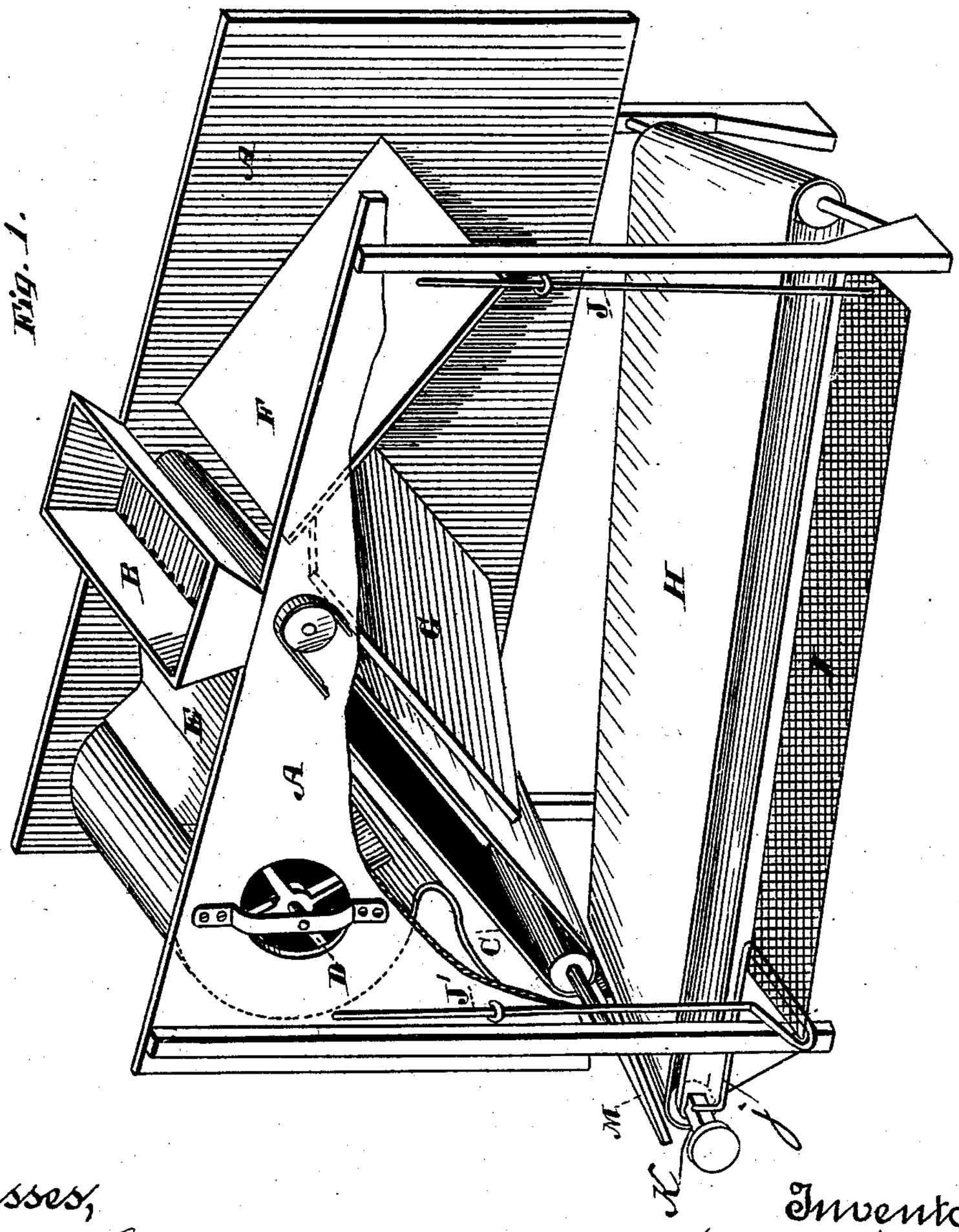
(No Model.) 2 Sheets—Sheet 1.

M. WILCOX.

GRAIN SEPARATOR.

No. 272,178. Patented Feb. 13, 1883.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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GRAIN SEPARATOR.

No. 272,178. Patented Feb. 13, 1883.

Fig. 2.

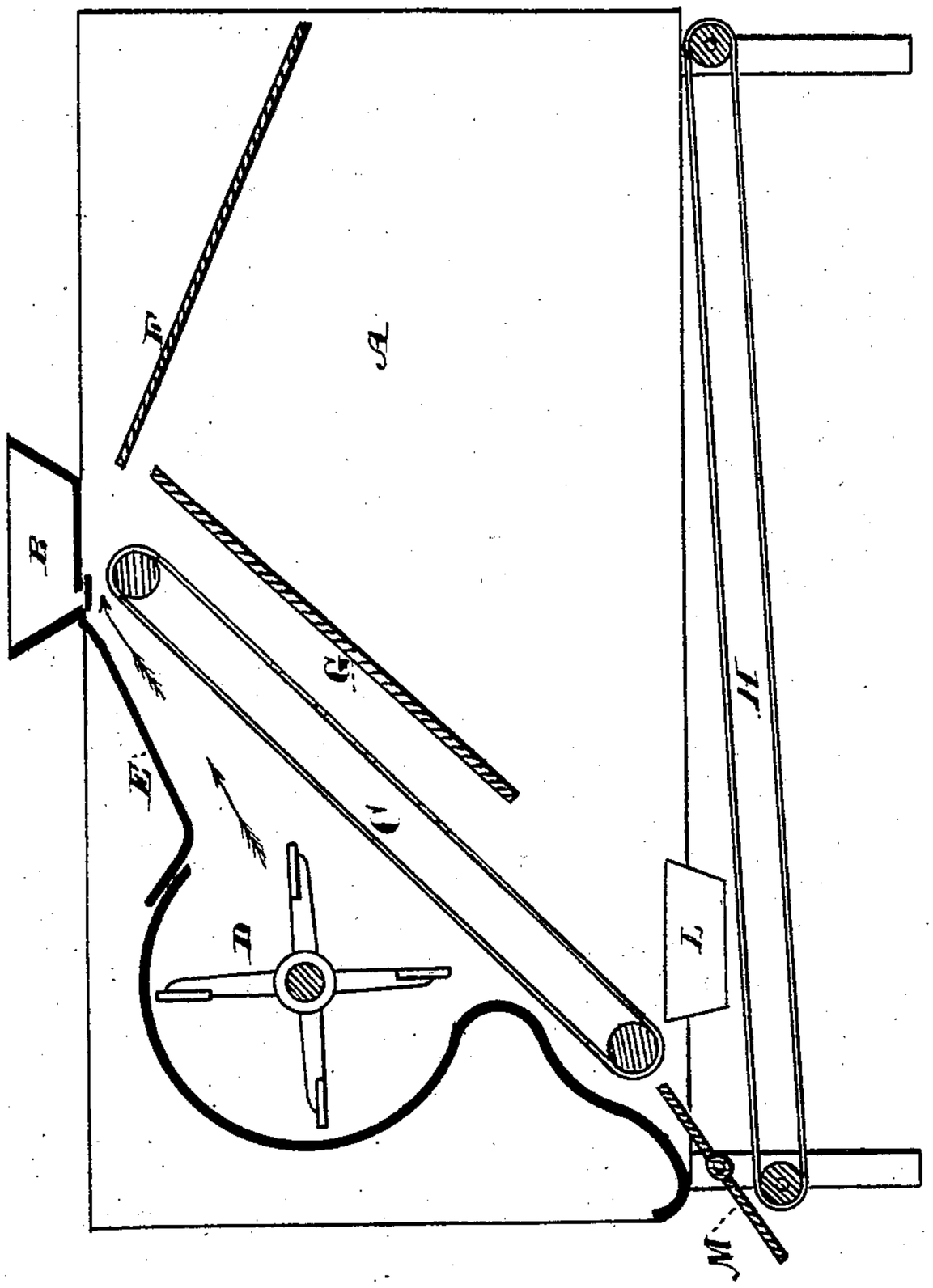
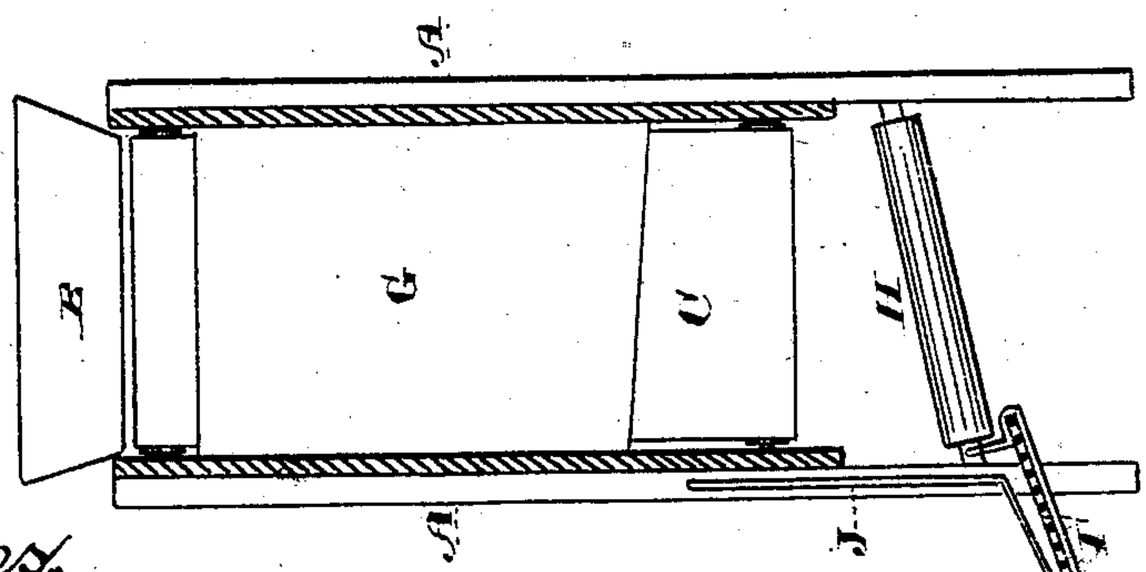


Fig. 3



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UNITED STATES PATENT OFFICE.

MARTIN WILCOX, OF PASKENTA, CALIFORNIA.

GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 272,178, dated February 13, 1883.

Application filed September 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, MARTIN WILCOX, of Paskenta, county of Tehama, State of California, have invented an Improved Grain-Separator; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to improved means for separating wheat from barley, oats, and small grains or seeds after the grain has been cleaned from the straw and chaff.

Figure 1 is a perspective view of my improved wheat-cleaning apparatus with a portion of one side broken away. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a transverse section of the same.

A is a suitable frame-work, in which the mechanism is supported.

B is a hopper, from which the grain is discharged through a regulating-gate upon an inclined moving belt or draper, C, which lies at an inclination of about thirty degrees, more or less, as the work requires, and moves upward. Above this belt is a blower, D, or other suitable blast apparatus, so arranged as to discharge a blast of air up the face of the belt and against the descending grain. A wind-gate, E, self-adjusting by its own gravity, made of canvas or other flexible material, is supported above the belt, and may be used to regulate the blast upon the belt. At the foot of the belt C, with a little space between, is placed a pivoted inclined division-board, M, to receive a portion of the descending grain from the belt C and discharge it beyond the belt H. When the air-blast is on and belt C is in motion grain dropped on the upper end of the belt C will roll downward. The full-formed heavy kernels of wheat move downward faster than the belt moves upward and drop at the lower end of the belt, whereas shriveled wheat, oats, cheat, and barley, moving slower, are carried up and off at the upper end. Of what passes down the belt, the larger, heavier kernels acquire a velocity that carries them onto and beyond the inclined board M, whereas the lighter, slower part falls short upon the belt H. Of what is discharged from the upper end of the belt, the lightest portion is driven by the air-blast off above the smut-board F. The heaviest falls upon board G, and that of medium weight passes down between boards F and G.

G is a board to receive any good grain which may be carried over the upper end of the belt C, but not with sufficient force to pass beyond the end of this board, as the smutty grain does. This board stands at an incline in the same direction as the belt C, and is also tilted, so that grain moving down it will also move to one side and be discharged from the lower edge, so as to fall upon the higher edge of the belt H. This belt, which also receives grain from the lower end of the belt C, has its receiving end slightly inclined from a horizontal plane, (taken in a transverse direction,) and this inclination gradually increases toward the opposite end, so that at that end the inclination is quite steep. This arrangement of belt H enables me to separate the wheat from oats and other impurities by gravitation. The good wheat, with full kernels, will roll off the most moderate incline. The lighter, shriveled wheat will remain and be carried along by the belt until the incline becomes great enough to discharge it, while the oats will either lie upon their flattened sides or will roll until the larger ends of the grain, outrunning the smaller, will lie lengthwise down the incline and stop. This belt passes around a roller at each end, and is driven by belt-pulleys from any convenient moving pulley upon the machine. By its forward movement the different qualities of grain are carried along so as to be discharged at different points over the edge of the belt, falling upon a shaking screen, I, which stands at a slight angle transversely. This screen is suspended by spring-arms J J′, and is given a shaking motion by the action of the angular portion of the shaft K, which strikes a projecting end, *j*, of the spring-rod J′, and gives it, together with the screen I, a shaking motion. This separates the smaller seeds, which will fall through the screen, while the different grades of wheat will be discharged over its edge opposite the points where they are discharged upon it from the inclined belt H. By this construction, and the arrangement of the moving belt H, inclined sidewise, I am enabled to distribute the grain along this belt and discharge it upon the screen at different points,

so as to separate seed-wheat, milling and market wheat from impurities and from each other at one running.

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

1. In a grain-separator, a grain-carrying belt, H, having from one end toward the other a progressively-increased sidewise inclination, substantially as described.

2. In a grain-separator, the belt H, inclined in a plane transverse to its line of travel, in combination with the screen I, suspended beneath the lower edge of belt H, and mechanism to give said screen a shaking motion, substantially as specified.

3. In a grain-separator, the traveling belt H, inclined in a plane transverse to its line of travel, the screen I, the hopper B, and inclined belt C, in combination with the blower D, self-adjusting gravity wind-gage E, and the inclined direction-board F, substantially as herein described.

In witness whereof I hereunto set my hand.

MARTIN WILCOX.

Witnesses:
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JACKSON EBY,
P. C. SCOTT.