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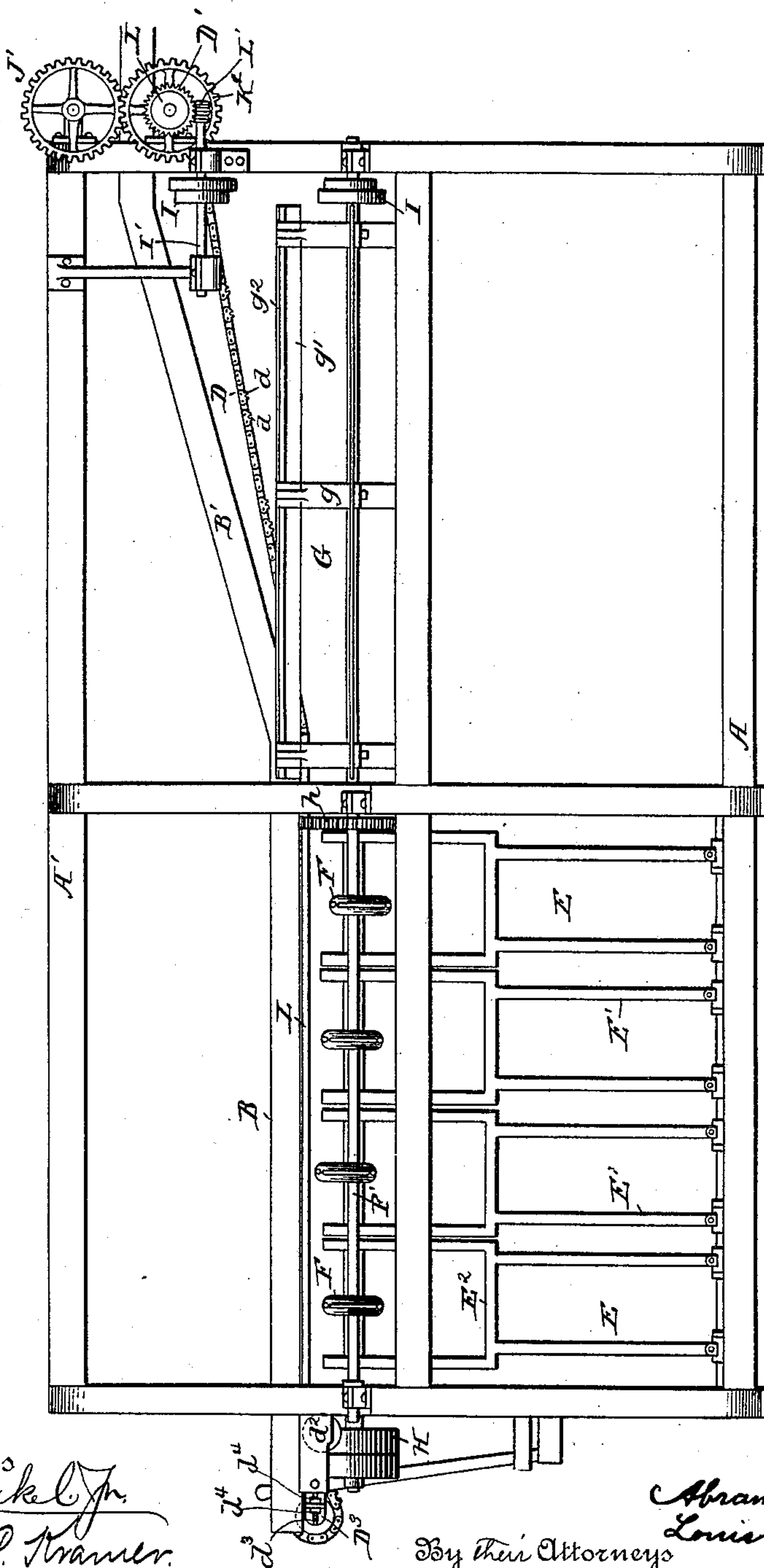
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A. & L. L. BENTLEY.
BRAKING AND SCUTCHING MACHINE.

No. 428,663.

Patented May 27, 1890.

Fig. 1.



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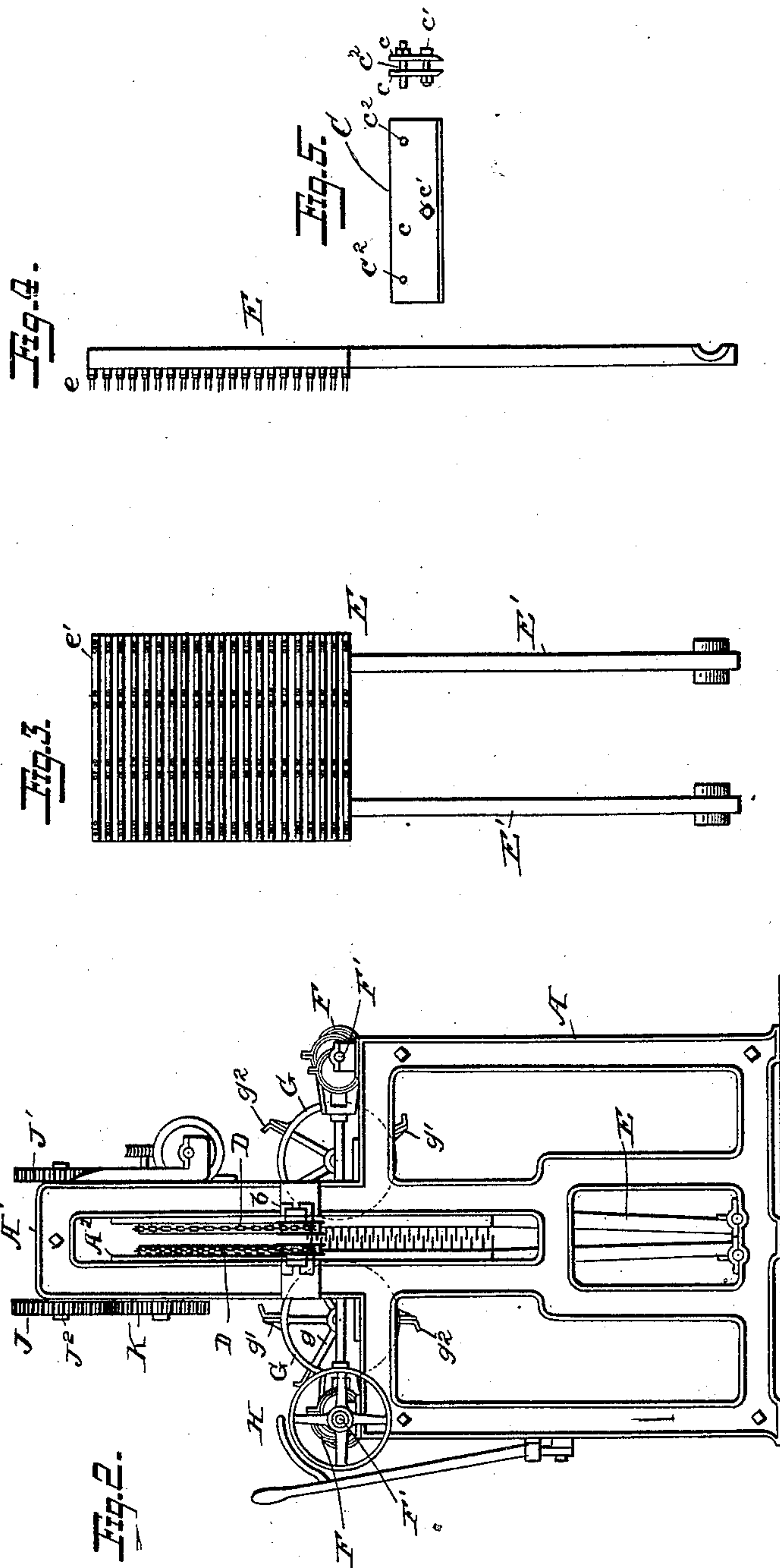
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UNITED STATES PATENT OFFICE.

ABRAM BENTLEY AND LOUIS L. BENTLEY, OF NEW BRIGHTON, PENNSYLVANIA.

BRAKING AND SCUTCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 428,663, dated May 27, 1890.

Application filed October 1, 1889. Serial No. 325,650. (No model.)

To all whom it may concern:

Be it known that we, ABRAM BENTLEY and LOUIS L. BENTLEY, citizens of the United States, and residents of New Brighton, Beaver county, Pennsylvania, have invented certain new and useful Improvements in Braking and Scutching Machines, of which the following is a specification.

Our invention relates to machines for braking and scutching flax, jute, and similar fibers, and has for its object to provide a machine by means of which the fibers may be subjected to the braking and scutching treatment in one continuous operation and in such a manner as to leave the fiber in good condition for the subsequent uses.

To these ends our invention consists in a combined brake and scutching machine, constructed substantially as hereinafter pointed out.

Referring to the drawings, Figure 1 is a side view of a machine embodying our invention. Fig. 2 is an end view thereof. Figs. 3 and 4 are respectively front and edge views of one form of brake device, and Fig. 5 shows a form of clamp which we prefer to use.

Referring to the drawings, A is the frame of the machine, which may be of any desired construction; but we have shown it as being substantially rectangular in shape and provided with an upward extension or yoke A', forming an opening or passage A² lengthwise through the machine. Secured on both sides of this opening are the plates or bars B, which form the slideway, and these are preferably arranged in a horizontal plane in the first part of the machine, where the braking is done, while at the rear part of the machine, where the scutching is done, the slideway B' is inclined upward. This slideway can be of any desired form and configuration, but preferably is composed of angle-pieces b, as of iron, arranged to form a horizontal groove or passage to receive the supports or extensions of the clamp C. This clamp may be of any ordinary form, but we have found that illustrated in the drawings to be effective and well adapted for this purpose; and this consists of two plates cc, between which the flax or other material is placed and having a screw-bolt c'

to secure the parts together to hold the material. Extending through the upper portions of the plates are projections or bolts c², which form bearings or supports for the clamp and travel in the grooved or recessed way. We have shown two projections or pins on each side of the clamp, as by this construction the clamp will ride freely and smoothly through the grooves in the slideway and maintain the material being operated upon in proper relations to the brake and scutching devices.

In order that the clamp with its material may pass through the machine at a proper rate, we provide some means for propelling the clamps, and we have shown chains D, arranged in the grooves of the way and each passing over a drum or roller D', back under the slideway over a roller d², and thence around a roller D³ and into the slideway again. These chains may be of any desired construction suitable to propel the clamps through the slideway; but we have shown a portion of the links, as d, formed with notches arranged to engage and support the projections or pins c² of the clamp, and it will be evident that it is only necessary to place the clamp in the slideway with the pins resting in the notches when the weight of the material and clamp, together with the force of the device operating upon the material, will tend to keep the clamp securely in place.

The roller D³ is mounted in adjustable bearings, so as to maintain a proper tension of the chain. These bearings may be of any well-known and usual construction, and, as shown, each bearing has a lug through which passes a set-screw d³, and on both sides of the said lug are nuts working on the screw d³. By means of these nuts and screws the adjustment of the roller D³ is effected.

The flax or other material is preferably clamped about midway of its length and the clamps placed in position on the chains with one portion of the material hanging down below the slideway and the other portion extending above the slideway, and in this way it is drawn through the machine by the chains, being subjected to the brake and scutching operations hereinafter described. When it reaches the rear of the machine, it may be re-

turned to the front end by means of a slide-
way or inclined plane arranged on the side
of the machine (and not shown) in the usual
way, or when two machines are used together
5 they can be arranged end for end, so that the
clamp and its contained material may be re-
moved from the rear end of one machine and
immediately placed upon the chains in the
front end of the adjacent machine. It will
10 be understood that after the braking and
scutching is accomplished on one end of the
fibers the same operation is performed on
the other end of the same fibers.

Mounted at each side of the slideway is a
15 series of vibrating frames E, shown as piv-
oted at the bottom of the frame, and while
these may be of various constructions we pre-
fer to make them with the two arms or legs
E', supporting an upper frame-work E², and
20 this upper frame-work carries the braking
devices. These devices may be in the form
of a series of pins e, Fig. 4, or longitudinal
gill-sticks e', and these may have straight or
waved edges, as desired, depending upon the
25 character of material being treated. These
frames E, four of which are shown on each
side of the slideway, are arranged to be rap-
idly vibrated back and forth, and we have
shown cranks or eccentrics F, mounted on the
30 shaft F' and arranged, preferably, so that the
frames on one side will reach the extremes of
their movement backward or forward succes-
sively, while the frames directly opposite each
other will reach the extremes of their forward
35 movement simultaneously, the pins or gill-
sticks being arranged in the complementary
frames to interlock, so that every portion of
the fiber will be subjected to their action. By
thus arranging each complementary pair so
40 that the pins or gills will interlock, and by
arranging the successive pairs with their pins
or sticks at a slightly different elevation, all
portions of the flax or other material are thor-
oughly perforated or disintegrated by the
45 time it has passed through the four pairs of
frames, although of course we do not limit
ourselves to that particular number of frames,
more or less being used, according to the char-
acter of the work being performed. After the
50 flax has been submitted to the action of the
brake mechanism it passes to the scutching-
rollers G, which are shown as mounted on
either side of the way and consisting of a se-
ries of arms g, mounted on a shaft support-
55 ing bars g' and carrying the beaters g² at their
outer ends, and these beaters may be of any
usual or desired form, and the rollers are pref-
erably arranged so that the respective bars g'
will interlock with the similar bars of the cor-
60 responding roller.

It will be understood that the slideway B'
is inclined in that portion of the machine ad-
jacent to the scutching-rollers, and this is an
important feature of our invention, as by this
65 means the scutching rollers or beaters com-
mence to act upon the flax or other material
at a point near the clamp, and as the clamps

progress through the machine the material is
gradually raised and the flax is beaten or
scutched from the center of the mass outward 70
toward its end, and in this way we are en-
abled to thoroughly and perfectly clean the
fiber without unduly breaking or injuring it,
and the cleaning is effected by a progressive
action from the center to the end of the mass. 75

The various parts of the machine are driven
by suitable gearing, and we have shown the
pulley II receiving power from any suit-
able source, and this is shown mounted upon
one of the shafts F', carrying the cranks or 80
eccentrics and connected by suitable gears h
to the other shaft F' and the shafts of the
scutching-rollers G. Power is transmitted
from the shaft of one of the rollers G to the
shaft I', carrying a worm I', by means of a 85
belt on the pulleys I, thereby operating a
worm-wheel L, secured to the drum D', and
in order to allow free passage of the flax
through the machine and transmit the motion
to the other chain on the opposite side of the 90
way we provide a gear-wheel K, also con-
nected to the drum, which engages with the
gear-wheel J on the shaft J², mounted in the
upper portion of the extension A', and an-
other gear-wheel J', mounted on said shaft J², 95
connects with the gear-wheel K' to move the
drum carrying the chain on that side of the
frame in a manner well understood, so that
both chains will travel at a uniform speed.
As the chains return to the forward portion 100
of the machine outside of the slideway, we
preferably provide a plate or support L to
hold them out of the way of the vibrating
frames, although we have found that this may
be dispensed with in some instances, the guide- 105
pulleys d² operating to maintain the chains
in proper position.

The operation of the machine will be un-
derstood from the above description, and it
will be seen that the flax or other material 110
held by the clamps is drawn progressively
through the machine and the lower portion
thoroughly subjected to the braking treat-
ment as the vibrating frames operate upon
both sides of the mass, and then as it reaches 115
the scutching device the mass is cleaned pro-
gressively from the center toward the ends as
it is carried up the inclined portion of the
slideway.

While we have described what we consider 120
to be the best embodiment of our invention,
we do not limit ourselves to the precise ar-
rangement of parts indicated, as they may
be varied by those skilled in the art without
departing from the spirit of our invention, 125
and portions of our invention may be used
either alone or in combination with other
equivalent mechanisms; but,

Having thus described our invention, what
we claim is—

1. The combination of the vibrating brak-
ing-frames, the rotary scutching-rollers, and
a slideway arranged to convey the material
past the frames and rollers, the slide being 130

inclined upward between the scutching-rollers, substantially as described.

2. The combination of the vibrating braking-frames, the rotary scutching-rollers, and
5 an inclined slideway arranged to guide the material upward between the scutching-rollers, the vibrating frames being provided with pins arranged to interlock with each other, substantially as described.

10 3. The combination, with the slideway, of the frames arranged to vibrate back and forth each side of the slide, cranks or eccentrics for vibrating the same arranged to move the frames forward progressively, the frames being
15 provided with pins or gills interlocking with each other, substantially as described.

4. The frame having an upward extension forming a passage for the material, in combination with vibrating brake-frames, rotary scutching-rollers, and a slideway having the
20 portion between the scutching-rollers inclined, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ABRAM BENTLEY.
LOUIS L. BENTLEY.

Witnesses:

E. AUTERWITH,
C. H. CORBUS.