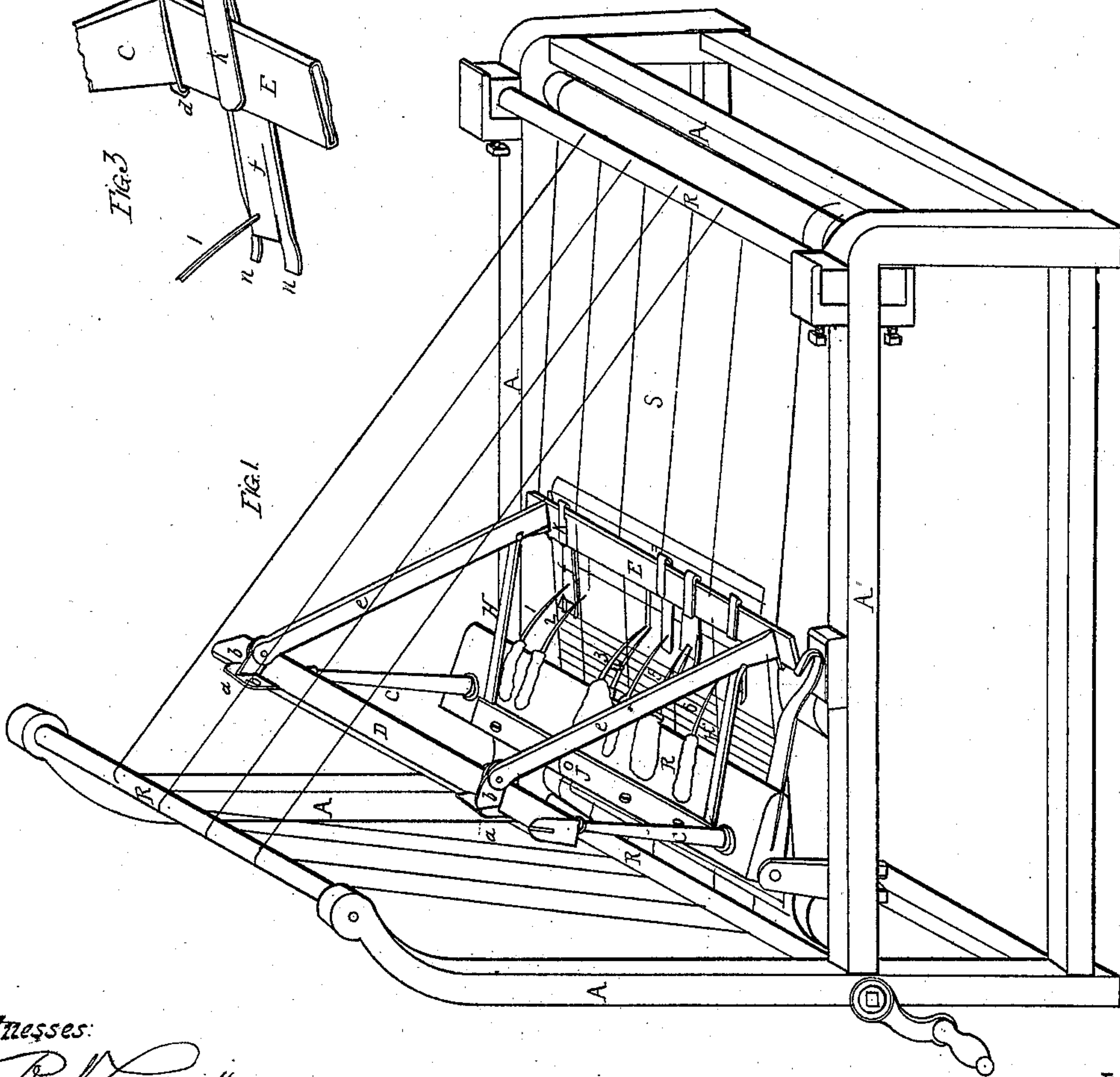
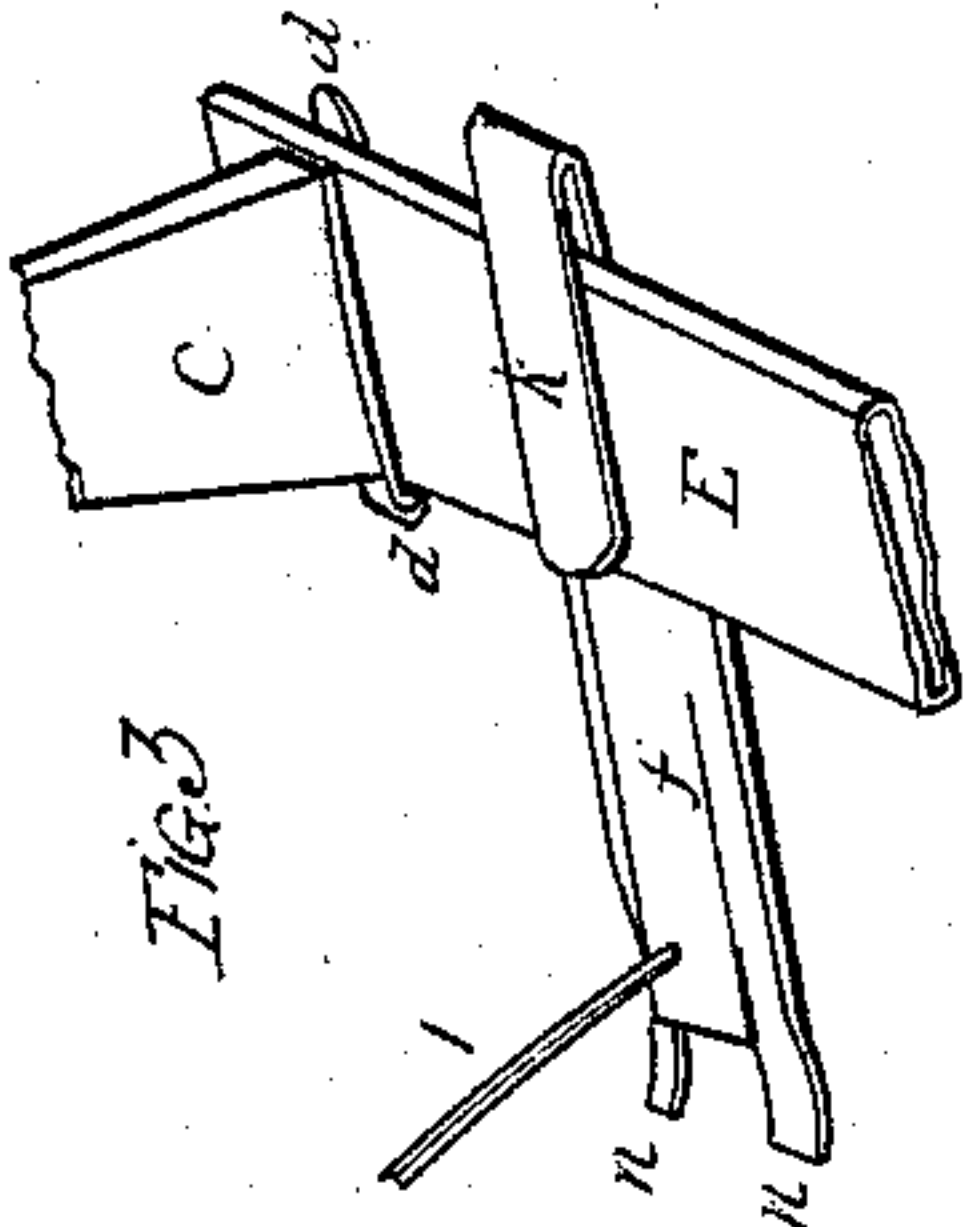
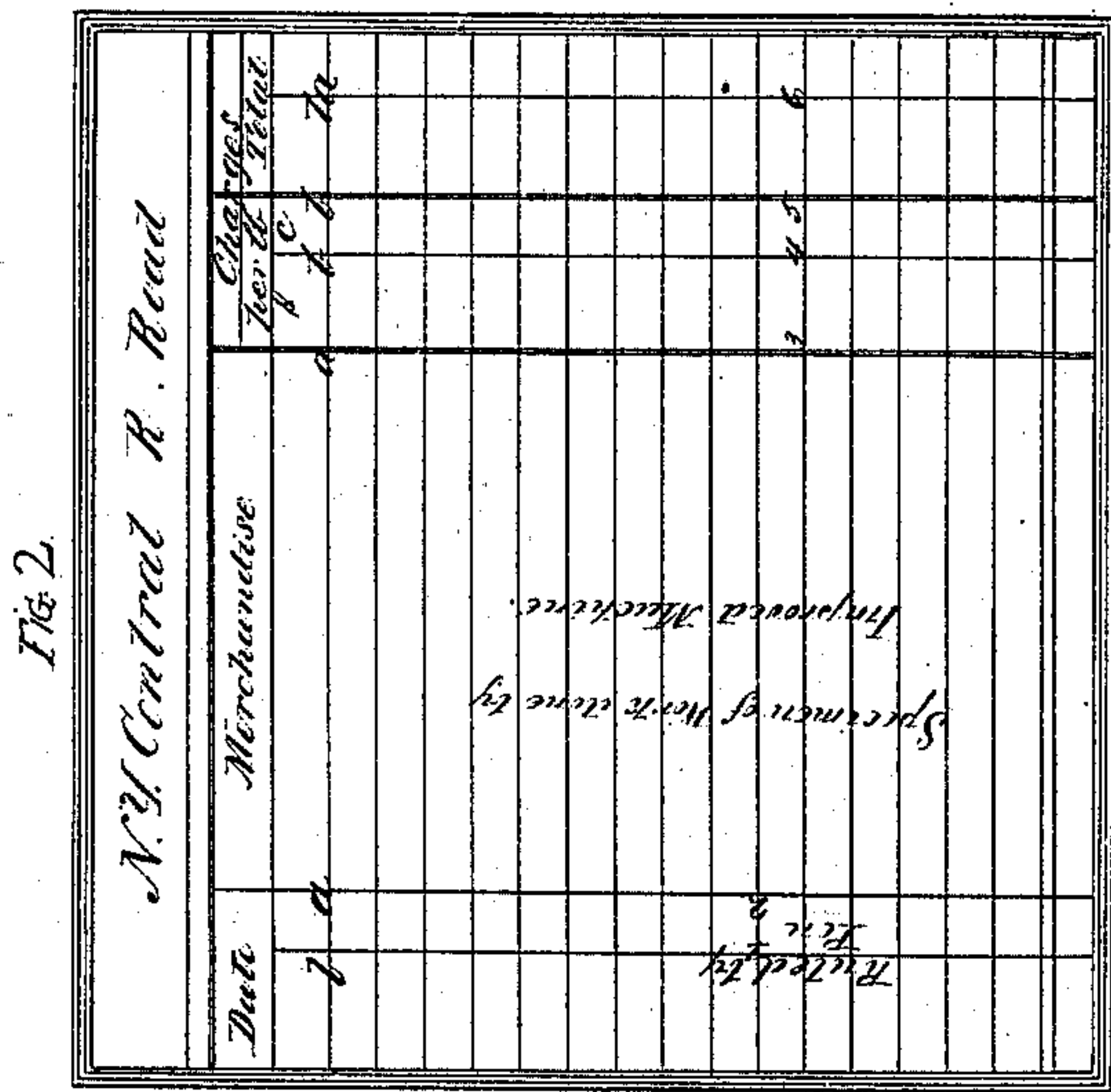


*J. Dobb's.
Ruling Mach.*

N^o 2,294.
33,298.

Patented Sept. 17. 1861.



Witnesses:

Carl Henrik Edström
A. Åker

Inventor:

John Dobb.

UNITED STATES PATENT OFFICE.

JOHN DOBBS, OF ALBANY, NEW YORK.

IMPROVEMENT IN PAPER-RULING MACHINES.

Specification forming part of Letters Patent No. **33,298**, dated September 17, 1861.

To all whom it may concern:

Be it known that I, JOHN DOBBS, of the city of Albany, State of New York, have invented certain Improvements upon Ruling-Machines; and I declare the following specification, with the drawings accompanying the same as part thereof, to be a full and complete description of my invention.

In the process of ruling paper for accounts of various kinds or for special memoranda or entries it is requisite that besides the faint lines for the writing the pages be divided by perpendicular cross-lines to separate the classes of items entered, which lines extend from the top to the bottom of the account, (technically called "striking the heads,") and that for the purpose of grouping several of the items under general heads some of these lines are ruled shorter than others, as shown in Figure 2 of the drawings, which represents a ruled sheet with headings, *a* being the long and *b* the short lines of an account.

In using the ordinary ruling-machines the pens are necessarily arranged to start their markings simultaneously, and therefore it is necessary whenever a set of short lines are to be ruled to run the paper again through the machine as often as there are lines varying in length, using only the pens intended for the short lines and starting their work at the point required.

My invention is a simple attachment to the ordinary machine, by which the work can be accomplished at one ruling for all the vertical lines, long and short.

Fig. 1 represents in perspective the ordinary ruling-machine; *A A*, the frame; *R R*, the rollers to carry the strings which hold the paper to be ruled in place upon its bed *S*, which is a revolving cloth sheet carrying the paper.

B is the beam suspended upon an axis at each end and carrying the pens 1 2 3 4 5 6, whose points rest upon the paper and are fed by flannel slips lying upon the beam and reaching to them, saturated with ink for their supply.

My apparatus is attached to the beam and moves with it.

C C are upright standards inserted into the beam, carrying my entire machinery and removable at will. On their upper ends they support a cross-piece *D*, which has a groove

along its upper edge. Within this groove metal slips *a a* slide, having projecting from them hinge-plates *b b*, to which, by corresponding plates, hang two rods *e e*, at whose lower ends a flat bar *E* is suspended. This bar is attached to the rods *e e* by spring-slips of metal *d d*, (see Fig. 3,) which hold it against the lower ends of the rods, so that by means of the slips *a a* and *d d* the rods can be brought nearer to each other in order that shorter or longer bars *E* can be used.

H H are stays projecting from the bar, against which the arms *e e* rest, and by which their approach to the paper, in setting the pens properly upon the paper, can be regulated. They lie under the clamp-slip *J*, used in all ruling-machines, and are by it held upon the beam, capable of being moved backward or forward or sidewise and there secured.

To the bar *E*, opposite to each pen which it is intended shall rule one of the short lines, there is fixed a thin slip of metal *f*, (see Fig. 3,) its upper part *k* being bent over the bar to act as a spring-grip. Its under part projects from the bar backward a short distance and upon it the pen lies, the object being to intercept by the slip the operation of the pen while the other pens are ruling the long lines. Consequently the length of the part of the line to be omitted from the ruling is to be regulated by the length of the slip *f*, which is adjusted by sliding the slip itself backward or forward upon bar *E*. To prevent the metal from rubbing upon and blurring the line the thin metal of *k* is slit up and formed in a side or two side rests *n* by bending them slightly downward so as to hold the part under the pen up from the paper so soon as the pen leaves it and begins its marking.

It will be seen on inspection of Fig. 1 that the pens numbered 2 and 3 are lying upon the paper ready to commence their lines, while 1, 4, 5, and 6 are resting upon their respective slips, the slip for 5 being shorter than that for the other pens. When the machine is put in motion and the paper moves forward, pens 2 and 3 commence ruling. The movement of the paper carries with it the slips, since they lie upon it, and directly its slip passes from under pen 5, which then begins its line, and directly afterward the slips underlying pens 1, 4, and 6 pass simultaneously from under

them, when they rule their lines. Thus the long lines and the two grades of short lines are drawn together at one operation, and it will be seen that by increasing the number of pens and varying the position of their slips any number of variously-sized lines may be ruled by once passing through the machine, which by present usage would require repeated transmissions under the pens. It must be noted that the metal of the slips (usually of brass) is so thin that the elasticity of their superlying pens permits the others to work freely upon the paper by the pressure of the beam upon them.

What I claim, and desire to secure by Letters Patent, is—

In ruling-machines where it is desired to rule lines shorter than those starting from the head of the work, the employment of thin slips of material of various lengths, depending upon the lengths of the lines to be ruled, the said slips being attached to and adjustable upon a movable bar connected with the beam carrying the pens, substantially as set forth, and for the purposes declared in this specification.

JOHN DOBBS.

Witnesses:

RICHD. VARICK DE WITT,
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