

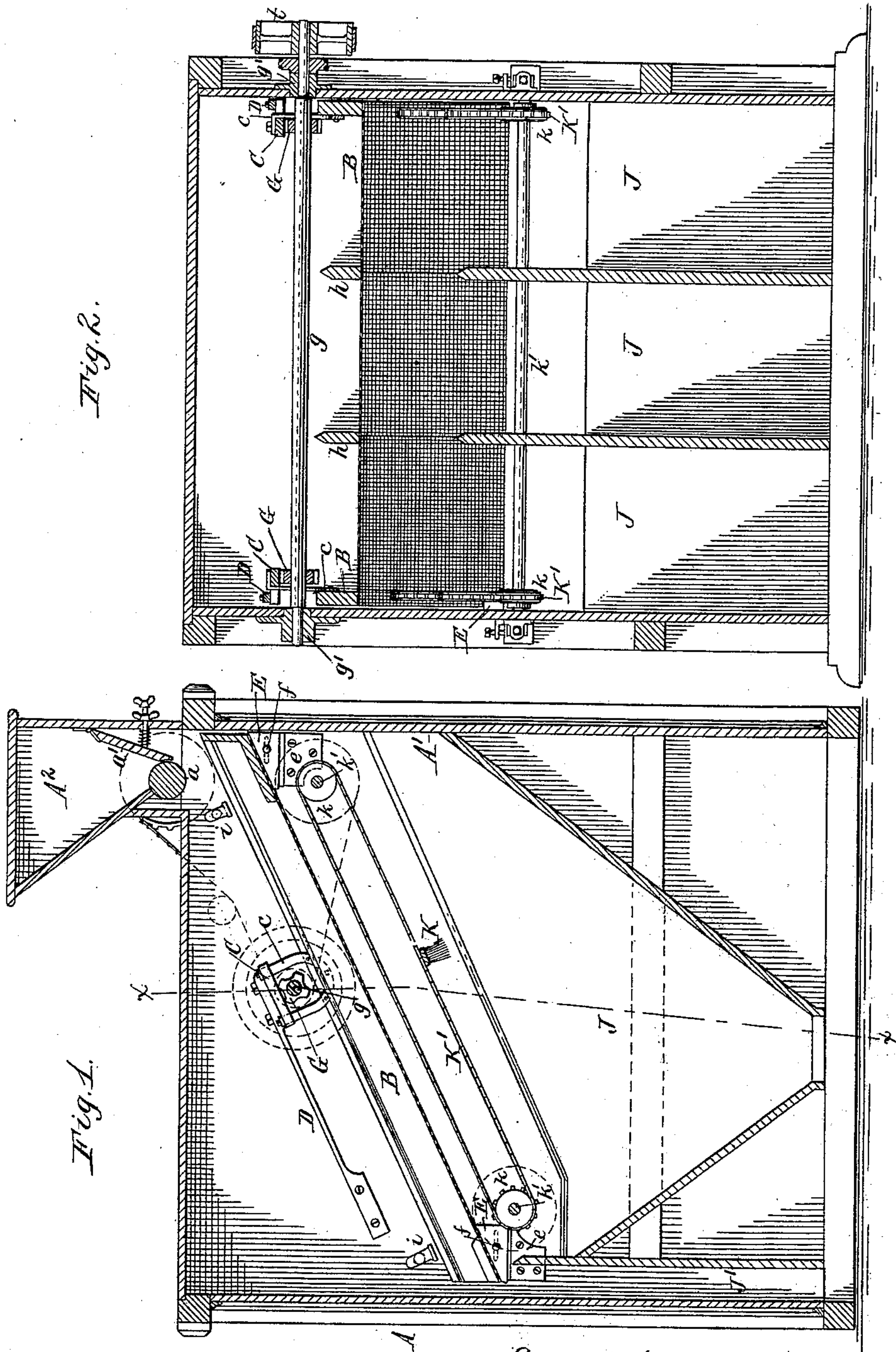
(No Model.)

2 Sheets—Sheet 1.

A. HEINE & N. B. TRASK.
SEPARATING MACHINE.

No. 429,909.

Patented June 10, 1890.



(No Model.)

2 Sheets—Sheet 2.

A. HEINE & N. B. TRASK.
SEPARATING MACHINE.

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Fig. 3.

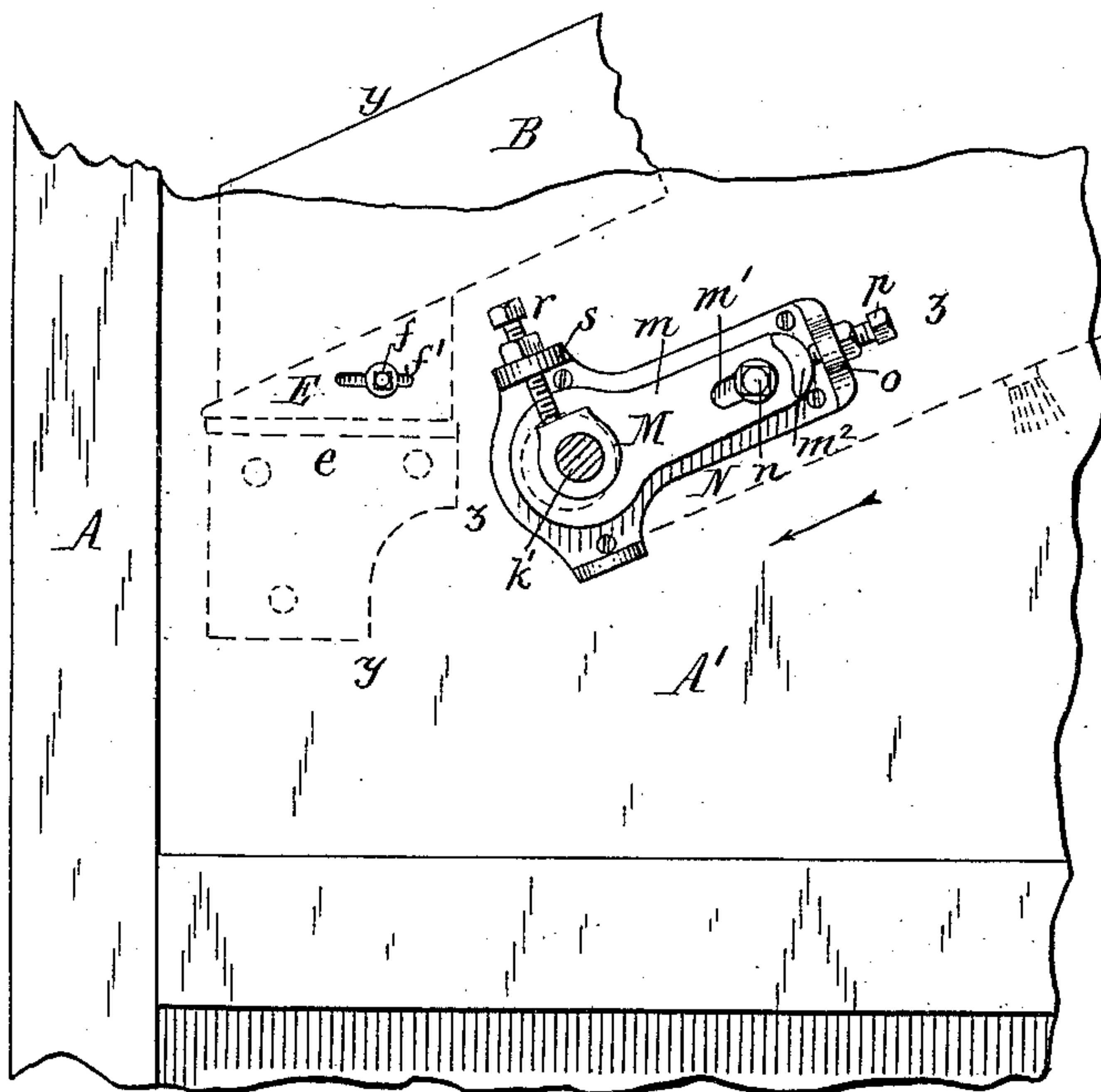


Fig. 4.

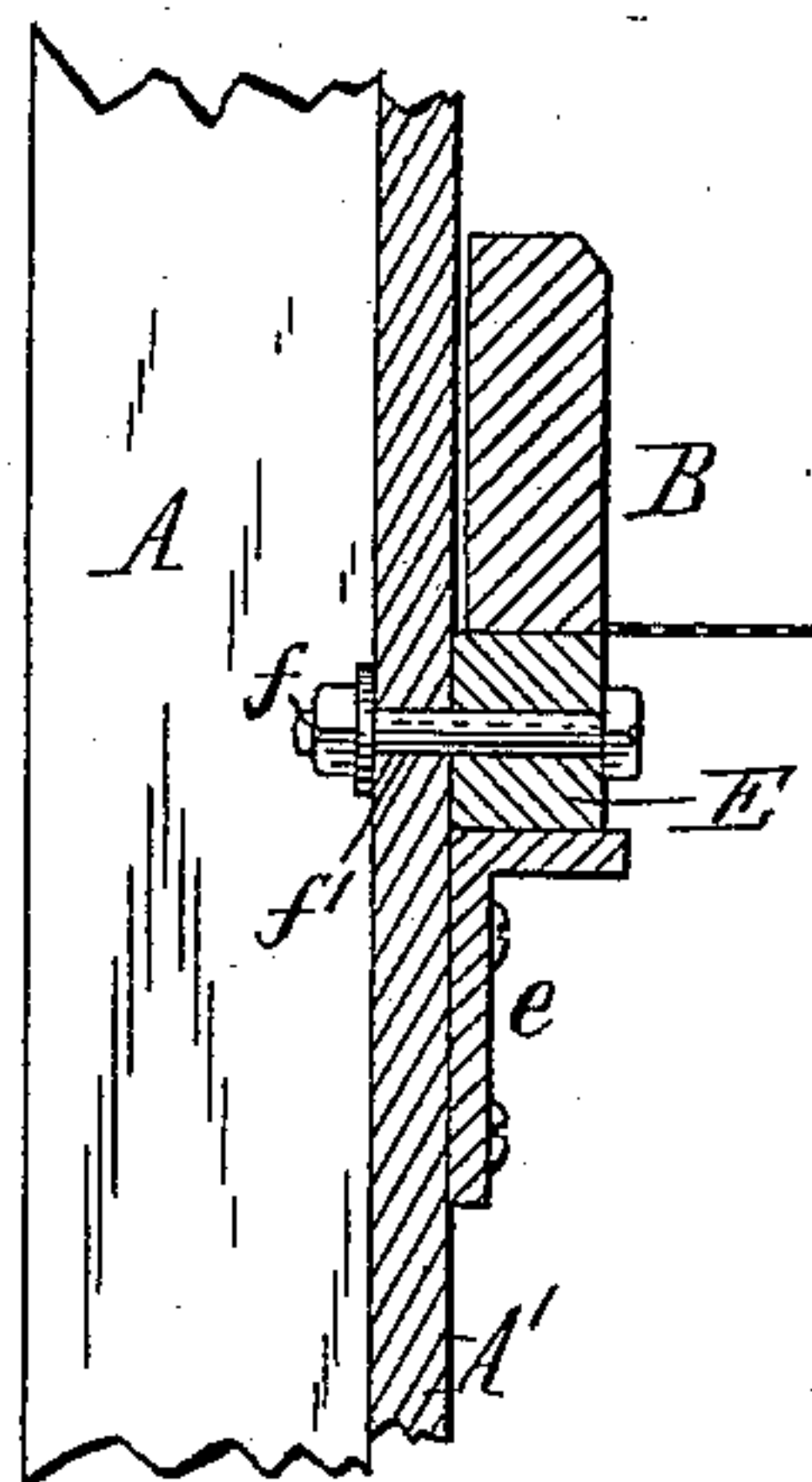


Fig. 5.

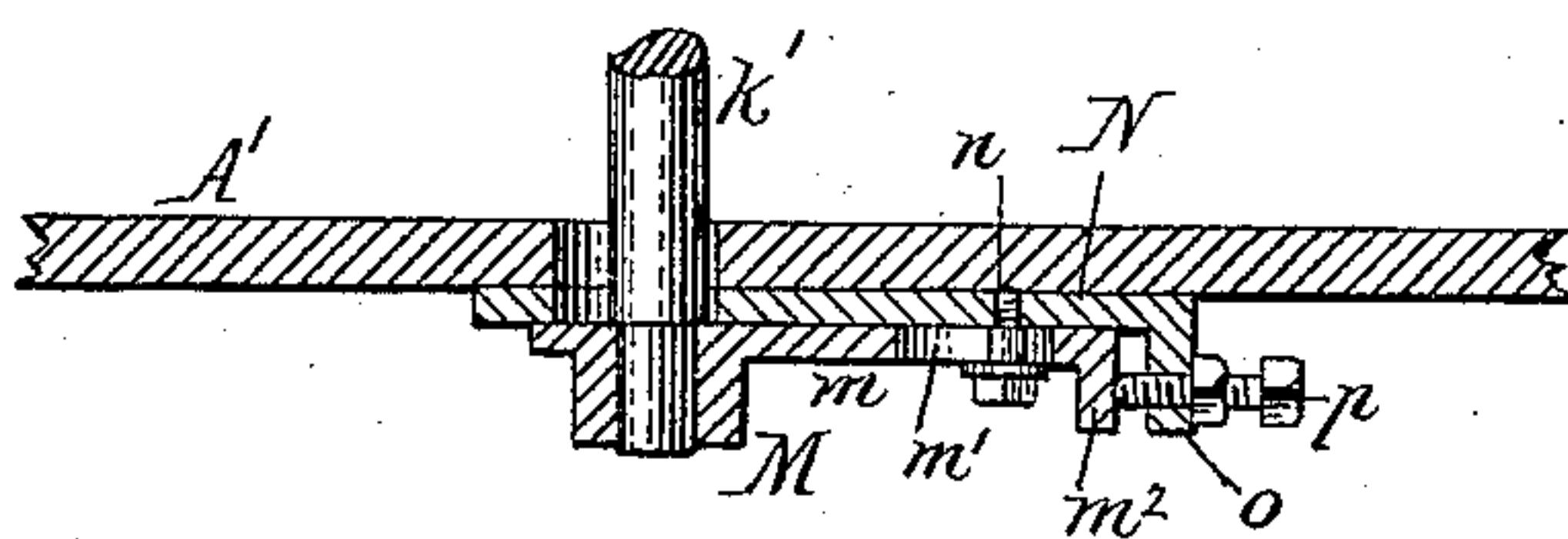
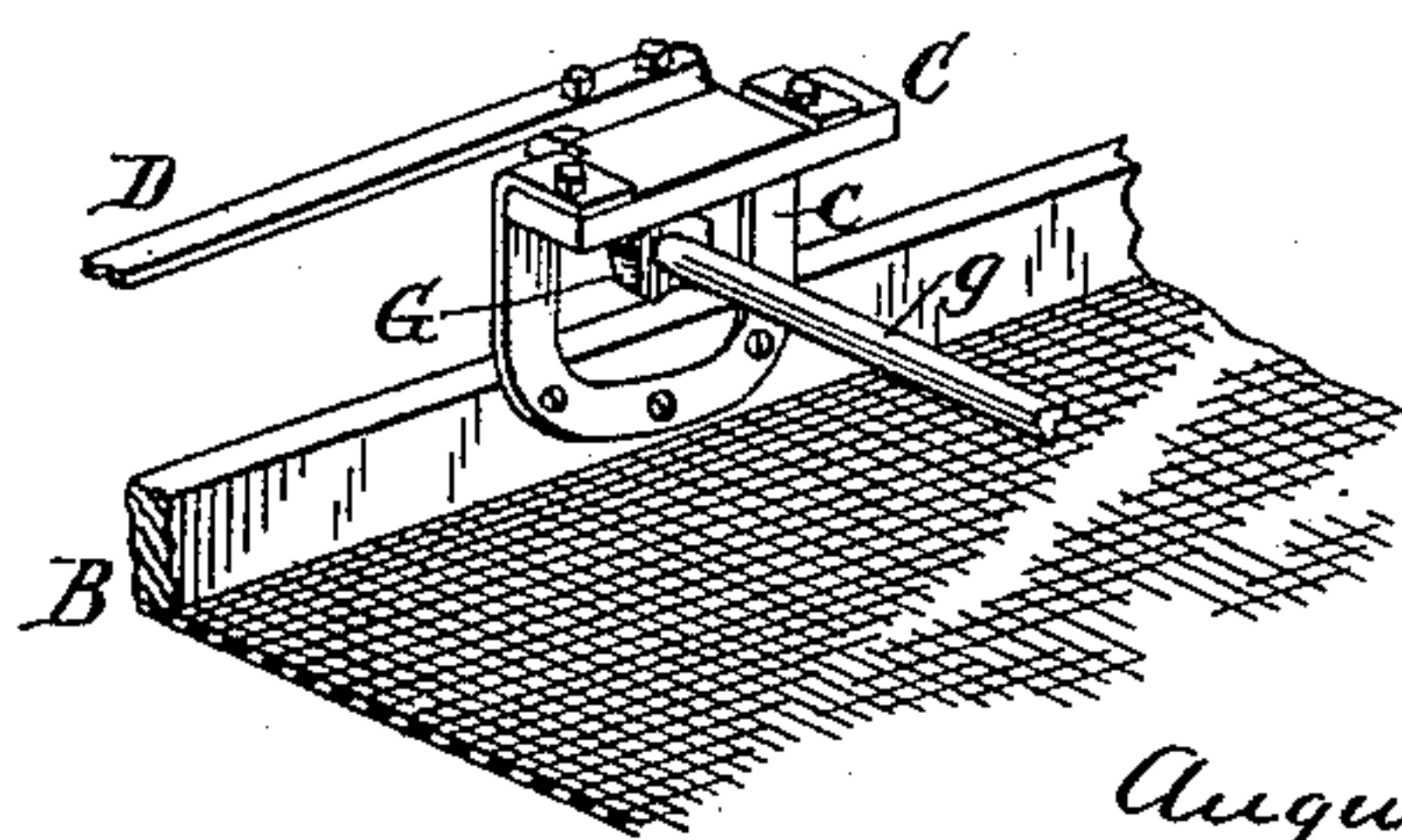


Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

AUGUST HEINE AND NEWTON B. TRASK, OF SILVER CREEK, NEW YORK;
SAID TRASK ASSIGNOR TO SAID HEINE.

SEPARATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 429,909, dated June 10, 1890.

Application filed April 9, 1890. Serial No. 347,212. (No model.)

To all whom it may concern:

Be it known that we, AUGUST HEINE and NEWTON B. TRASK, citizens of the United States, residing at Silver Creek, in the county of Chautauqua and State of New York, have jointly invented new and useful Improvements in Separating-Machines, of which the following is a specification.

This invention relates to that class of separating-machines which are provided with an inclined shaking-screen and which are used principally in flour-mills for separating or scalping the breaks from roller-mills in the gradual reduction of the grain.

The object of our invention is to produce a simple and compact machine of this kind and to support the screen in such manner that the vibration or jar imparted to the screen can be varied or changed on different portions of the screen, whereby a more even and thorough separation of the different grades of material acted upon is obtained.

In the accompanying drawings, consisting of two sheets, Figure 1 is a longitudinal section of our improved machine. Fig. 2 is a vertical cross-section in line *xx*, Fig. 1. Fig. 3 is a fragmentary side elevation, partly in section, of the tail end of the machine on an enlarged scale. Fig. 4 is a vertical cross-section in line *yy*, Fig. 3. Fig. 5 is a cross-section in line *zz*, Fig. 3. Fig. 6 is a fragmentary perspective view of the inclined screen and connecting parts.

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

A represents the stationary frame of the machine, A' the inclosing-case, and A² the feed-hopper secured to the upper portion of the stationary frame and opening into the case, and provided with the usual feed-roll *a* and pivoted feed-gate *a'*.

B represents the inclined screen, arranged in the case A' with the upper end below the feed-hopper.

C represents blocks or plates arranged on each side of the screen, preferably near the center thereof, and supported by U-shaped brackets or frames *c*, secured to the side frames of the screen. The upper ends of the brackets *c* project above the side frames of the

screen and are bent at right angles with the vertical arms of the brackets, and the blocks or plates C are secured to these upper bent ends above the screen.

D represents flexible arms having their inner ends secured to the plates C and their outer ends to the inner side walls of the case.

E represents blocks or wedges supported upon brackets *e* arranged under the four corners of the screen and secured to the inner walls of the case. The screen is supported at its four corners upon the blocks or wedges E, and the latter are adjustably secured to the side walls of the case by bolts *f*, which extend through elongated slots *f'* formed in the casing. The heads of the bolts *f* are arranged on the outside of the casing, which permits the blocks to be adjusted on the brackets from the outside of the machine.

G represents rotating cams mounted upon a transverse horizontal shaft *g*, arranged underneath the plates C and above the screen and supported in bearings *g'*, secured to the side walls of the case. The cams G are arranged near opposite ends of the shaft and in close contact with the under side of the plates C of the screen, so that as the shaft *g* is rotated the cams will strike the under side of the plates C and elevate or lift the screen. The flexible arms D are deflected by the upward movement of the screen and cause the screen to descend or drop at the end of every upward movement of the screen.

The inclined wedges E permit the screen to be readily adjusted, so as to increase or reduce the distance between the under side of the plates C and the cams and permit the screen to be vibrated with a greater or less jar, as may be necessary to obtain a more complete and even separation of the material flowing over the screen.

The screen is preferably divided lengthwise into several sections by longitudinal ribs *h*, and the several sections are provided with cloth of different degrees of fineness to accommodate different grades of material.

By supporting the screen at its four corners by means of the adjustable blocks or wedges each end or corner of the screen can be raised or lowered independently and a greater or less

inclination and jar can be given to the screen on one side than upon the other. This construction enables a finer grade of material to be separated upon one section of the screen at the same time that a coarser grade of material is being separated upon another section of the screen and permits the screen to be adjusted to obtain an even flow and complete separation of the different grades of material acted upon.

i represents stops secured to the inner side walls of the case and projecting over the side frames of the screen for limiting the upward movement of the screen and preventing an excessive deflection of the flexible arms.

The material which passes through the screen falls into hoppers J, arranged below the screen, and the tailings are collected in spouts J'.

The screen may be kept clear by means of a traveling brush K, which is operated by endless chains or belts K', running over sprocket-wheels k , secured to transverse shafts k' . The shaft carrying the lower sprocket-wheels is journaled in movable bearings M, whereby any slack in the chains or belts can be readily taken up and the brush held in contact with the under side of the screen.

The movable bearings M are each provided with an arm or extension m , having an elongated slot m' and a projecting lug or shoulder m^2 , formed on the under side of the arm. The bearings M are each secured to a stationary plate N, which is fastened to the outer side of the case and is provided with an elongated opening arranged in line with the bearing for the passage of the shaft. The plate N is provided with a screw-bolt n , which passes through the elongated slot m' in the arm or extension m , and with a threaded lug o , carrying a set-screw p , which bears against the shoulder or lug m^2 on the arm m . The slot m' and set-screw p are arranged parallel or in line with the belt, so that by loosening the bolt n and tightening the set-screw p the bearing is adjusted and the belt tightened. The bearing M is held from moving vertically by a set-screw r engaging in a threaded lug s , formed in the plate N and bearing against a flat face formed on one side of the bearing. The set-screw r and lug s are arranged on that side of the bearing against which the latter is drawn by the movement of the belts or chains.

The cam-shaft g is driven by an endless belt running over a pulley t , and the traveling brush and feed-roller are driven from the shaft g by an endless chain running over sprocket-wheels mounted on the respective shafts.

We claim as our invention—

1. The combination, with the inclined screen and the rotating cams whereby the screen is actuated, of independently-adjustable wedges which support the corners of the screen and whereby each corner can be raised or lowered, substantially as set forth.

2. The combination, with the inclined screen and the rotating cams whereby the screen is actuated, of supporting-wedges arranged underneath the screen near the corners thereof, and each made independently adjustable lengthwise of the screen, substantially as set forth.

3. The combination, with the stationary frame, of an inclined screen-frame provided on opposite sides with a board or plate arranged above the screen-frame, flexible arms connecting the screen-frame with the stationary frame, rotating cams adapted to strike the under side of the plates for jarring the screen, brackets secured to the stationary frame below the screen-frame, and wedges or inclined blocks adjustably secured to the stationary frame and arranged between the brackets and the under side of the screen-frame, substantially as set forth.

4. The combination, with the screen, the cleaner belt or chain, and its shaft and wheels, of adjustable bearings, each composed of a movable bearing proper M, provided with a longitudinal arm or plate m , and a stationary plate N, on which the bearing M is adjustable and which is provided with an adjusting-screw p , arranged lengthwise of the belt or chain, and whereby the bearing is moved in the direction in which the belt or chain is tightened, and an adjusting-screw r , which is arranged at right angles to the belt or chain and which holds the movable bearing M against the pull of the belt or chain, substantially as set forth.

Witness our hands this 28th day of January, 1890.

AUGUST HEINE.
NEWTON B. TRASK.

Witnesses:

J. D. MERRITT,
H. W. ALLEN.