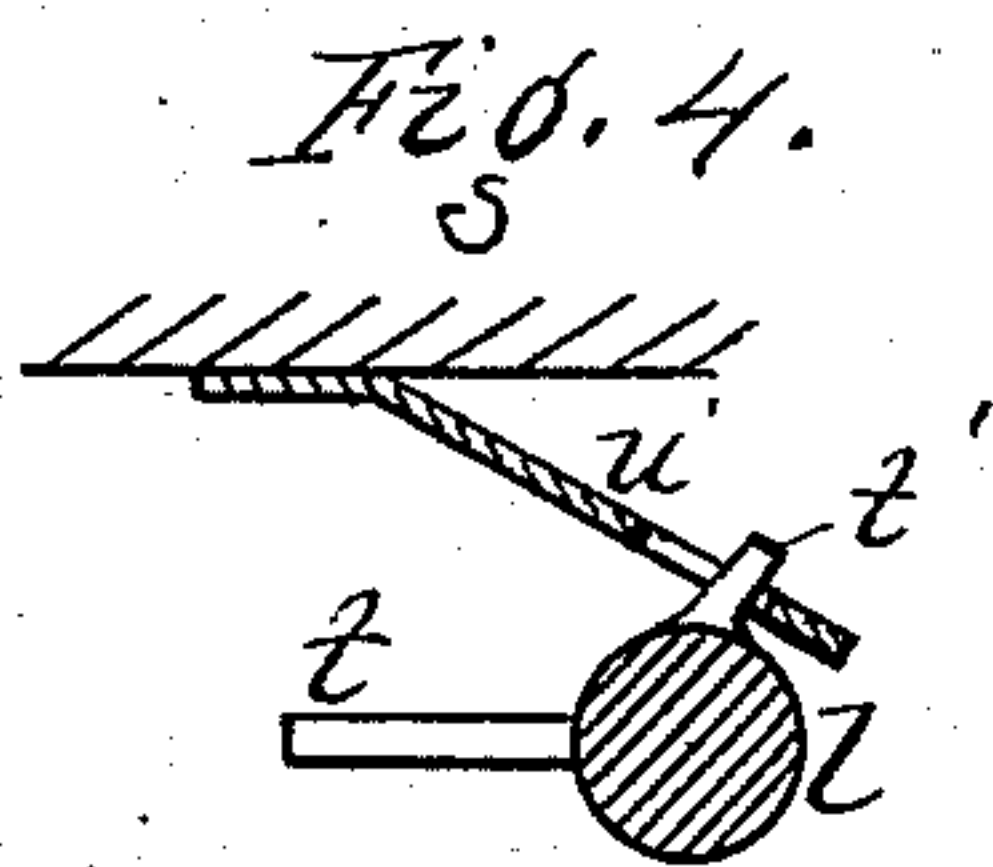
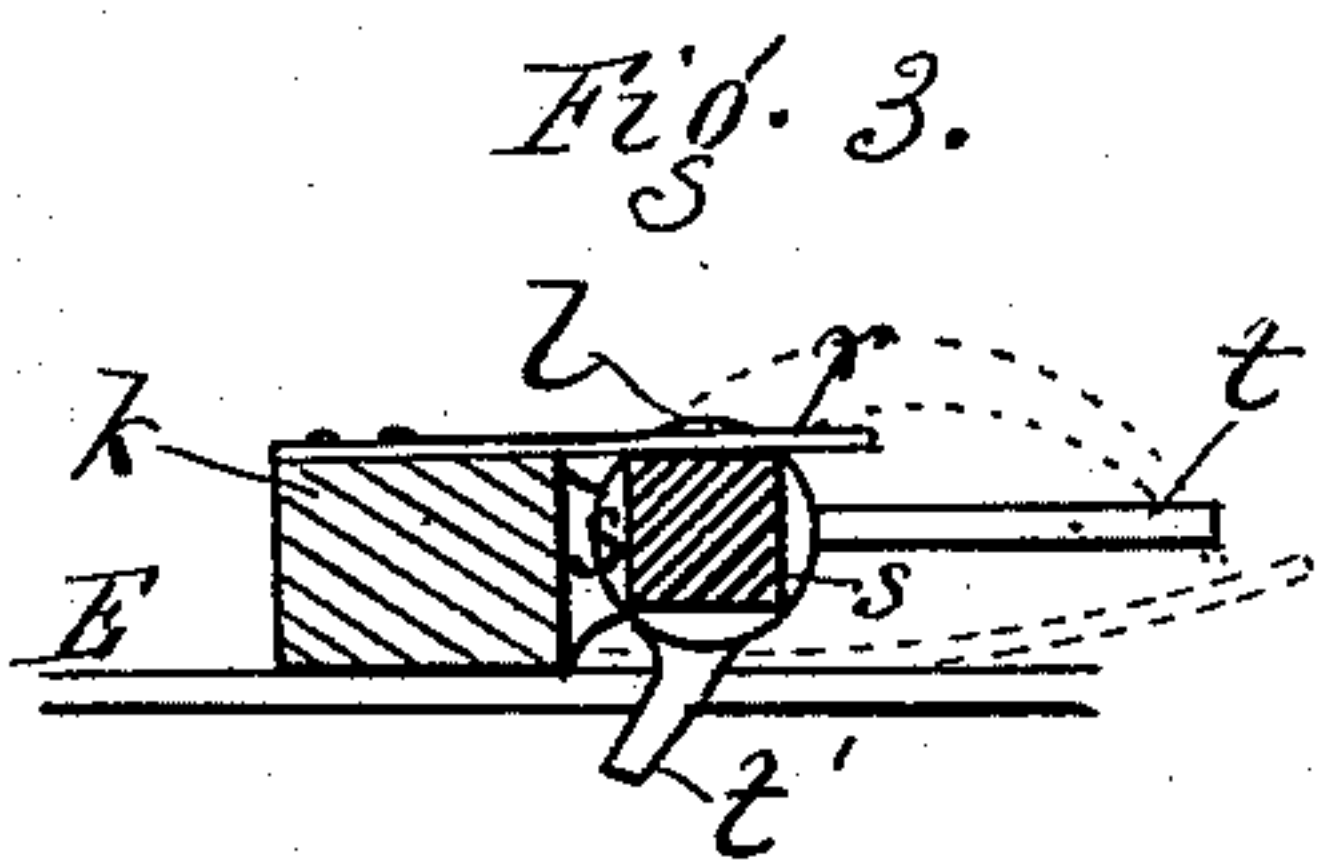
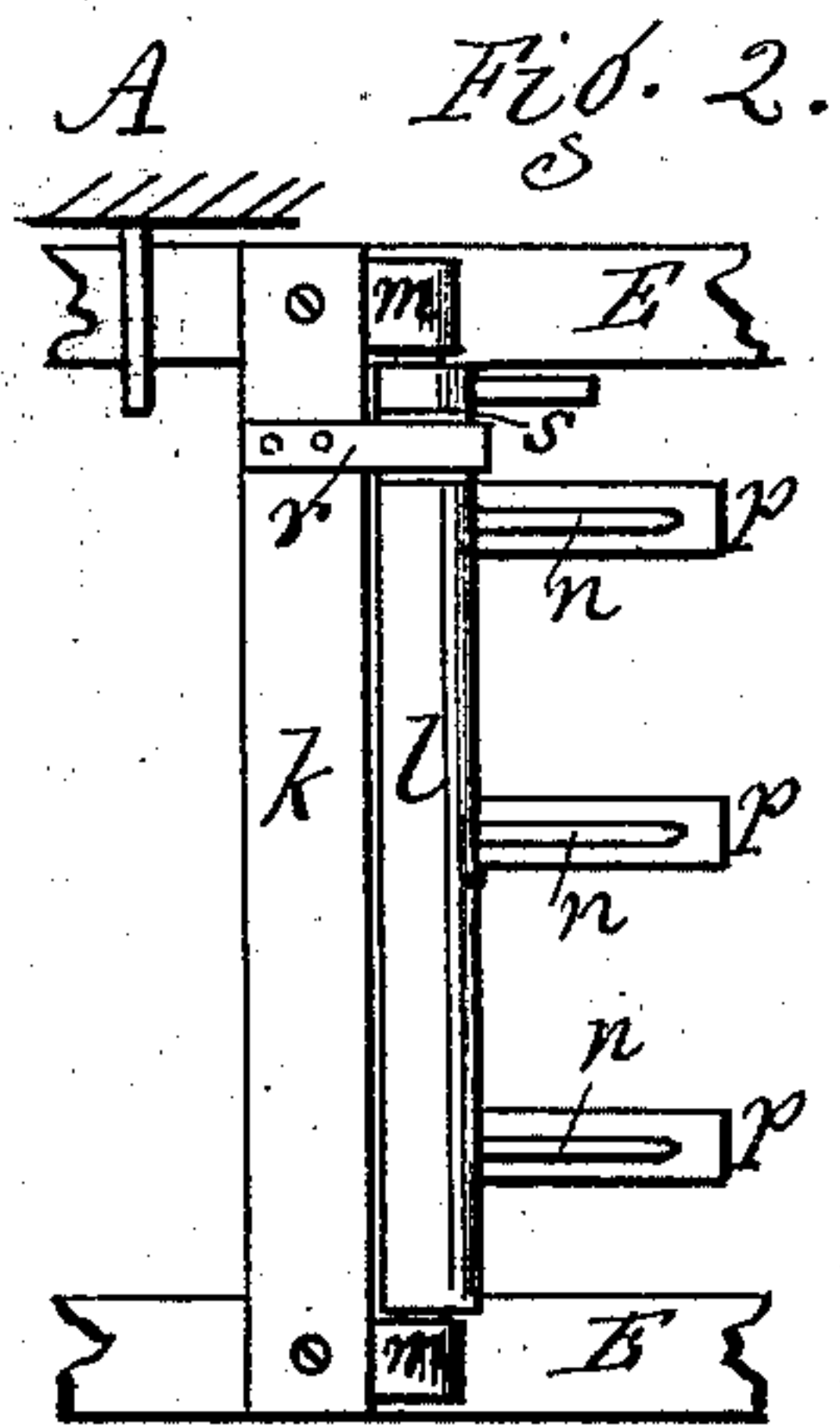
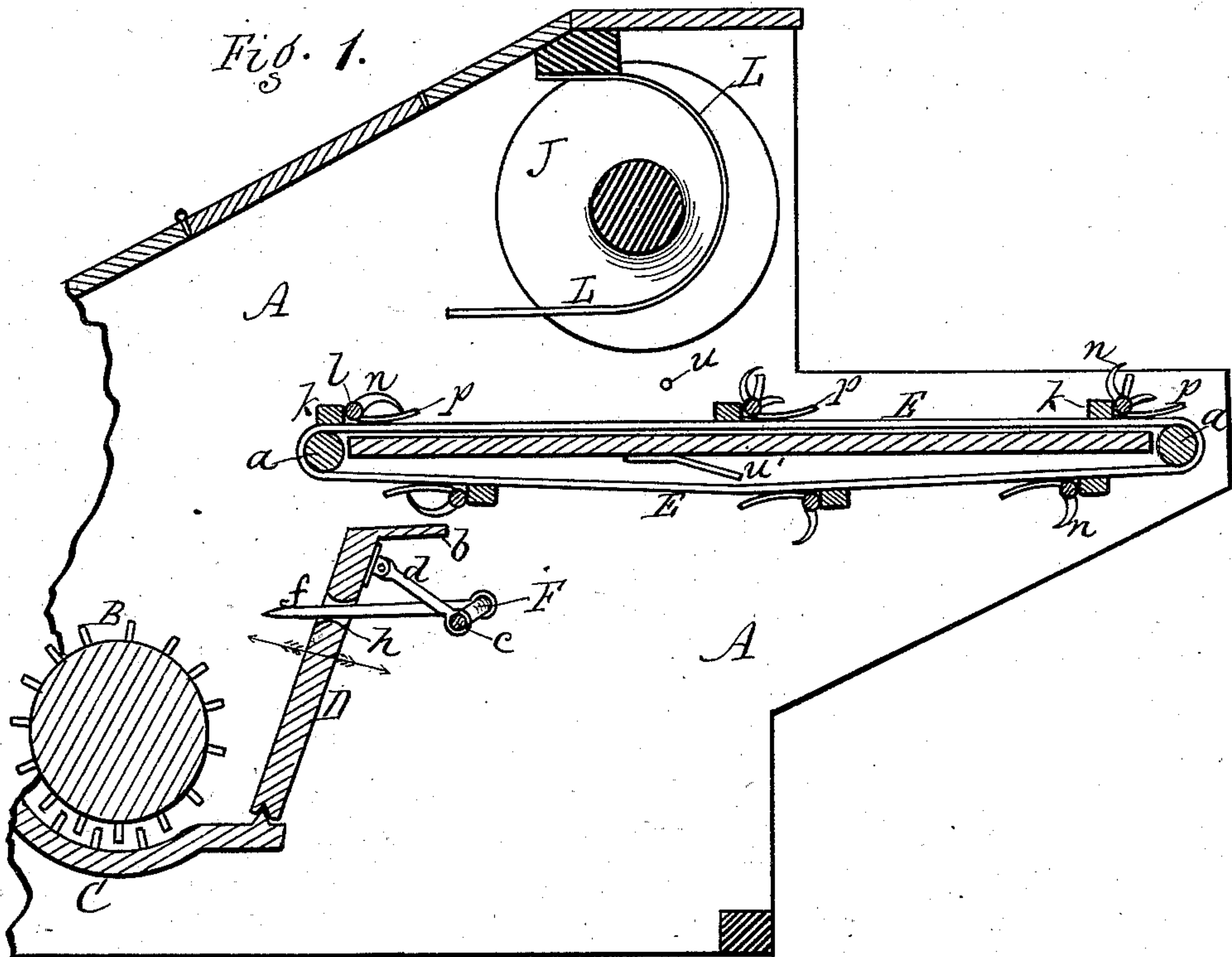


I. H. GREEN.  
 Band Cutter and Feeder for Thrashers.  
 No. 219,463.                      Patented Sept. 9, 1879.



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# UNITED STATES PATENT OFFICE.

IRA H. GREEN, OF CANANDAIGUA, NEW YORK.

## IMPROVEMENT IN BAND-CUTTER AND FEEDER FOR THRASHERS.

Specification forming part of Letters Patent No. **219,463**, dated September 9, 1879; application filed June 28, 1879.

*To all whom it may concern.*

Be it known that I, IRA H. GREEN, of the village of Canandaigua, in the county of Ontario and State of New York, have invented a certain new and useful Improvement in Band-Cutter and Feeder for Thrashing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of the machine. Fig. 2 is a plan of one of the slats of the endless carrier and its connections. Figs. 3 and 4 are cross-sections of the devices for removing the wire bands. Fig. 5 is a plan of the dividers and connecting parts.

My improvement relates to band-cutting attachments for thrashing-machines, in which an endless carrier is used to convey the bundles to the cylinder and band-cutting wheels are employed to cut the bands during their passage over the carrier.

The invention consists in the construction and arrangement hereinafter described, whereby the grain is fed more effectively to the cylinder, and the wire bands, after being cut, are removed from the bundles before reaching the cylinder.

A represents the ordinary framing and casing of the attachment. B is the thrashing-cylinder; and C is the concave.

E is the endless carrier, running around pulleys *a a* at opposite ends. The rear end of the carrier extends some distance back of the machine, to receive the bundles, while the front end rests nearly vertically over the throat of the cylinder. The carrier is horizontal, or nearly so, and the inner end is so elevated as to produce a drop to the grain as it passes to the cylinder, all as shown in the drawings.

The carrier is preferably composed of side bands or straps, connected by cross-slats, and has a table between its lengths, on which the bundles are supported as they are fed along.

D is a swinging or oscillating feed-board, arranged beneath the inner end of the carrier and directly back of the cylinder. It stands nearly vertically, or but slightly inclined backward. In width it occupies the whole cross-

area between the sides of the machine, and in height it comes as near the carrier as possible, allowing free working of the parts. On the top edge is a plate, *b*, projecting backward, and serving to prevent the uncovering of the space under the carrier during the vibrations of the feed-board, and thereby obviating clogging of the parts with the grain. The bottom of the feed-board is preferably forked, or made of V form, resting and turning on a rib of the concave, but, if desired, may be pivoted, hinged, or otherwise arranged to turn as the feed-board is vibrated.

F is a shaft, having a crank, *c*, with which the top of the feed-board is connected by a connecting-rod, *d*; and as said shaft is revolved the feed-board receives a reciprocating vibratory motion forward and back at the top.

If desired, the feed-board may be pivoted in the center instead of at the bottom, so that both the bottom and the top will receive the vibratory motion.

*f f* are a series of dividers, consisting of teeth or bars, attached either to a separate shaft which rests between the sides of the machine, and is made removable, or to the crank-shaft F. The ends of these dividers pass through slots *h h* of the feed-board, and project some little distance beyond, as shown. The ends of the dividers are made pointed. Ordinarily the dividers are stationary, but, if, desired, may be made to vibrate vertically or laterally. These dividers are used in thrashing bundled grain, but are removed in thrashing loose grain.

J J J are the ordinary band-cutting wheels, located on a shaft at a suitable distance above the carrier.

L L are springs, attached at their upper ends to the casing of the machine above the cutter-shaft. They pass over and around the shaft, and are turned beneath the same, to hold the bundle down on the carrier.

*k k* are the cross-slats of the carrier. To these cross-slats, at suitable distance apart, are attached the devices for removing the wire bands from the bundles, as follows: *l* is a shaft extending across the carrier, its journals resting in boxes *m m*, secured to the slat. The shaft turns freely in the boxes.



*n n* are a series of curved teeth forming hooks, which are attached fast to the shaft and stand reversely to the line of motion of the carrier. *p p* are plates attached to the bottom of the slat and extending out under the teeth so far as to allow the points of the teeth to strike down on top of them, or into holes formed in them when thrown down. *r* is a spring connected with the slat, which rests over square sides, *s s*, of the shaft, and acts similarly to the spring in a jack-knife, by holding the shaft in a fixed position when thrown up or down. *t t'* are arms projecting from the shaft, and *u u'* are stops projecting from the inner sides or bottom of the machine, and so relatively arranged that as the arms strike the stops the shaft will be alternately turned, throwing the teeth up and down, as shown in Fig. 1. The teeth are turned upright as they pass on the under side of the machine, and remain so till they have passed under the cutters, when they snap down again.

I do not wish to confine myself to the particular means for operating the shaft as above described, as it is obvious that different means might be used with the same result, the essential thing being to raise the teeth and to cause them to fall again at the proper time.

The operation of the machine is as follows: The teeth *n n* being elevated at the induction end of the machine, the bundle is laid longitudinally on the carrier, with the band just in the rear of the teeth. As the bundle passes under the cutters the wire band is cut, while at the same time, or immediately thereafter, the teeth snap down and hook through the band, and hold the same between themselves and the plates *p p* till they reach the under side, when the teeth open and allow the band to fall off. By this means the wire bands are effectually removed from the grain, and the difficulty heretofore experienced of having the wire pass into the space between the cylinder and concave is avoided. The devices for removing bands may be dispensed with when wire is not used.

As the grain passes over the discharge end of the carrier it falls down endwise to the cylinder, and is spread or divided by the dividers *f f*, which separate the bundle and spread it in a thin sheet, at the same time holding

back on the straw, so that it is not fed too fast to the cylinder and is not drawn too fast through the machine. The feed-board *D* forms a diaphragm or wall, holding the grain up to the cylinder, and by its vibratory motion forces the straw into the cylinder and obviates any back action.

Any desired number of the shafts *l* and teeth *n* may be used.

Having thus described my invention, what I claim as new is—

1. In a band-cutter and feeder for thrashing-machines, the combination, with the cylinder *B* and elevated carrier *E*, of the feed-board *D*, standing upright between said parts and receiving a vibratory motion forward and back, as shown and described, and for the purpose specified.

2. In a band-cutter and feeder for thrashing-machines, the combination of the cylinder *B*, the vibratory feed-board *D*, the dividers *f f*, and the elevated carrier *E*, the feed-board standing upright between the cylinder and carrier, and the dividers projecting through the feed-board, as shown and described, and for the purpose specified.

3. In a band-cutter and feeder for thrashing-machines, the combination, with the endless carrier *E*, of the shaft *l* and teeth *n n*, attached to and moving with the carrier, and provided with suitable mechanism to cause said teeth to automatically close to grasp the wire band, and to again open to release and discharge it, as shown and described, and for the purpose specified.

4. The combination of the shaft *l*, teeth *n n*, spring *r*, arms *t t'*, and stops *u u'*, as shown and described, and for the purpose specified.

5. In combination with the teeth *n n*, the plates *p p*, projecting outward beneath the teeth and serving for the teeth to strike upon to inclose and hold the wire bands, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

IRA H. GREEN.

Witnesses:

J. H. JOHNSON,  
J. C. JACKSON.