(No Model.)

J. PEPIN.

ICE PLANER.

No. 574,567. Patented Jan. 5, 1897.

Fig 1

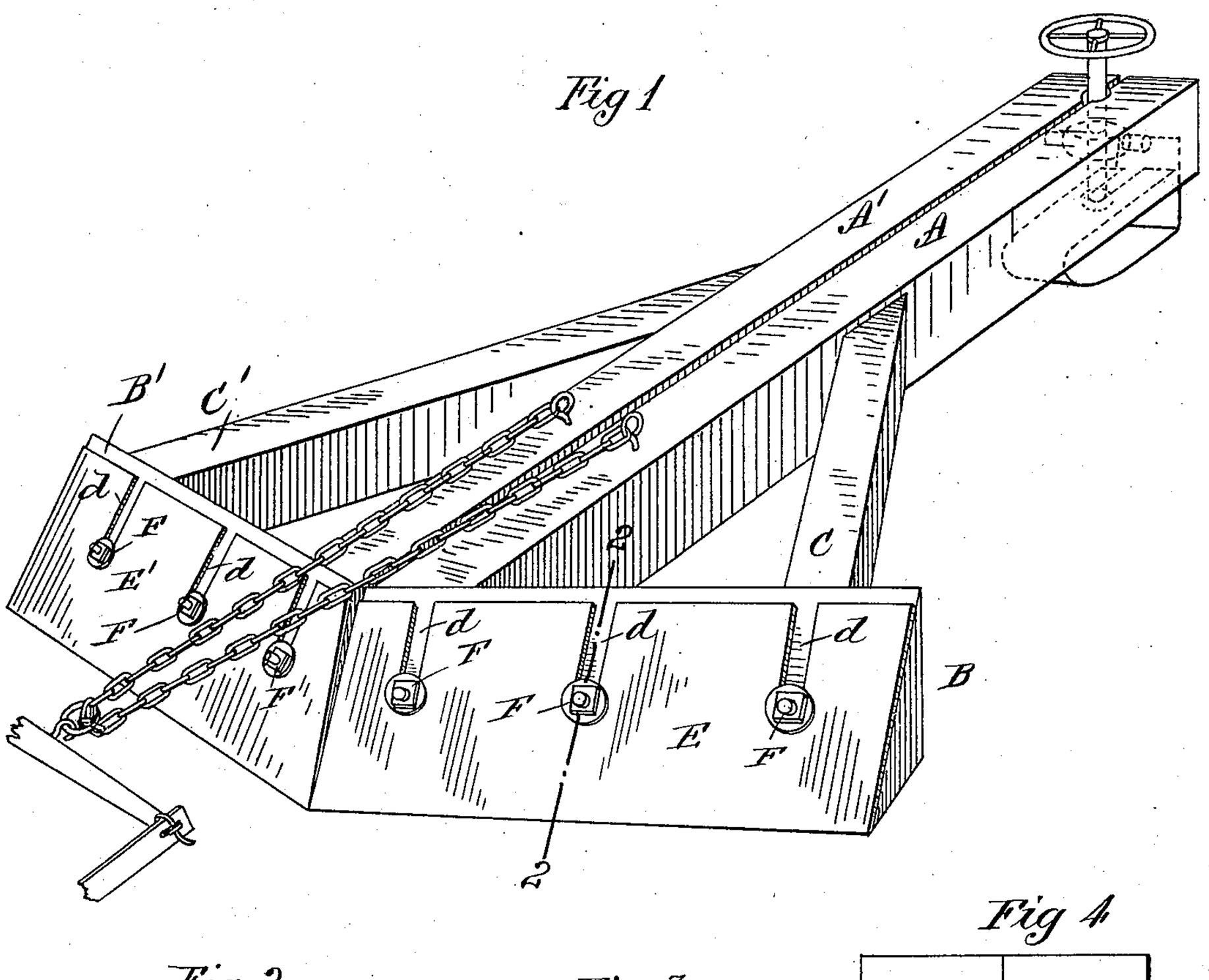


Fig 4

Fig 2

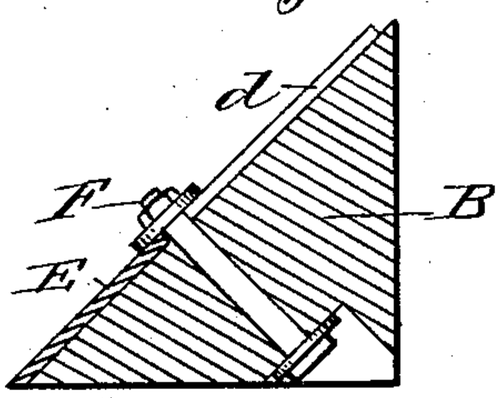
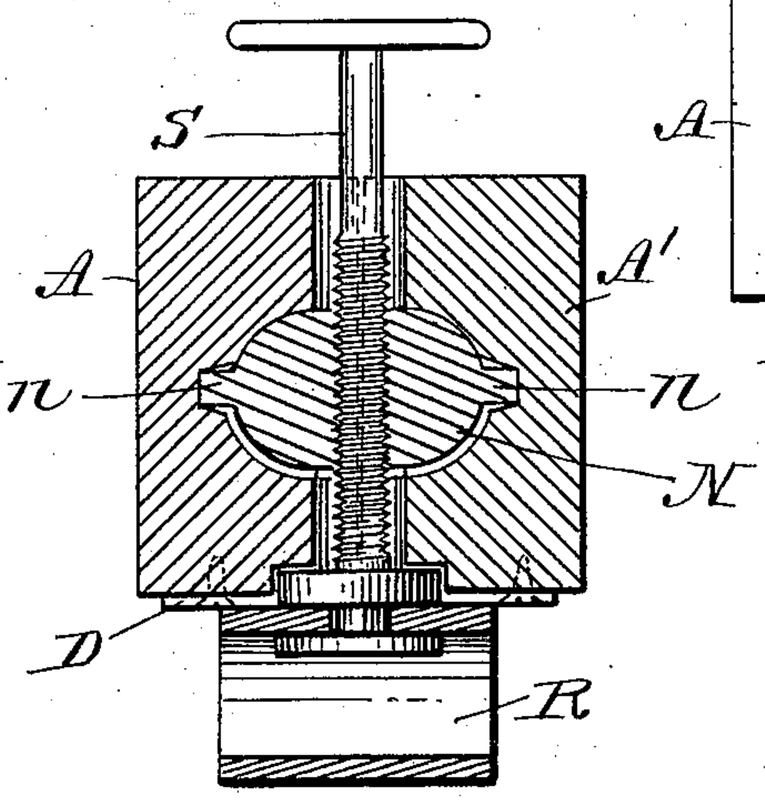
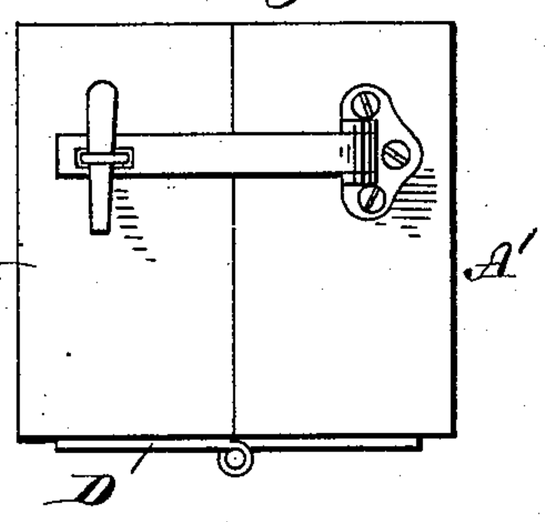


Fig 3





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JOSEPH PEPIN, OF SPRINGFIELD, MASSACHUSETTS.

ICE-PLANER.

SPECIFICATION forming part of Letters Patent No. 574,567, dated January 5, 1897.

Application filed April 24, 1896. Serial No. 588,856. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH PEPIN, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Ice-Planers, of which the following is a specification.

This invention relates to ice scrapers or planers, and has for its object the construction of a scraper or planer in which the cutting edges of the knives adjust themselves to the surface of the ice as the said knives are raised or lowered to present a more or less acute angle to the said ice-surface; and the invention consists of the arrangement and construction of the parts, all as hereinafter fully described and claimed.

In the drawings forming part of this specification, Figure 1 is a perspective view of a scraper or planer constructed according to my invention. Fig. 2 is a sectional view through one of the scraper-knives on line 2 2, Fig. 1. Fig. 3 is a cross-section through the rear runner and its support. Fig. 4 is a view of the rear end of the scraper, showing means for fastening together the two parts thereof.

In the drawings, A and A′ are the main body parts of two frames, each of which has secured to its forward end the rearwardly-inclined pieces B B′, which in cross-section are triangular in shape and which are so secured to the said parts A and A′ that the inclined face *b b′*, forming the hypotenuse of the triangle, will be at about an angle of forty-five degrees to the top of said pieces A and A′. The outer ends of the said pieces B B′ are suitably braced by pieces C C′, mortised into the timber A A′ and the outer ends of the pieces B B′, respectively.

The two frames, consisting, respectively, of the parts A, B, and C and A′, B′, and C′, are hinged together along the lower inside edges of said parts A and A′, as shown in Figs. 3 and 4, by suitable hinges D, which permits the said two parts A and A′ to have more or less vibratory motion.

Fig. 4 shows means of locking said two parts A A′ together when desired, consisting of an ordinary hasp and staple. When said parts are so locked, the under sides of the pieces B B′ are in the same plane. On the inclined faces of said pieces B B′ are two planer or scraper knives E E′, secured thereon by the bolts F. Said scraper-knives are provided with slots *d* for the adjustment thereof on said pieces B B′. The lower edges of said knives are ground to a sharp cutting edge, and by means of said bolts F and slots *d* are adjusted to project more or less beyond the lower surfaces of said pieces B B′.

For the purpose of presenting the cutting edges of the knives E and E′ to the surface of the ice at a more or less acute angle means are provided for elevating the rear end of the two parts of the scraper or planer, consisting of a runner R, an adjusting-screw S, and a swiveled nut N, through which said screw passes. Fig. 3 shows this construction clearly.

The nut N is provided with two trunnions *n n*, and each of the parts A A′ on their contiguous faces is hollowed out to receive loosely approximately one-half of said nut, and portions of said parts A A′ are also cut away to allow free passage of the screw S therethrough. After said screw S has been passed through the nut N two washers *w* are secured to the lower end thereof.

The runner R is made of a piece of suitably-bent flat metal. (Shown partly in full and partly in dotted lines in Fig. 1.) The forward end thereof is suitably curved and the rear end thereof is turned upward and bears against the rear ends of the two parts A A′, as shown in said figure. The forward end is bent around to a position substantially parallel with the part of the runner bearing on the surface of the ice, and a slot T is made therein, into which that part of the screw between the washers *w w* passes, one of said washers bearing on the top of said runner and the other preventing the disengagement of the runner from the end of the screw S.

By raising or lowering the said screw the rear ends of the parts A A′ are raised and the planer-knives presented at a less acute angle to the surface of the ice. When said end is so raised by screw S, the outer ends of the two knives E and E′ would be raised from the surface of the ice, but said two parts A and A′ being hinged on their lower edges the two halves of the planer immediately adapt themselves to the surface of the ice. This freedom of movement between the two halves of the planer permits it to adapt itself to any

pronounced inequalities of the ice-surface without straining it.

The nut N being constructed in the form shown, the two parts A and A′ may be separated considerably without effecting a disengagement thereof from said parts. As a matter of fact the vibratory movement of said two parts is not very great in any case.

Any convenient draft appliance is connected to the planer. In Fig. 1 is shown a chain and part of a whiffletree to which a horse may be attached.

Having thus described my invention, what I claim is—

1. An ice-planer consisting of a pair of frames hinged together, a planer-knife adjustably secured to the forward end of each of said frames and an adjustable support for the rear ends thereof consisting of a screw having vertical movement therethrough and engaging a nut fixed between said frames, and a runner secured to the lower extremity of said screw, substantially as set forth.

2. An ice-planer consisting of a pair of knife-frames hinged together, a planer-knife secured to the forward end of each frame, and an adjustable support for the rear ends of said frames, combined and operating substantially as set forth.

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