April 29, 1924.

1,492,378

M. KRYSAK

SLEIGH

Filed March 8, 1922

FIG. 1.

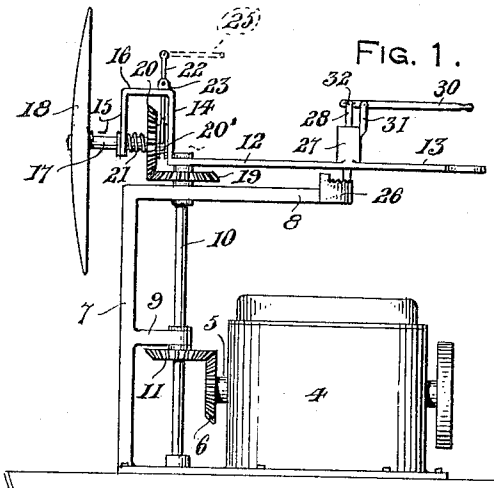


FIG. 4.

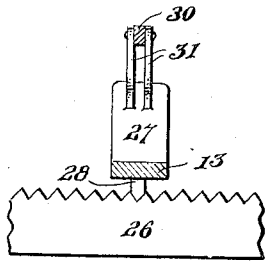


FIG. 2.

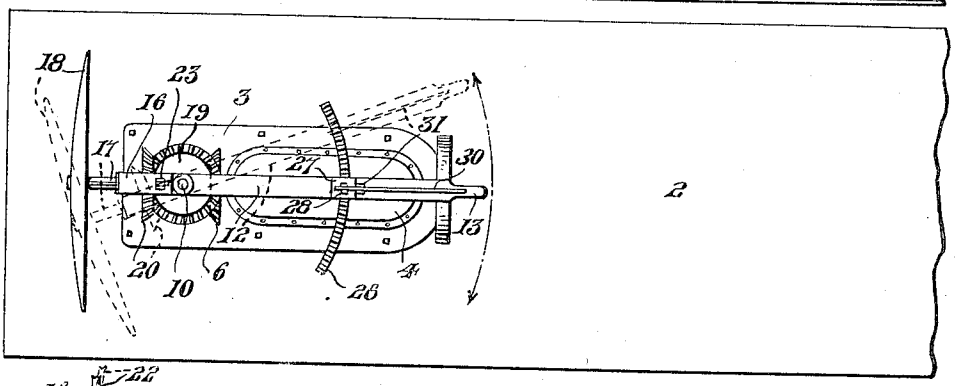
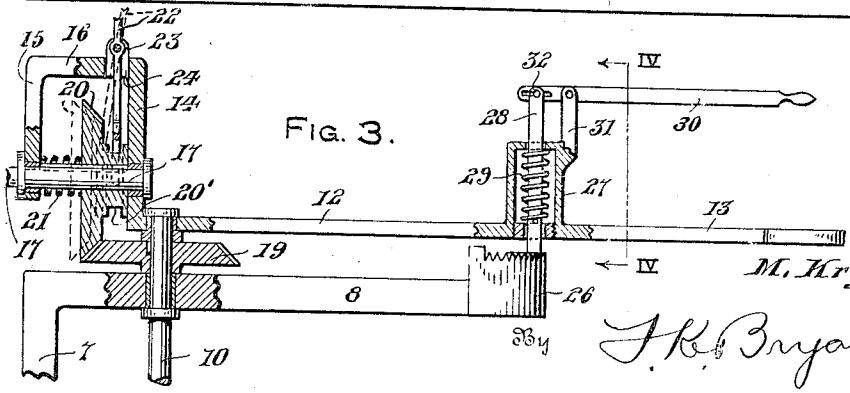


FIG. 3.



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UNITED STATES PATENT OFFICE.

MIKE KRYSAK, OF HAFFORD, SASKATCHEWAN, CANADA.

SLEIGH.

Application filed March 8, 1922. Serial No. 542,070.

To all whom it may concern:

Be it known that I, MIKE KRYSAK, a citizen of the Dominion of Canada, residing at Hafford, in the province of Saskatchewan and Dominion of Canada, have invented certain new and useful Improvements in Sleighs, of which the following is a specification.

This invention relates to certain new and useful improvements in sleighs and has particular reference to a sleigh of the motor driven type wherein a source of power such as a gas, electric or other motor is mounted upon the sleigh to effect forward propulsion thereof.

A primary object of the invention resides in the provision of a sleigh with motor driven means wherein the propeller driven by the motor is shiftably mounted to vary the position thereof with respect to the longitudinal axis of the sleigh to facilitate the steering or guiding of the sleigh during forward travel thereof.

With the above general objects in view and others that will appear as the nature of the invention is better understood the same consists of the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawing, wherein like reference characters designate corresponding parts throughout the several views,

Figure 1 is a fragmentary side elevational view of a motor driven sleigh constructed in accordance with the present invention,

Figure 2 is a top plan view, partly broken away showing the propeller laterally shifted to a dotted line position to effect the steering of the sleigh,

Figure 3 is a fragmentary side elevational view partly in section of the mechanism for shifting the propeller, and

Figure 4 is a detail sectional view taken on line IV—IV of Fig. 3 showing the manner of holding the propeller in its adjusted position.

Referring more in detail to the accompanying drawing there is illustrated a sleigh embodying runners 1 and a superposed platform 2, upon which platform a base plate 3 carrying a motor 4 is mounted, the motor including a power shaft 5 having a bevel gear 6 secured to the forward projecting end thereof.

An angle bracket including a perpendicular leg 7 and an upper rearwardly directed horizontal leg 8 is carried by the base plate 3 while an arm 9 projects rearwardly intermediate the upper and lower ends of the leg 7 cooperating with the leg 8 to form a journal bearing for the vertical shaft 10 as clearly shown in Figs. 1 and 2. A bevel gear 11 is secured to the shaft 10 beneath the arm 9 and is in constant mesh with the bevel gear 6 upon the motor shaft 5.

A lever bar 12 having a handle portion 13 is journaled upon the upper end of the shaft 10 above the bracket leg 8, the lever 12 adjacent the shaft 10 and forwardly thereof carrying an inverted U-shaped frame embodying side arms 14 and 15 and a connecting cross head 16, a shaft 17 being journaled in the side arms 14 and 15 and carrying a propeller 18. The driving connection between the shafts 10 and 17 includes a bevel gear 19 secured to the shaft 10 intermediate the leg 8 and the lever 12 that is adapted to mesh with the bevel gear 20 splined upon the shaft 17, the engagement between the gears 19, 20 being maintained by the coil spring 21 supported on the shaft 17 between the frame arm 15 and said gear 20. To control the engagement between the gears 19 and 20, a lever 22 pivoted between lugs 23 carried by the cross head 16 of the frame arms 14 and 15, extends through an opening 24 in the cross head with the lower forked end thereof straddling the groove collar 20′ of the gear 20, the lever 22 carrying an operating handle 25 to effect movement thereof for controlling the meshing of said gears.

To effect the steering of the sleigh and for holding the propeller and the frame lever 12 in the adjusted angular position with respect to the longitudinal axis of the sleigh as indicated by dotted lines in Fig. 2, an arcuate rack bar 26 formed concentric with the shaft 10 is carried by the rear end of the bracket leg 8. A perpendicular tubular projection 27 is carried by the frame lever 12 above the arcuate rack bar 26 and encloses a plunger rod 28 tensioned as at 29 to move the lower end thereof into engagement with the rack bar as shown in Figs. 3 and 4, disengagement of the plunger rod 18 from the rack bar being accomplished by the lever 30 pivoted to the brackets 31 carried by the tubular projection 27 with the forward end thereof having a pin and slot connection 32 with the upper end of the plunger rod 28,

It will therefore be seen that upon operating the lever 30 the plunger rod 28 is disengaged from the rack bar 26 and the lever handle 13 may be employed for shifting the lever 12 upon the shaft 10 with the lever carrying the propeller shaft 17 and the gear 20 about the vertical axis of the shaft 10, disposing the propeller 18 at the desired angle with relation to the longitudinal axis of the sleigh.

It will therefore be seen that the forward propulsion of the sleigh is caused by the motor 4 operating the propeller 18 while the steering or guiding movement thereof is accomplished by the lever shift of the propeller through the medium of the frame lever 12 supporting the propeller and shaft 17. The connection between the motor and propeller is controlled by the fork lever 22 cooperating with the gear 20 to move the same against the tension of the spring 21 to control the engagement between the gears 19 and 20. It will be apparent that the shaft 10 with the beveled gears 11 and 19 will at all times be operatively connected with the motor shaft 5 through the beveled gear 6. Therefore, the only additional load placed upon the motor, at the time of starting the propulsion of the sleigh, is the additional resistance of the comparatively short shaft 17, propeller 18, and beveled gear 20. This load is easily handled by the coil spring 21, which is automatic in its clutch actuating operation upon releasing the pull upon the rod 25. It will readily be seen that a great advantage will be derived from this construction as a much lighter clutching mechanism can be employed than would be necessary in a construction wherein the disconnecting point was located near the source of power and practically the entire driving mechanism was added to the load of the motor at the time of placing the sleigh into forward motion.

While there is herein shown and described the preferred embodiment of the present invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention.

What is claimed as new is:—

In a device of the class described, a platform, a propeller, a bracket mounted upon said platform, a horizontal leg extending from said bracket, an arcuate rack bar carried by the rearward end of said leg, a lever bar pivotally disposed thereabove, said lever bar constituting a combined mounting and steering means for the propeller, a tubular projection carried by said lever bar, a plunger rod passing therethrough, said plunger rod cooperating with said arcuate bar for providing a means for holding the propeller in adjusted angular positions, a motor, and driving connection between the motor and propeller.

In testimony whereof I affix my signature.

MIKE KRYSAK.