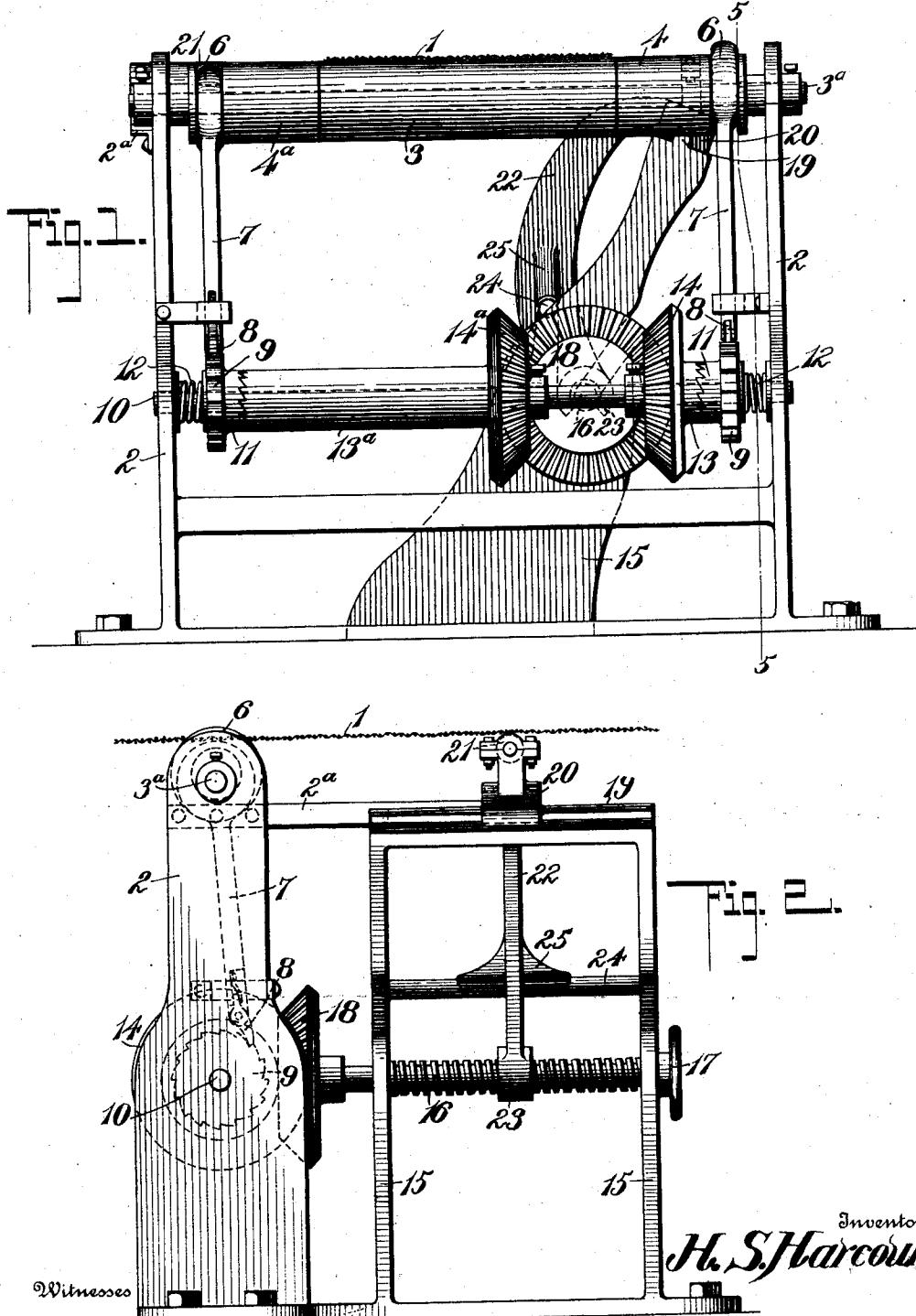


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2 SHEETS—SHEET 1.



Witnesses

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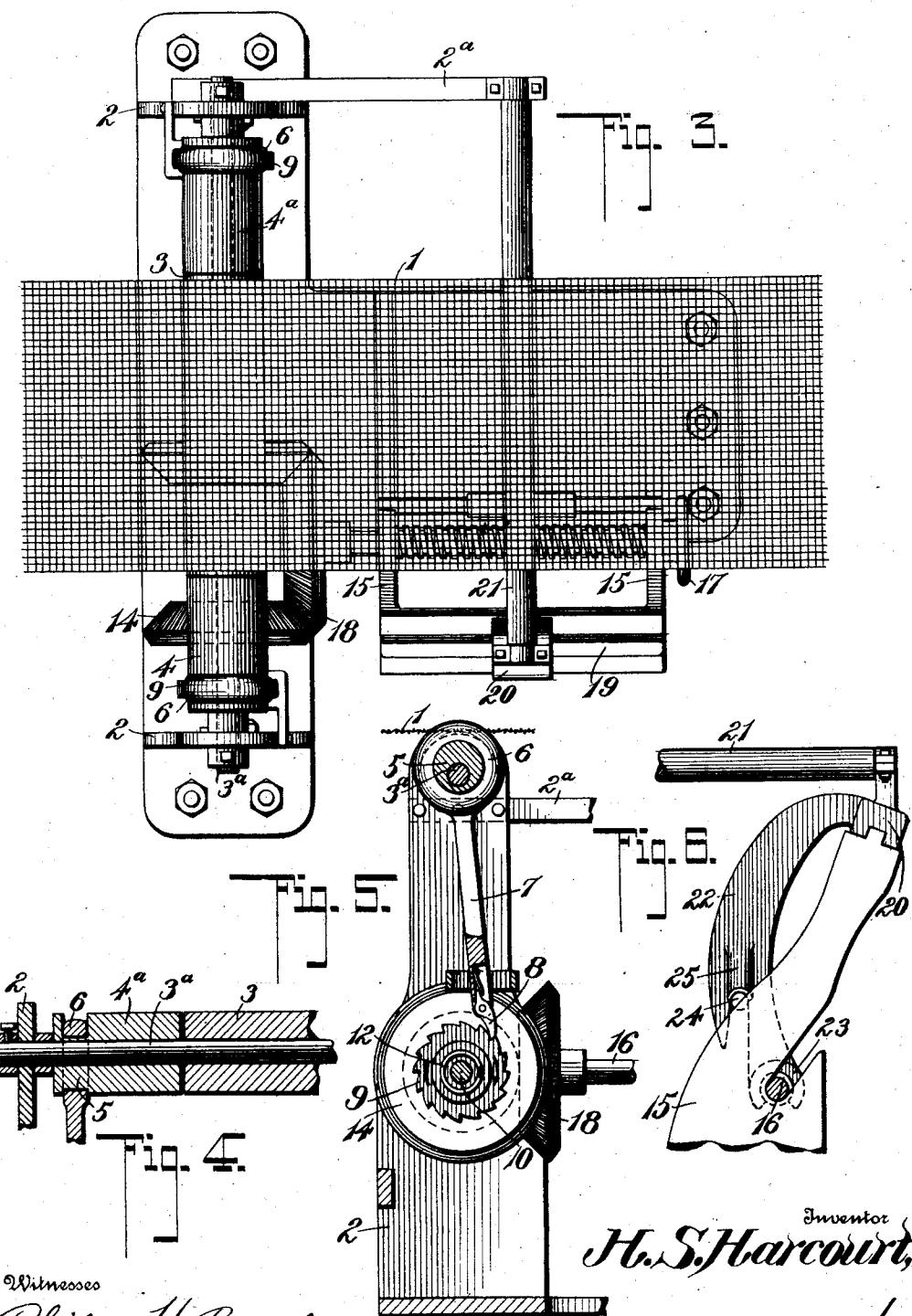
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# UNITED STATES PATENT OFFICE.

HARRY SAMEL HARCOURT, OF ERIE, PENNSYLVANIA.

## WIRE-GUIDE FOR PAPER-MAKING MACHINES.

No. 906,877.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed February 17, 1908. Serial No. 416,317.

*To all whom it may concern:*

Be it known that I, HARRY S. HARCOURT, a citizen of the United States, residing in Erie, in the county of Erie and State of Pennsylvania, have invented a new and useful Improvement in Wire-Guides for Paper-Making Machines, of which the following is a specification.

This invention relates to a wire guide and is intended to guide in a straight direction the wire netting used in connection with paper making machines.

I am aware of the fact that guides have been provided for the purpose of compelling the wires to travel along a perfectly straight line but the devices of this kind which I have seen in practical use are so constructed that in checking the tendency of the wire to travel to one side or the other they create more or less friction upon the edges of the wire, thus tending to wear the said edges and making it necessary to be constantly repairing the broken edges. I have therefore endeavored to arrange a guide for wires of this class which would act directly upon the under surfaces of the wire, and not upon its edges, thus subjecting the said edges to no strain or wear than they are subjected to when running under normal conditions.

With this object in view, my invention consists of a supplemental roller over which the wire passes, said roller being loosely held at one end and slidably at the opposite end, with means operated by travel of the wire for swinging said supplemental roller when the wire leaves the straight path, thereby throwing the supplemental roller out of parallel relationship with the regular roller over which the wire travels, thus bringing the wire back into proper position.

In the accompanying drawings—Figure 1 is a side elevation of my device. Fig. 2 is an end view. Fig. 3 is a plan view. Fig. 4 is a detail sectional view. Fig. 5 is a section on the line 5—5 of Fig. 1. Fig. 6 is a detail side elevation of a portion of the guiding apparatus, the shaft being in section.

In these drawings 1 represents the wire to be guided and 2 designates a frame in which is mounted a roller 3 over which the wire 1 travels and upon which it is to be guided by the devices hereinafter described. The roller 3 is mounted loosely upon a shaft 3<sup>a</sup> carried by the frame 2 and upon the same shaft and adjacent the ends of the roller 3 are

loosely mounted sleeves 4 and 4<sup>a</sup>, respectively. Each of these sleeves is provided with an eccentric portion 5 on which works an eccentric strap 6 to which is connected an eccentric rod 7. The lower end of each rod 7 is recessed and in said recess is pivotally mounted a spring pressed pawl 8 which engages a ratchet wheel 9 mounted loosely upon a shaft 10. Each ratchet wheel is provided with a clutch 11 and these clutches are held by springs 12 into engagement with hub portions 13 and 13<sup>a</sup>, respectively to bevel gear wheels 14 and 14<sup>a</sup>. It will be understood that the clutches 11 are oppositely formed so that as one engages its co-acting hub the other will slip, and it will also be understood that the pawls 8 engage their respective ratchet wheels upon the same sides of the shaft 10 so that they will drive the bevel gear wheels 14 and 14<sup>a</sup> in opposite directions.

In a supplemental frame 15 arranged at right angles to the frame 2 and upon one side of the path of travel of the wire 1 is journaled a worm gear 16 provided at one end with a hand wheel 17 and at the opposite end with a bevel gear 18 which meshes with the bevel gears 14 and 14<sup>a</sup>. The upper portion of the frame 15 carries a track way 19 upon which slides a block 20 in which is loosely journaled one end of a supplemental roller 21 the other end of which is loosely held in suitable bearings formed by an extension 2<sup>a</sup> of the frame 2. The block 20 is provided with a curved downwardly extending arm 22 the lower portion of which is provided with a semi-circular edge 23 which rests upon a worm gear 16 and travels along the same. To support the arm and also hold it steady a shaft 24 is carried by the supplemental frame 15 and the arm 22 is bifurcated to straddle said shaft and is provided upon its opposite sides with lugs 25 which slide upon the said shaft, the under faces of said lugs being concave to fit the shaft 24.

The operation of the device is as follows:— As long as the wire 1 travels in a straight direction it would bear only upon the roller 3 but should it slide to the right, as seen in Fig. 1, its marginal portion will travel upon the sleeve 4, rotating the said sleeve, the eccentric rod connected thereto and through the pawl 8 carried by said rod the ratchet wheel 9 and the clutch 11, thus turning the hub 13, the bevel gears, and the worm gear 16. The direction of rotation of the worm gear 16

when so driven will be right handed and the block 20 being in engagement with said worm gear through its arm 22 will be moved toward the frame 2 thus swinging the end of the supplemental roller 21 loosely carried by the said block toward the frame 2. This inclination of the roller 21 toward the right hand end of the frame 2 will bring the wire 1 back into proper position upon the roller 3. Should the wire pass over upon the sleeve 4<sup>a</sup> the hub 13<sup>a</sup> will be driven in the same manner, thus driving the worm gear 16 in the opposite direction, and shifting the block 20 away from the frame 2, again throwing the wire back into proper position upon the roller 3. It will be obvious that the sliding movement of the block 20 will be very slight and the immediate shifting of the roller 21 will correct any longitudinal sliding movement of the wire upon the roller 3 almost as soon as said movement has commenced so that the wire will travel practically in a straight path at all times. It will also be noted that the supplemental roller bears entirely upon the under surface of the wire serving as a support for the same and not upon the side edge of the wire. There is consequently no tendency upon the part of the guiding mechanism to wear or fray the selvage of the wire, or to crimp it as would be the case if the wire was guided by running it over a roller the ends of which were enlarged and beveled, such rollers acting by bending upwardly the edge of

the wire which might ride upon their bevel portions.

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

1. The combination with a wire supporting roller, sleeves of the same diameter as the roller loosely mounted adjacent the ends of said roller, a supplemental supporting roller loosely held in fixed bearings at one end, a 40 slideable bearing for the other end of said roller, and means operable through rotation 45 of said sleeves for shifting the said slideable bearing alternately toward and away from the first mentioned roller.

2. The combination with a wire supporting roller, loosely mounted sleeves arranged 50 adjacent the ends of said roller, a supplemental normally parallel roller, said roller being loosely mounted in fixed bearings at one end, a slideable block forming a bearing for the other end of the supplemental roller, a worm 55 gear, an arm carried by the block said arm being in engagement with the worm gear and means connecting said sleeves to the worm gear, rotation of one sleeve driving the worm gear in one direction and rotation of the other 60 sleeve reversing the direction of rotation of the one gear.

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Witnesses:

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