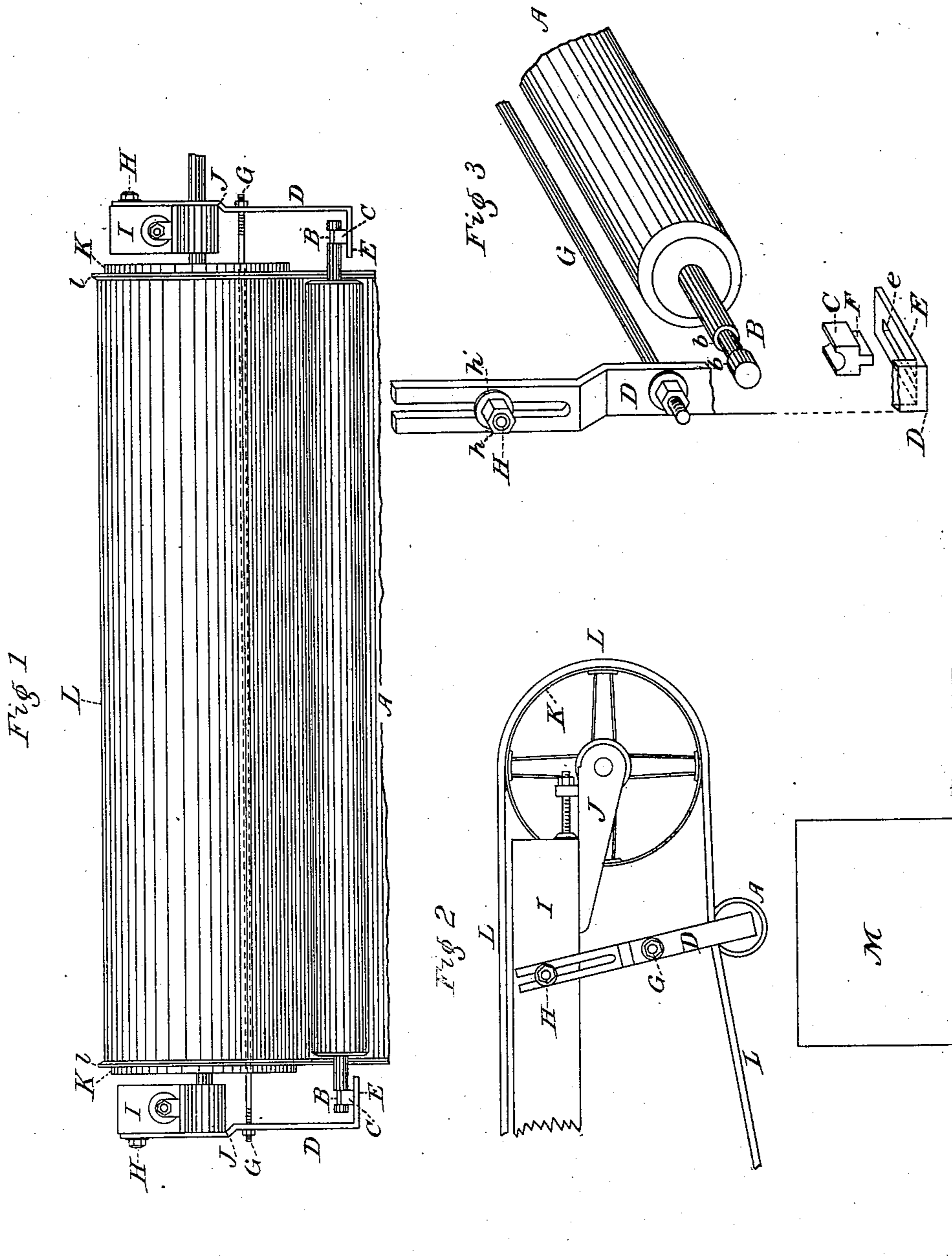


(No Model.)

W. H. HOOPER.  
VANNING MACHINE AND CONCENTRATOR.

No. 565,355.

Patented Aug. 4, 1896.



Witnesses

George H. Reeder

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per *Edward F. Russel*

Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM HORACE HOOPER, OF EMPIRE, MONTANA.

## VANNING-MACHINE AND CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 565,355, dated August 4, 1896.

Application filed July 10, 1893. Renewed March 6, 1896. Serial No. 582,072. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HORACE HOOPER, a citizen of the United States, and a resident of Empire, county of Lewis and Clarke, State of Montana, have invented a new and useful Improvement in Vanning-Machines and Concentrators, of which the following is a specification.

In vanning-machines it is customary to pass the belt through a washing-box beneath the machine, in which the concentrates are washed from the belt by the action of the water. These concentrates are then drawn from the washing-box with a hoe into another box, in which or from which they are carried away to the place of storage.

My invention is intended to obviate the labor of moving the concentrates once by removing the great bulk of them from the belt before it reaches the washing-box. It consists simply in a roller hung beneath and in contact with the belt a short distance from the head-roller, and in the peculiar character of the hangers supporting it. I show it in connection with the Frue vanning-machine.

Similar letters refer to similar parts in all the drawings.

Figure 1 shows an elevation of head-roller and cleaning-roller. Fig. 2 shows an end elevation of same. Fig. 3 shows a perspective view of hanger and part of cleaning-roller.

Fastened to the frame I at a short distance from the head-roller K, by the bolts H H, are the hangers D D, slotted at their upper ends and having a slotted step E, turned inward at right angles, at their lower ends. The rod G runs across from hanger to hanger, threaded at each end for a short distance, and stiffens the hangers.

On the step E plays the half-round box or bearing C, having the tongue F to run in the slot e.

The cleaning-roller A, of the width of the belt inside the raised edges l l, works in the boxes C C at its bearings B B, which are provided with the shoulders b b. Beneath the cleaning-roller A is placed the box M for catching the concentrates.

In operation the hangers D D are so adjusted as to place the cleaning-roller, preferably made of wood, a little forward of the

perpendicular from the bolt H to the belt L, and so as to raise the belt slightly at the point of contact. The slot in the hanger D permits such adjustment, and the position is secured by the bolt H, the nut h, and the washer h'. The cleaning-roller turns with the belt to avoid friction and wearing. The box C moves freely upon the step E the length of the slot e, and thus permits the cleaning-roller A to adapt itself to any side motion of the belt L occasioned by the shaking motion of the frame I.

This attachment may be used with any vanning or concentrating machine using the continuous belt. Its working is very simple and effective, and consists in producing a dam or obstruction against the belt, holding back the water clinging to the belt, whereby the concentrates come off readily from the belt with the water and drop freely into the box M.

The belt should still be passed through the washing-box to secure any matter not removed by the cleaning-roller, but there will be but little, and the labor of drawing out the concentrates from the washing-box is practically dispensed with.

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

1. In a vanning or concentrating machine, the combination with the belt and its carrying-rollers, a tank for receiving the concentrates and a cleaning-roller arranged in contact with the belt so that the concentrates removed from the belt by the cleaning-roller will drop into the tank, substantially as described.

2. In combination with a concentrator-belt, having a smooth surface, the carrying-rollers and a cleaning-roller placed beneath and in contact with the belt near the head-roller, said cleaning-roller also having a smooth surface to coact with that of the belt, substantially as described.

3. In a vanning or concentrating machine, the combination with the belt, of the cleaning-roller, having a smooth surface, placed beneath and pressed close against the belt, near the head-roller, and supports carrying self-adjusting bearings for said cleaning-roller, substantially as shown and described.

4. In a vanning or concentrating machine, the combination of the belt and the cleaning-roller, with adjustable hangers, slotted at the upper ends, and having slotted steps, to carry  
5 sliding boxes for said roller, substantially as shown and described.

5. In an ore-concentrator, the combination with an endless belt, passing over an end roller and the roller so as to present an in-  
10 clined surface between the two rolls, of a roll arranged in advance of the concentrator-belt and driven by frictional contact therewith, the rotation of said separating-roll be-

ing in the same direction as the travel of the belt so as to form a water-cushion at the  
15 point of union with the belt by which water-cushion the sulfurets are removed from the surface of the belt.

In testimony that I claim the foregoing as my invention I have signed my name, in pres-  
20 ence of two witnesses, this 30th day of June, 1893.

WILLIAM HORACE HOOPER.

Witnesses:

WILLIAM A. HASLAM,  
JAMES O'NEILL.