

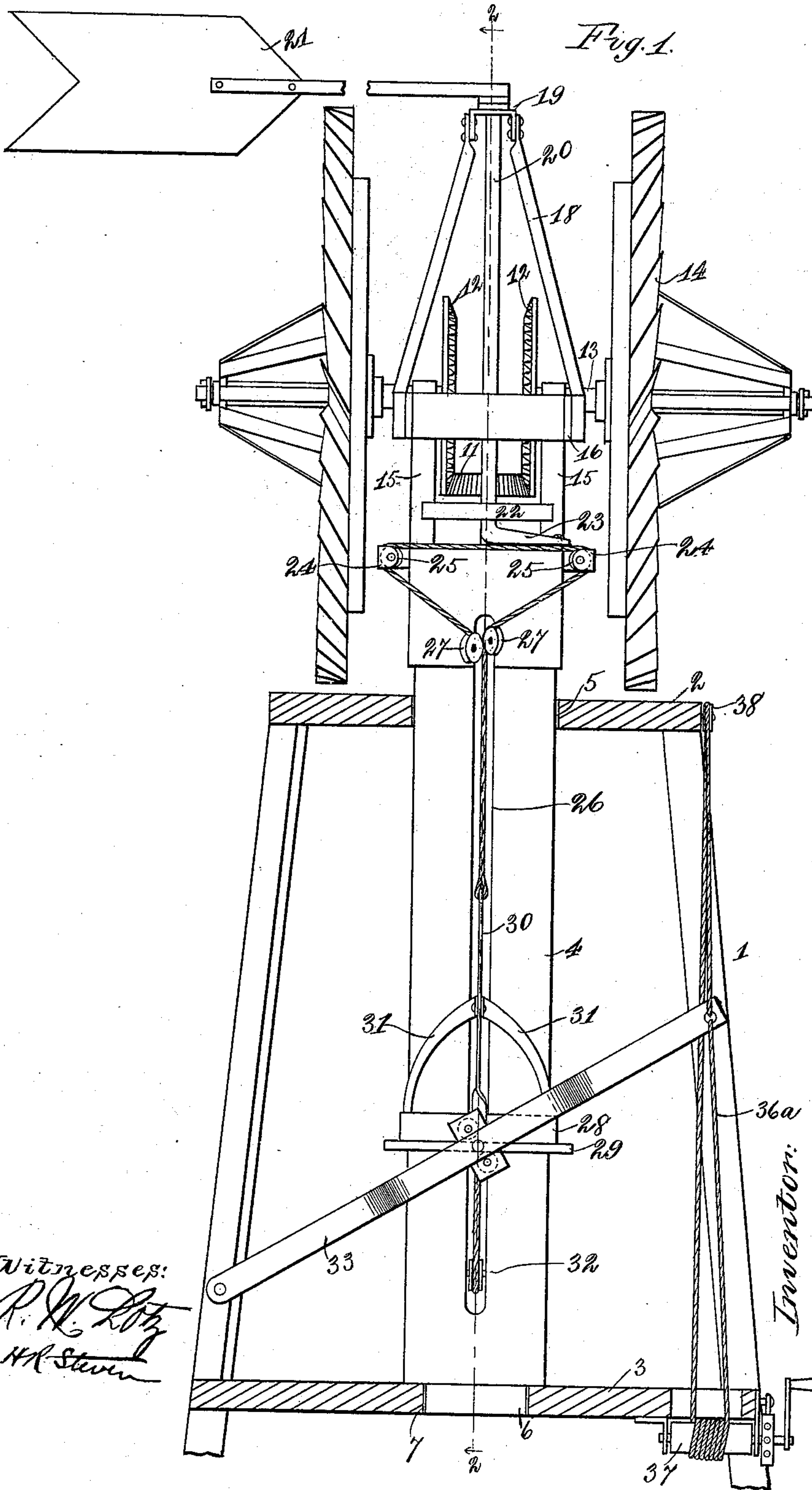
(No Model.)

2 Sheets—Sheet 1.

R. SCHMIDT.
WINDMILL.

No. 543,194.

Patented July 23, 1895.



Witnesses:

R. H. Ritz
H. A. Stearn

Inventor:

Reimar Schmidt

By *Samuel C. Kennedy*
Attorney.

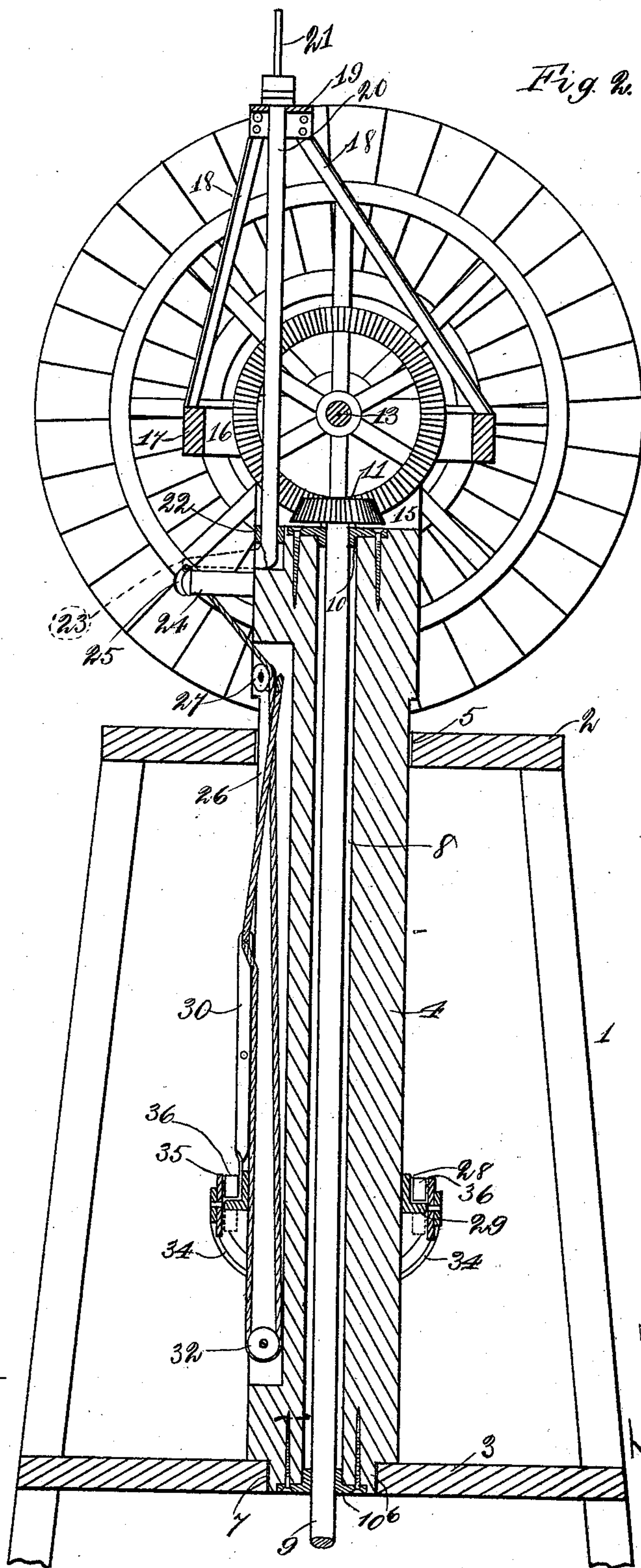
(No Model.)

2 Sheets—Sheet 2.

R. SCHMIDT.
WINDMILL.

No. 543,194.

Patented July 23, 1895.



Witnesses:
R. L. Lohy
H. R. Stever

Inventor:
R. Schmidt
By J. C. Kennedy.
Attorney.

UNITED STATES PATENT OFFICE.

REIMAR SCHMIDT, OF HAYTON, WISCONSIN.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 543,194, dated July 23, 1895.

Application filed September 12, 1894. Serial No. 522,903. (No model.)

To all whom it may concern:

Be it known that I, REIMAR SCHMIDT, a citizen of the United States, residing at Hayton, in the county of Calumet and State of Wisconsin, have invented certain new and useful Improvements in Windmills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a novel construction in a windmill, the object being to provide novel and efficient devices in a device of this kind.

The invention consists in the features of construction and combinations of parts hereinafter fully described and specifically claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is an elevation of a windmill constructed in accordance with my invention. Fig. 2 is a central vertical section taken on the line 2 2 of Fig. 1.

Referring now to said drawings, 1 indicates the tower of the windmill provided with a top piece 2 and a cross-piece 3 a little below the upper end of said tower.

4 indicates the spindle for carrying the windmills and vane, said spindle passing through an opening 5 in the top piece 2, and a step or pivot 6 at its lower end to rest in an opening 7 in the cross-piece 3. The said spindle 4 can thus turn within the openings 5 and 7, and is provided with a longitudinal opening 8 for the passage of the power-shaft 9, that turns in bearings 10 at the opposite ends of the spindle 4. The said shaft 9 is provided with a miter-gear 11 at its upper end, which intermeshes with miter-gears 12, carried by the shafts 13 of the wind-wheels 14. These wind-wheels 14 have their shafts mounted in uprights 15 upon the upper end of the spindle 4 in a familiar manner.

From the foregoing description it will be seen that as the wind-wheels 14 revolve the rotary motion is communicated to the shaft 9 through the intermediacy of the gears 10 and 12. A rectangular frame is secured to the upper end portions of the uprights 15, consisting of side pieces 16 and end pieces 17. Mounted upon the rectangular frame are a plurality of braces 18, that rise to about the height of the wheels 14, and are provided with

a bearing-plate 19 to receive the shaft 20 of the vane 21. The lower end of this shaft 20 passes through a bearing 22 and is provided with a crank or bent end 23. Mounted upon the spindle 4, adjacent to the crank end 23 of the shaft 20, are two outstanding arms 24, provided on their outer ends with pulleys 25. The said spindle 4 is provided about midway between the arms 24 with an upright groove 26, provided at its upper end and on either side with pulleys 27. Mounted upon and sliding upon the spindle 4 at the lower end portion of the same is a sliding collar 28, having a horizontal flange 29, and provided opposite said groove 26 with an uprising bar 30, suitably braced by braces 31. In the lower end of the slot or groove 26 is a pulley 32. A cord or strand 33 has its opposite ends connected with the upper end of the bar 30 and is trained from the upper end of this bar up and over one of the pulleys 27, then up and around the pulleys 24, then down and around the other of the pulleys 27, then down and around the pulley 32, and then up to its other connection with the bar 30. The outer end of the crank-arm 23 of the vane-shaft 20 is secured to said rope or strand between the pulleys 25.

From the foregoing description it will be seen that the vane 22 is connected with and controlled by the sliding collar 28, and that as said collar moves up and down the said vane will be turned parallel with or at right angles to the wind-wheels to keep the same in or out of the wind.

To elevate and depress the collar 28, I employ a lever 33, that is pivoted at one end to one of the uprights of the tower and has a connection with the collar between its ends and is provided at its free end with devices for turning it on its pivot. The said lever 33 is provided between its ends with a loop or enlargement 34 to pass around the spindle, and the sides of said loop carry plates 35, that are provided with antifriction-rollers 36, located above and below the flange 29. The free end of the lever 33 is connected with a cord or strand or belt 36^a, that is trained around a winding-drum 37 and a pulley 38, mounted upon the tower of the windmill.

From the foregoing description it will be seen that by winding the belt 36^a upon the drum 37 the lever 33 can be turned on its

pivot to move the collar 28 upon the spindle, and thus through the intermediacy of the strand or belt 33 swing the crank end of the vane-lever 20 and turn the vane parallel with
5 or at right angles with the wheels, for the purpose described.

I claim as my invention—

In a windmill, the combination with the wind wheels 14 mounted upon a revoluble
10 spindle, of a vane carried by an upright shaft 20 mounted in bearings upon said spindle, an arm 23 secured to the lower end of said shaft 20, cords 26 secured to said arm 23 and running over pulleys 25 mounted in bearings in
15 the ends of arms 24 secured to said spindle and over pulleys 27 secured to said spindle, one of said cords being connected at its other end to the end of an arm 30 secured to a collar 28 on said spindle, and the other of said

cords 26 passing over a pulley 32 secured to 20 said spindle at its lower end portion and passing thence upwardly and secured at its other end to said arm 30, and means for raising and lowering said collar 28 consisting of a lever 33 pivotally mounted upon the frame of the 25 machine and engaging an annular flange on said collar, said lever 33 being adapted to be turned upon its pivot to raise and lower said collar during its revolution by a cord connected at its ends to the end of said lever 33 30 and adapted to be operated by a reel 37, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

REIMAR SCHMIDT.

Witnesses:

T. E. CONNELL,
PATRICK MCHALE.