

hood over the same, a knife arranged between the knotting-hook and cord-holder, and an arm fixed on said disc and curving forward and upward therefrom, whereby the said arm carried along by the disc will pass over the strands of cord, press them inward and downward against the knife, and at the same time sweep the main strand in between the disc and its hood, substantially as described.

12th. In a grain-binder, a revoluble knotting-hook, in combination with the conical revoluble cord-holder disc G, and stationary-hood H, extending over said disc and provided with notches h^1 , h^2 , to stop and guide the cord, substantially as described.

13th. In a grain-binder, a revoluble knotting-hook, in combination with a revoluble cord-holder disc G, a stationary-hood H, extending over said disc, a knife I, standing across the breast-plate between the knotter and the cord-holder, and an arm G¹, rigid with said disc and curving forward and upward from its point of junction therewith, substantially as described.

14th. In a grain-binder, a revoluble knotting-hook, in combination with a cord-holder, and a cord-cutter I, arranged across the breast-plate at a slight angle thereto and having its cutting edge inclined upward from front to rear, substantially as described.

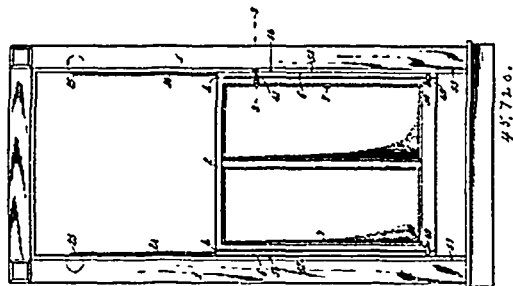
15th. In a grain-binder, a knotter-frame provided with a bearing c^1 , for the binding-shaft, in combination with the knotting-hook shaft f, and cord holder disc shaft g, both mounted in the knotter-frame and having bearings for their upper ends opening into said bearing c^1 , substantially as described.

16th. In a grain-binder, the breast-plate A, provided with a short slot a^1 , at its lower end and a bridge a^2 , across the same, in combination with a cutter I, adapted to set in said slot and detachably fastened to the bridge, a knotting-hook and a cord-holder, substantially as described.

17th. In a grain-binder, a cord-holder consisting of a revoluble conical disc, in combination with a stationary-hood arranged above and extending over the convex surface of said disc, and devices for rotating the latter, substantially as described.

18th. In a grain binder, a revoluble conical cord holding disc, in combination with a stationary-hood fitted to and extending over the convex surface of said disc, and an arm, or finger, rigid with said disc and projecting forward and upward therefrom in the direction of its movement, substantially as described.

No. 45,720. Revolving Window-Sash.
(*Cadre de châssis tournant.*)



Philip Stover Riddle, Fentriss Gordon Kerlin, both of Woodstock Virginia, and Benjamin Franklin Dyre, Melrose, Massachusetts, all in the U.S.A., 6th April, 1891; 6 years.

Claim.—1st. The combination of slide-bars carrying spring-yielding anti-friction rollers, spring drums having suspension bands connected with the slides, means for varying the pressure of the rollers against parts of the window frame, a rotatable sash journaled to the slide-bars, a lock for engaging and locking one of the slide-bars, and a lock for locking the sashes to one of the slide-bars, substantially as described.

2nd. The combination of slide-bars carrying spring-yielding anti-friction rollers, means for varying the pressure of the rollers against parts of the window-frame, a rotatable sash journaled to one of the slide-bars, a lock for engaging and locking one of the slide-bars, and a latch mounted on one of the slide-bars for engaging the sash frame and having a finger piece provided with a projection 56, adapted to enter a recess or notch 53, in a part of the window-frame whereby the sash-frame cannot be revolved until the projection enters the recess or notch, substantially as described.

3rd. The combination with slide-bars, and a sash-frame carried thereby, of levers pivoted to one of the slide-bars and carrying an anti-friction roller, a leaf spring acting on the roller-carrying lever, a slide movable more or less over the leaf-spring to vary the power exerted thereby on the roller carrying lever, and means for moving the slide longitudinally on the slide-bar, substantially as described.

4th. The combination with the slide-bars, and a sash-frame carried thereby, of levers pivoted to the slide-bars, carrying anti-friction rollers and having tail-pieces, leaf-spring acting on the tail-pieces of the levers, and slides movable in opposite directions and engaging the leaf-springs to vary the power exerted thereby on the roller-carrying levers, and means for moving the slides in opposite directions, substantially as described.

5th. The combination, with longitudinally channelled slide-bars, and a sash-frame carried thereby, of levers pivoted in the channels of the slide bars and carrying anti friction rollers, leaf springs acting on the roller-carrying levers, and slides arranged in the channels of the slide-bars and movable in opposite directions to more or less engage the leaf-springs,

and means for moving the slides in opposite directions, substantially as described.

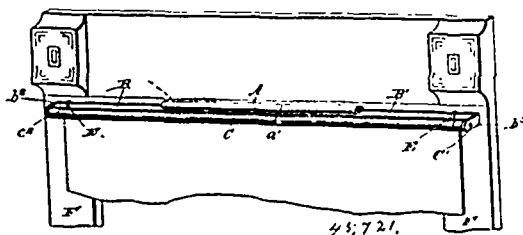
6th. The combination, with slide bars, and a sash frame carried thereby, of levers pivoted to the slide bars and carrying anti-friction rollers, leaf springs acting on the levers and oppositely movable slides provided with toothed portions and bearing against the leaf-springs, and a device for engaging the toothed portions of the slides to move them in opposite directions, substantially as described.

7th. The combination, with slide bars, and a sash frame journaled thereto, of a rock shaft mounted on one of the slide-bars and having a latch 45 to engage a part of the sash frame, and a finger piece 49, having a projection 50, adapted to enter a recess or notch in a part of the window frame whereby the sash frame cannot be released and revolved until said projection enters said recess or notch, substantially as described.

8th. The combination, with a slide-bar, having a longitudinal notched portion, and a revolving sash journaled to said slide bar, of a bolt 27 adapted to engage the notches of the slide-bar, a pivoted lever arm 31 engaging a part of the bolt, a bell crank-lever 38 having one arm engaging a part of said pivoted lever arm, and a finger piece 41 pivoted to the other arm of said bell-crank-lever, substantially as described.

9th. The combination, with a channelled slide-bar, having a series of locking notches 26, and containing pivoted levers 18 carrying anti-friction rollers 20, leaf springs 15, and slides 8 movable more or less into engagement with said springs, of a bolt 27 adapted to engage the locking notches of the slide bar, a pivoted lever arm 31 bearing against a part of the bolt, a bell crank lever 38 having one arm engaging a part of the lever-arm and a finger piece 41 pivoted to the other arm of the bell-crank lever, substantially as described.

No. 45,721. Window Shade Hanger.
(*Porte-rideau de fenêtre.*)



Ryerson W. Hilliker, Kansas City, Kansas, U.S.A., 6th April, 1891; 6 years.

Claim.—1st. A curtain supporting strip, comprising a middle guide strip and adjustable bracket end strips having outwardly projecting ends upon which the curtain roller pins are supported, substantially as described.

2nd. A curtain strip, comprising the middle guide strip having marginal flanges, and adjustable bracket end strips fitted to slide endwise between and beneath said flanges, and outwardly projecting ends to receive and support the ends of the curtain roller, substantially as described.

3rd. In a curtain strip, the combination of a guide strip having marginal flanges and indentations a^1 upon its back, with longitudinally adjustable bracket end strips held in place between said flanges by the said indentations, substantially as described.

4th. A curtain strip, comprising the middle guide strip, having marginal flanges, the longitudinally adjustable bracket end strips held beneath and between said flanges, and having outwardly bowed, or bent, inner ends to bear against the said flanges and hold the bracket strips in place, substantially as described.

5th. A curtain strip, comprising the guide strip having marginal flanges, the longitudinally sliding bracket end pieces, the projecting sleeve upon the ends of the guide strip, and a hook to embrace the said sleeve and fasten into the window casing, substantially as described.

No. 45,722. Governor for Machinery.
(*Gouverneur pour machines.*)

Edward Thunderbolt, Carlton, Victoria, Australia, 6th April, 1891; 6 years.

Claim.—1st. In governors for controlling the speed of machinery, one or more pumps as A and B for supplying compressed air or other fluid into a governing cylinder as L, said governing cylinder being provided with a piston as M for controlling, actuating and regulating the speed of, or the supply of steam or other source of power to a motor or other machine, substantially as and for the purposes described.

2nd. In governors for controlling the speed of machinery, air pumps as A and B having inlet and outlet valves, which latter open into a passage as K leading to a governing cylinder as L, such cylinder having a piston and rod connected with a throttle valve in the steam pipe, substantially as and for the purposes described.

3rd. In governors for controlling the speed of machinery, a cylinder as L, having piston as M and piston rod as M¹ encrenced by a spring as N, such cylinder being provided with inlet pipe as K, and outlet passage as Q, and port as P, which said port is regulated by an adjustable valve as Q, as and for the purposes described.

4th. In governors for controlling the speed of machinery, the combination with a cylinder as L, having an outlet passage as O