

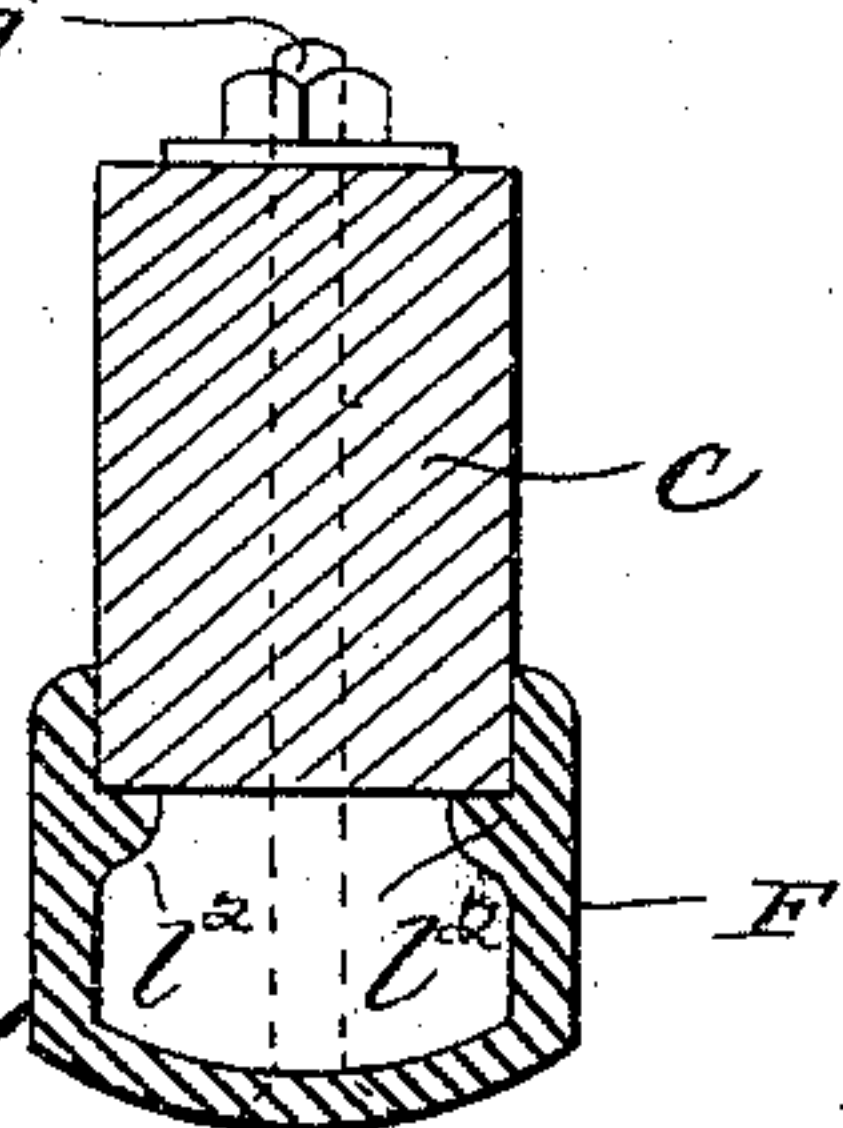
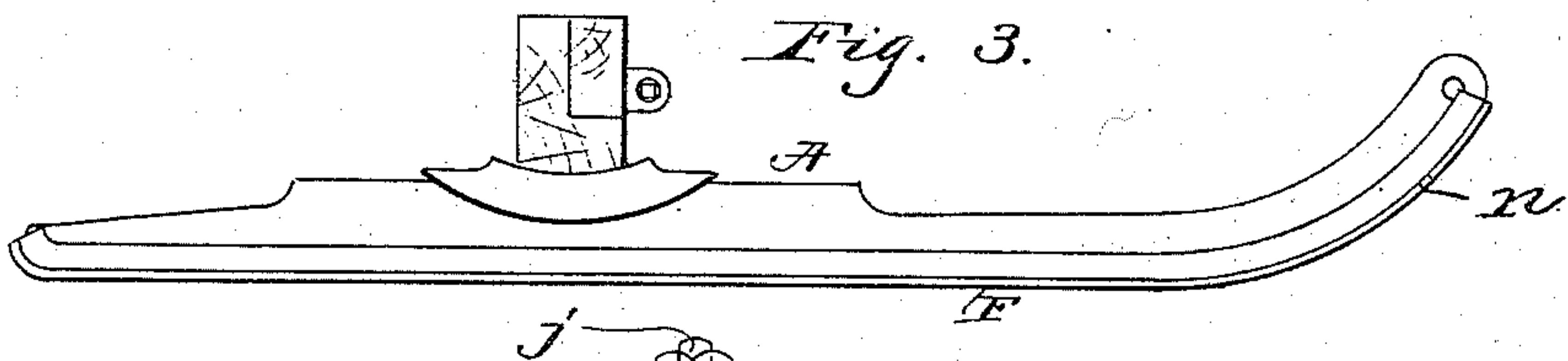
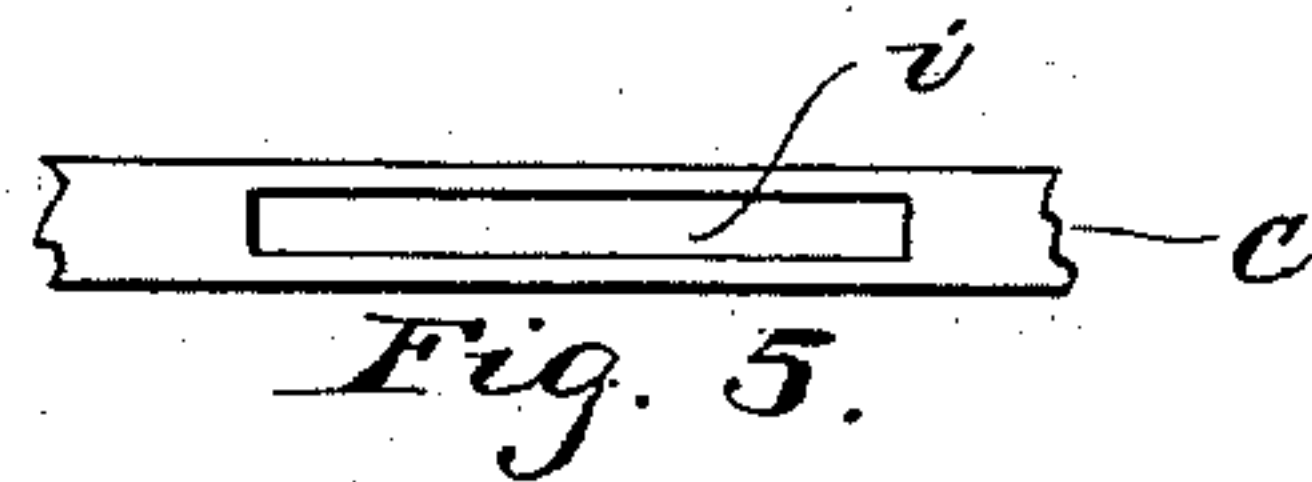
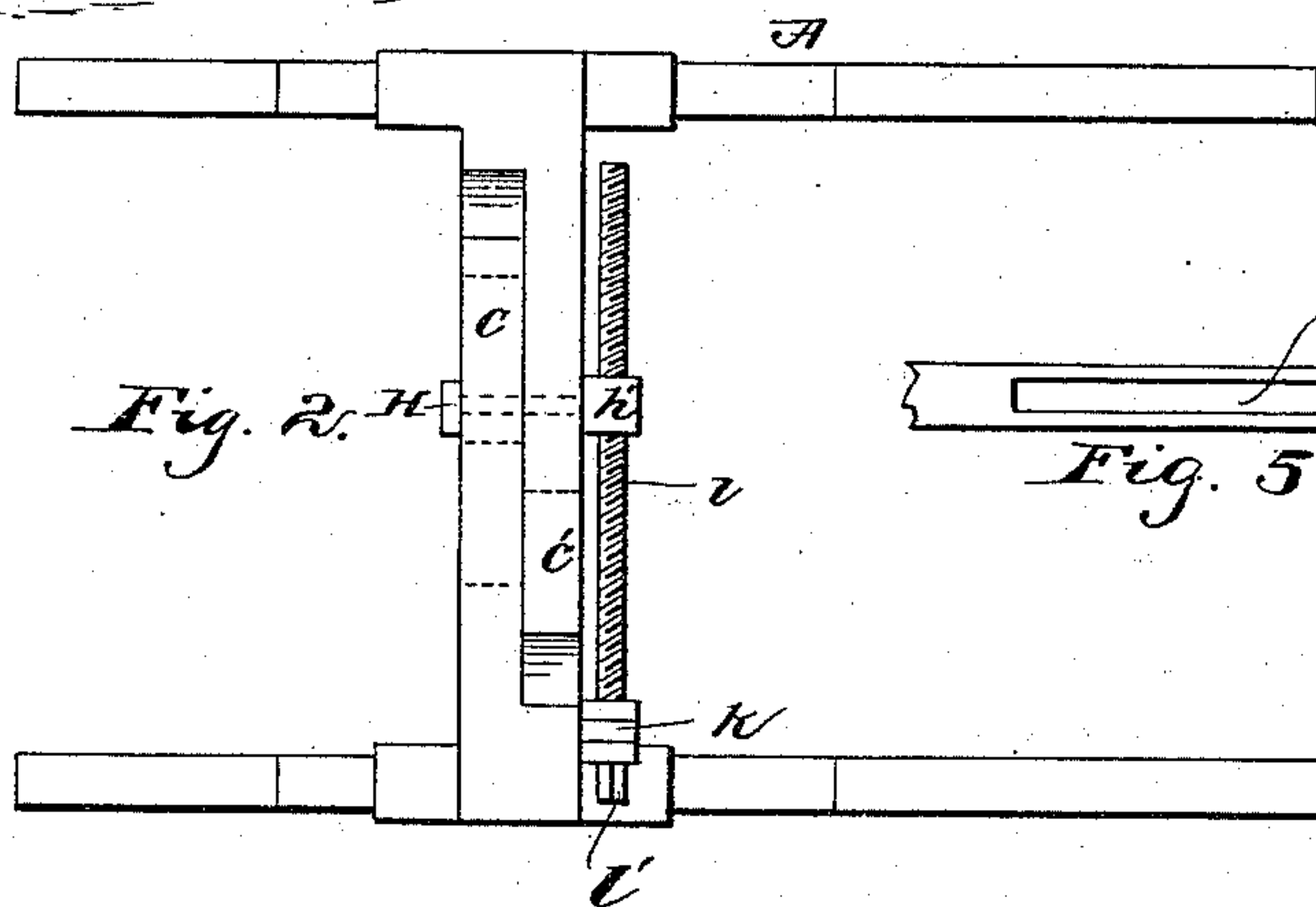
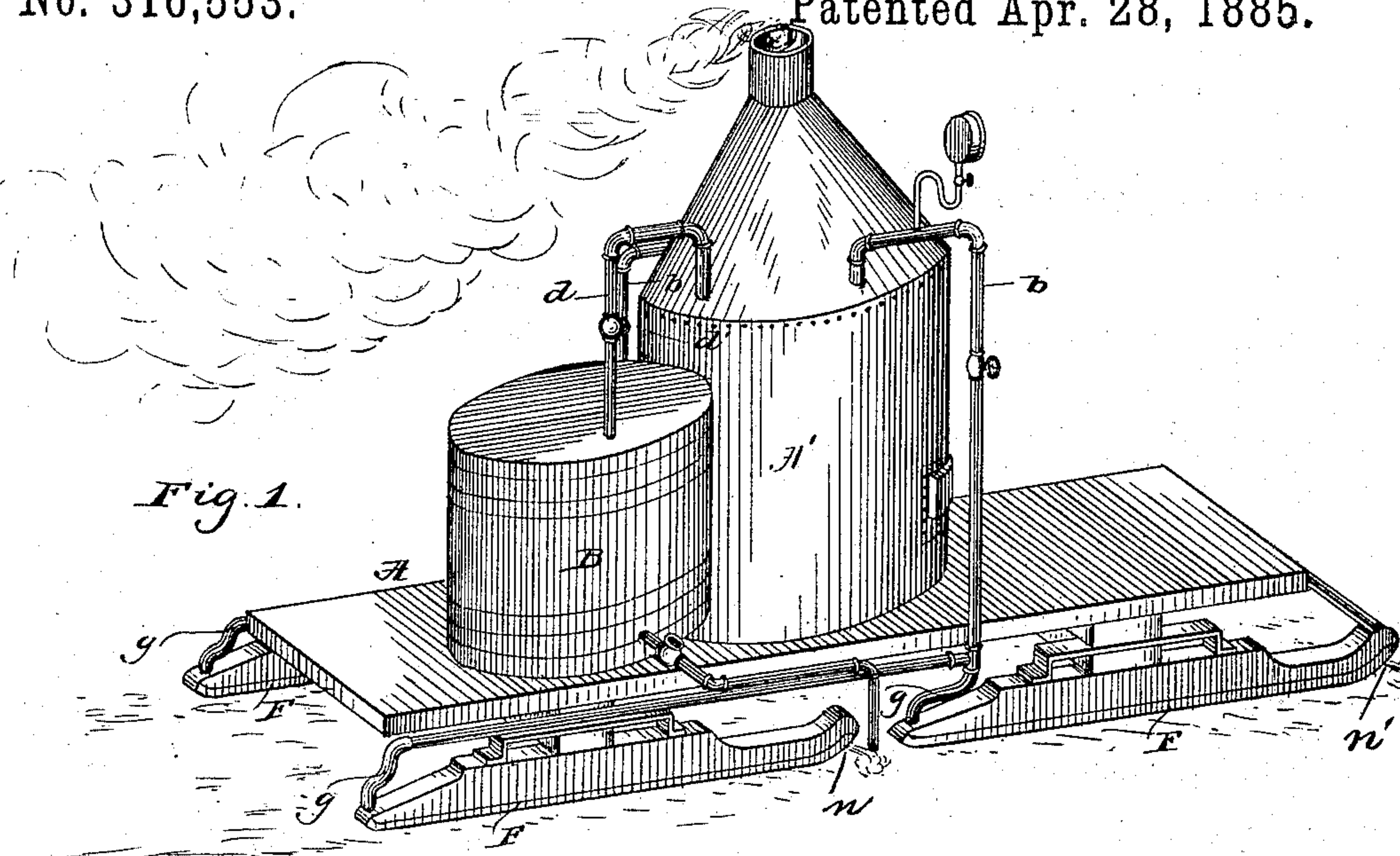
(No Model.)

F. B. LOWELL.

MEANS FOR TRANSPORTING LOADS OVER ICE AND SNOW ROADS.

No. 316,553.

Patented Apr. 28, 1885.



WITNESSES

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FRANKLIN B. LOWELL, OF MARINETTE, WISCONSIN.

MEANS FOR TRANSPORTING LOADS OVER ICE AND SNOW ROADS.

SPECIFICATION forming part of Letters Patent No. 316,553, dated April 28, 1885.

Application filed December 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN B. LOWELL, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented a new and useful Means for Transporting Loads over Ice and Snow Roads, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to machines for making ice logging-roads in the snow; and it consists in the construction and combination of parts, as will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a view in perspective of my improved machine for making ice logging-roads in the snow. Fig. 2 is a plan view of one pair of the bob-sleds used in this connection. Fig. 3 is a side elevation of one pair of the bob-sleds. Fig. 4 is a transverse vertical section through one of the runners and its shoe; and Fig. 5 is a detail view of portions of beam, showing slot.

Referring by letter to the accompanying drawings, A designates an ordinary logging-sled in the main features of its construction, it comprising a pair of bob-sleds connected by a platform which is supported on expanding beams C C'. The beam C is slotted through horizontally, and a bolt, *h*, having a threaded eye, *h'*, is passed through the slot *i* in the beam C, the eye *h'* projecting in front of the beam C. A threaded rod, *l*, passes through threaded lugs *k* on the expanding or extension beam, and passes also through the threaded eye *h'* of the bolt *h*. The threaded rod *l* is provided at one end with a rectangular portion, *l'*, to which a wrench may be applied to turn it to cause the runners of the bob-sleds to recede from or to approach each other, as may be desired, to either widen or narrow the track of the sleds. The runners of the sleds are soled with hollow shoes F, made of metal, and these shoes are connected by steam-pipes *b* with the steam-boiler A' on the platform of the sled.

B designates a water-tank, in which water is heated by steam from the boiler A'. The steam passes through a pipe, *d*, having a steam-cock, *d'*. *b b* are steam-pipes, through which steam is conveyed from the steam-boiler to the hollow sleigh-shoes F. The steam-pipes *b b* are connected at their lower ends with the hollow shoes F by flexible rubber tubes *g g*, thereby forming compensating-joints at these

points, which will permit the varying movement of the runners to take place without bringing undue strain on the piping. The expansion-beams permit the sleigh to be adjusted to make any desired width of track to suit the different treads of logging-sleds. The wooden runners are fitted into the iron shoes and rest on shoulders *l' l'*, and the shoes are held in place by bolts *j*.

The operation of the device is as follows, viz: After the runners have been adjusted to the width of the track required by means of the adjusting-screws *l*, steam from the boiler, by means of pipes *b b* and compensating-joints *g g*, is admitted to the hollow shoes and allowed to circulate through and to issue from the shoes at the points *n n'* through holes drilled in the shoes at these points, and from which holes the steam is forced downwardly into the snow for the purpose of softening the snow over which the sled is to pass, which purpose is further accomplished by allowing the water from tank B to issue in front of the runners through the pipes when the hardness of the snow requires it. The steam heating the hollow shoes F causes them to melt deep grooves in the snow, and which freezes after the passage of the machine and furnishes a glazed and icy gutter, in which the runners of the following logging-sleds can run without diverging from the road.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the sled having hollow shoes or runners with steam-discharge openings, of the steam-boiler with steam-pipes connected flexibly to the hollow shoes, and the water-tank connected with the steam-boiler and provided with the discharge-pipes emptying in front of the rear runners, as set forth.

2. The combination, with the runners and the extension-beam, of the threaded eyebolt and the threaded adjusting-rod, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRANKLIN B. LOWELL.

Witnesses:

J. K. WRIGHT,
D. MADAGIN.