

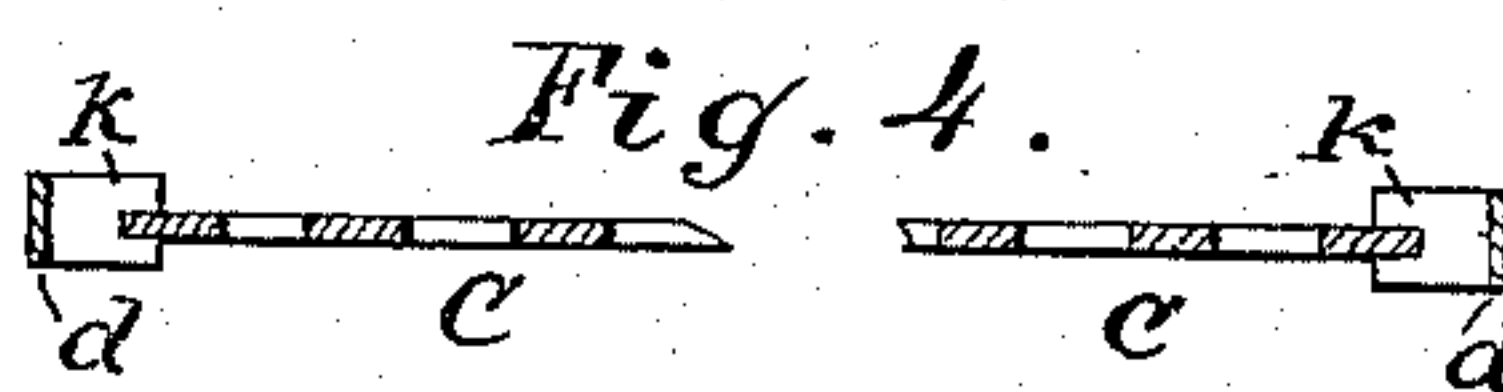
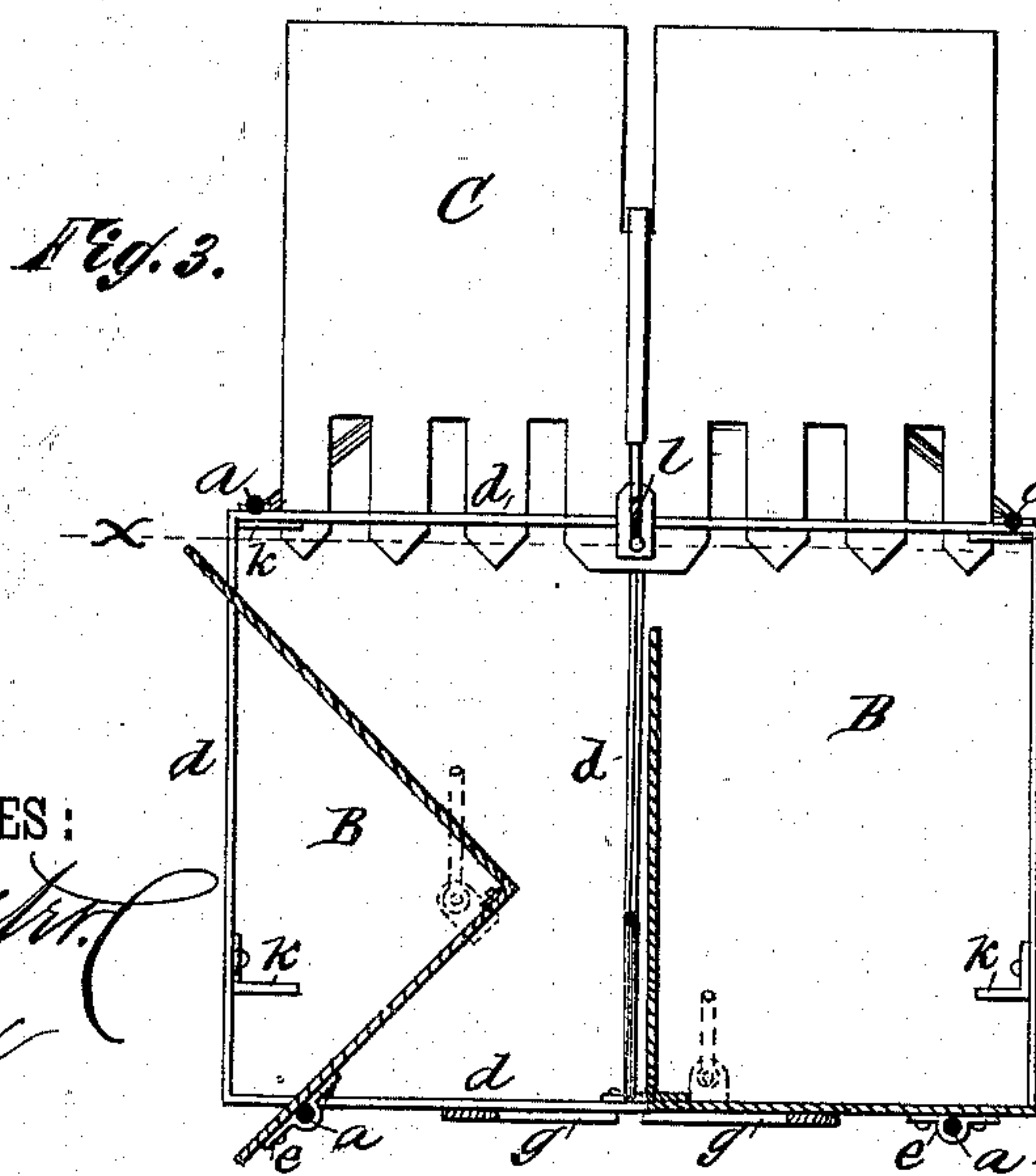
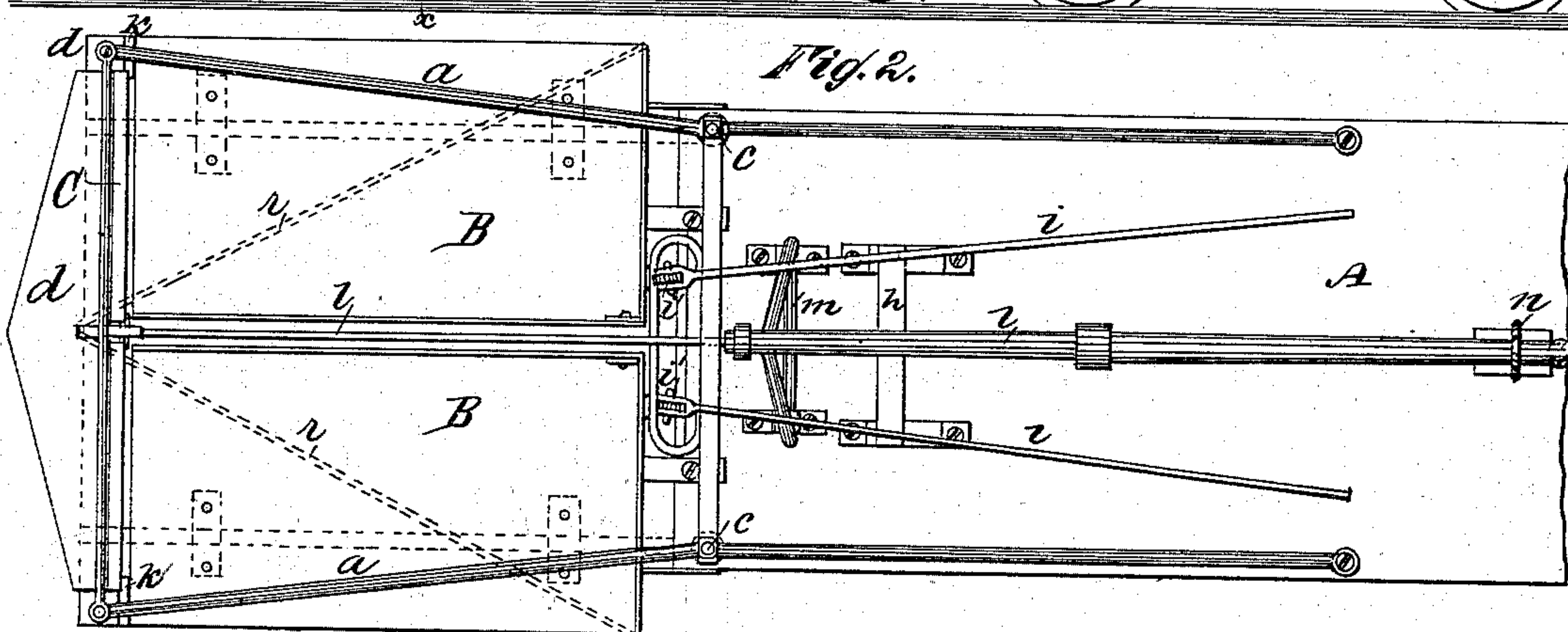
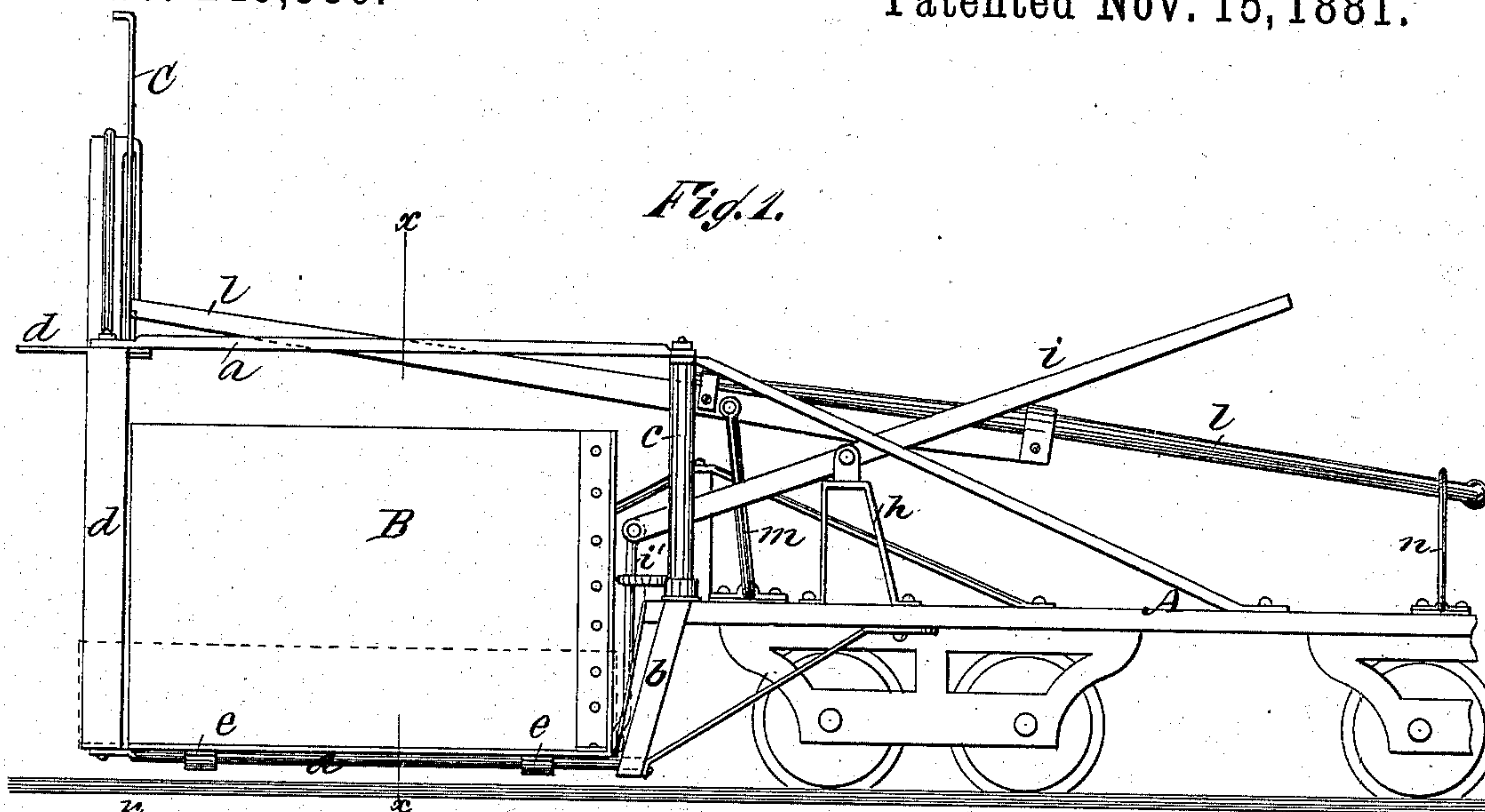
(No Model.)

W. CHOATE.

SNOW EXCAVATOR FOR RAILROADS.

No. 249,586.

Patented Nov. 15, 1881.



WITNESSES:
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WAYNE CHOATE, OF GLENWOOD, IOWA.

SNOW-EXCAVATOR FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 249,586, dated November 15, 1881.

Application filed August 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, WAYNE CHOATE, of Glenwood, in the county of Mills and State of Iowa, have invented a new and Improved Snow-
5 Excavator for Railroads, of which the following is a specification.

The object of my invention is to furnish a machine by which cuts on railroads can be cleared of snow rapidly and without the labor
10 of shoveling.

The invention consists, essentially, in oscillating boxes and movable end-gates, by which the snow is first gathered and then dumped, as more particularly described hereinafter.

15 In the accompanying drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a plan view of the same, and Fig. 3 is a cross-section on the line *x x* of Fig. 1, with one box in position for dumping its load. Fig. 4 is a
20 detail drawing, showing a transverse section of gate C and keepers *k*, taken through the line *x x* of Fig. 3.

Similar letters of reference indicate corresponding parts.

25 A is a flat car, of usual construction, on one end of which the excavating mechanism is sustained, as next described.

An open frame composed of rods *a a* is sustained at the front of the car by hangers *b* and
30 posts *c*, that are suitably braced. The lower rods are close to the rails, while the upper rods are elevated sufficiently to give space for the operation of the boxes.

To the forward ends of rods *a* are attached
35 cutters *d*, consisting of strips of metal connected to form a rectangular frame, and having their forward edges sharpened.

B B are the boxes, preferably made of metal plates, and hung by loops *e* on rods *a*, that are
40 connected rigidly to the hangers *b* and the lower cutters. The boxes are sustained by rods *a* and braces *g*, and turn on the rods. The boxes are open at the forward ends, top, and outer sides, and the two, side by side, extend
45 the width of the cut to be made. On the car is a frame, *h*, sustaining levers *i i* in swivel or analogous bearings, that are connected by links *j j* to the boxes B, so that by operation of the levers the boxes can be raised and turned
50 outward, as shown in Fig. 3. The loops *e*, by

which the boxes are hung, are placed near the open outer side of the boxes, so that the load shall be dumped clear of the track.

C is the end-gate, fitted to slide vertically at the forward ends of boxes B in guides *k* attached to cutters *d*. The lower end of the gate
55 is serrated, as shown, that it may be more easily forced down into the snow. The gate C is attached to the outer end of a lever, *l*, that is sustained by a rocking fulcrum, *m*, on the
60 car, and a loop, *n*, is provided on the car for connection to the inner end of the lever, so as to sustain the gate in the elevated position.

In the operation of the excavator the car is to be moved by a locomotive. The end-gate
65 C is first raised, and the car being then moved forward the boxes are forced into the snow their full length. The cutters *d*, acting in front of the boxes, facilitate the operation and relieve the boxes of the pressure. The end-gate
70 C is then to be forced down to close the ends of the boxes. The car is then run back to a convenient place for dumping, and the load dumped by a partial turn of the boxes, after which the
75 boxes are returned to place, the end-gate raised, and the car moved into the cut again. In that manner a cut of the required width can be rapidly made through the drift. In deep drifts, where the boxes do not reach the top, the snow
80 above can be readily shoveled into the boxes. The excavators will penetrate easily, as they cut clean without packing the snow.

For a small depth of snow the apparatus can be utilized as a plow. For this purpose I provide the movable mold-boards *r r*, to be applied
85 as shown in dotted lines in Fig. 2, from the center cutter, *d*, to the rear outside edges of boxes B.

In the use of the excavator suitable places for dumping the snow will generally be found
90 near the cuts. Most roads approach cuts on embankments, and the wind that fills the cuts with snow clears the embankments, so that the excavator can be readily emptied at the embankments.
95

I am aware that it is not broadly new to construct snow-excavators with knives for cutting the snow, and tilting boxes for receiving and emptying the same. I do not therefore claim,
100 broadly, these features; but

What I do claim is—

1. The boxes B, fitted for oscillation on their supports, and the sliding end-gate C, combined together and with the car A, substantially as shown and described.

2. The sliding end-gate C and lever l, in combination with the boxes B, substantially as and for the purposes set forth.

3. The combination of the oscillating boxes B, levers l', and car A, substantially as shown and described, for operation as set forth.

WAYNE CHOATE.

Witnesses:

M. H. BYERS,
E. C. BYERS.