

No. 660,925.

Patented Oct. 30, 1900.

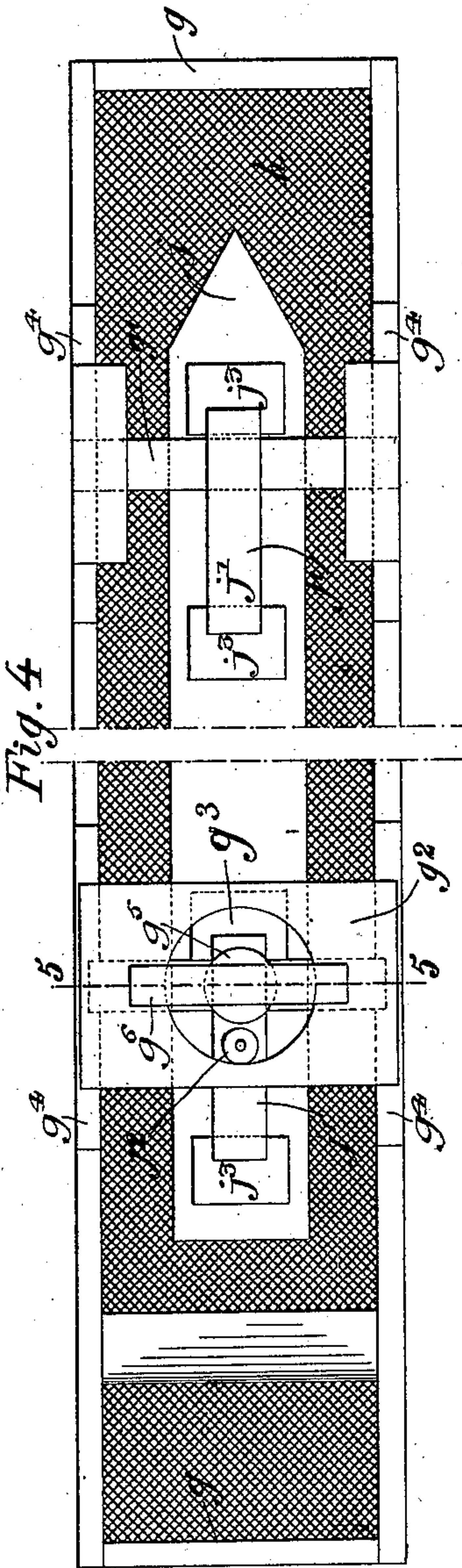
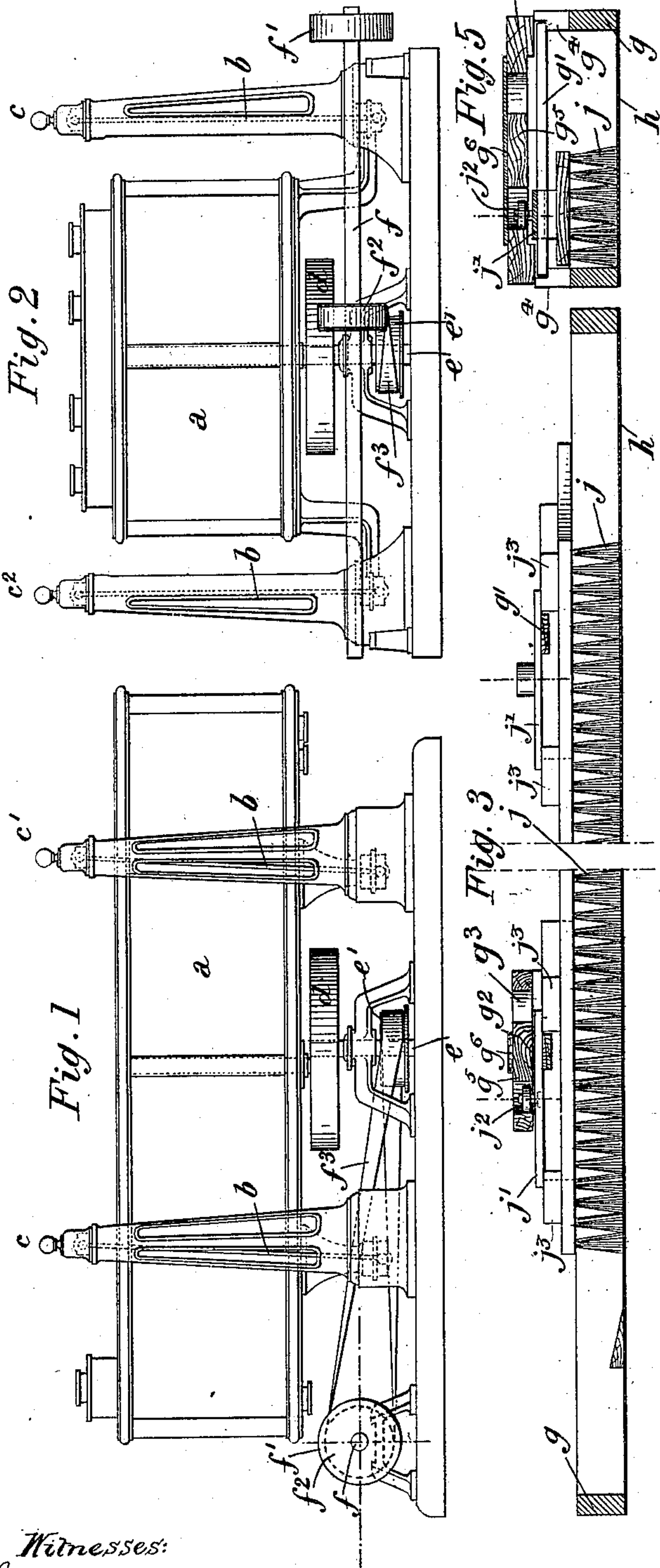
H. & G. ROSE.

PLANSIFTER.

(Application filed Oct. 20, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
James C. Krayer  
J. C. Bechtold

Inventors:  
Henri Rose and  
Georges Rose  
by their Attorneys.

Howson & Howson



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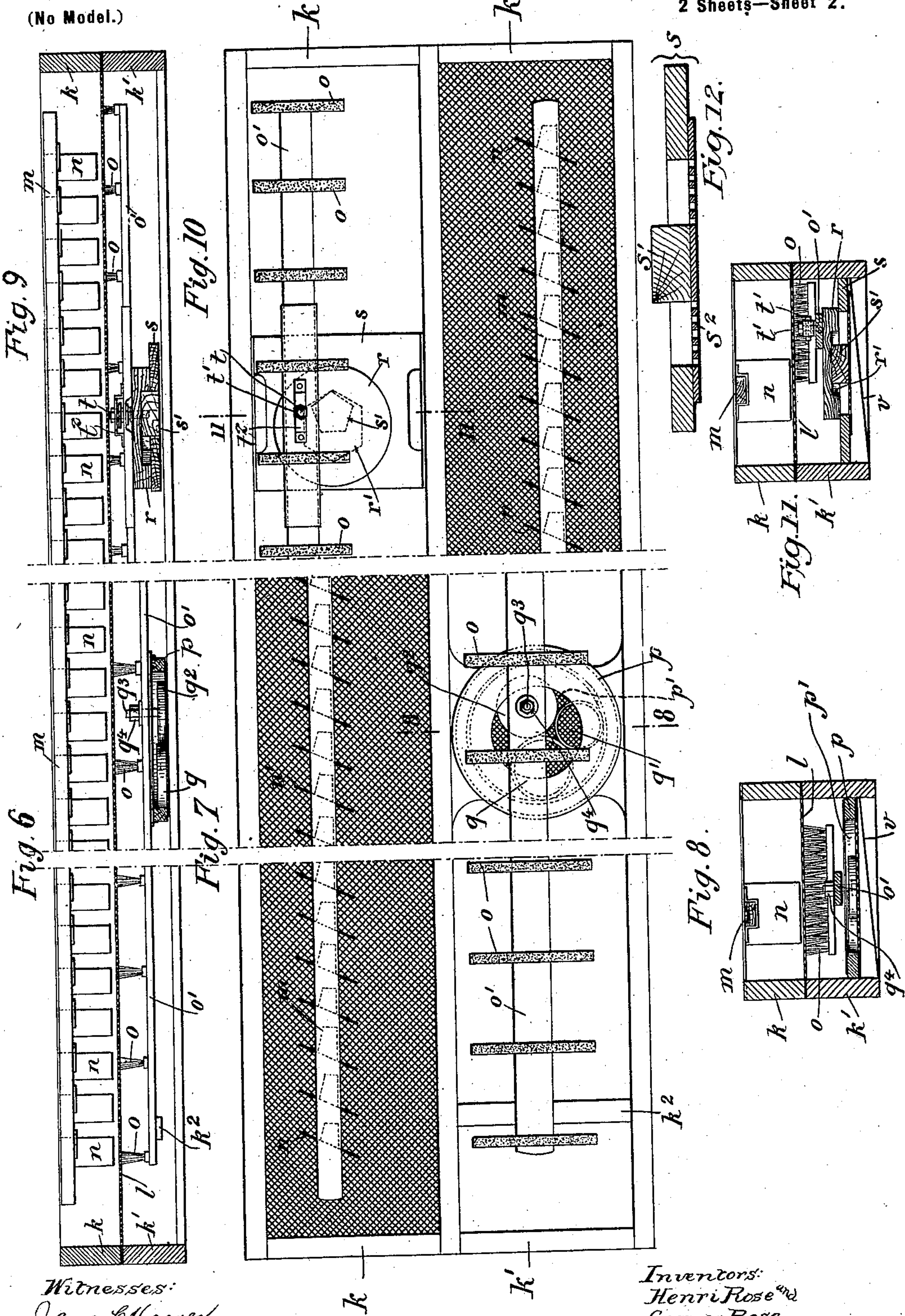
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H. & G. ROSE.  
PLANSIFTER.

(Application filed Oct. 20, 1897.)

2 Sheets—Sheet 2.

(No Model.)



Witnesses:  
James C. Hager  
F. C. Bechtold

Inventors:  
Henri Rose and  
Georges Rose.  
by their Attorneys  
Houston & Houston



# UNITED STATES PATENT OFFICE.

HENRI ROSE AND GEORGES ROSE, OF POISSY, FRANCE.

## PLANSIFTER.

SPECIFICATION forming part of Letters Patent No. 660,925, dated October 30, 1900.

Application filed October 20, 1897. Serial No. 655,783. (No model.)

*To all whom it may concern:*

Be it known that we, HENRI ROSE and GEORGES ROSE, citizens of the Republic of France, residing at Poissy, department of Seine-et-Oise, France, have invented certain new and useful Improvements in Plansifters, (for which we have obtained Letters Patent in France, No. 255,505, dated April 13, 1896, with two additions dated September 18, 1896, and October 12, 1896; in Belgium, No. 127,266, dated March 29, 1897, and in Russia, application filed April 17, 1897,) of which the following is a specification.

The present invention consists of certain improvements in the cloth-brushing and stock-propelling devices employed in plansifters (whether rectangular or circular) having a sieve-box which is suspended a certain distance from the ground and has imparted to it a gyratory motion, the main object of our improvements being to utilize said gyratory motion for effecting the operation of such cloth-brushing and stock-propelling devices without the necessity of employing independent mechanism for the purpose, whether such devices are above or below the sifting-surfaces or sieves. By this means the crushed grain or stock is rubbed in order to detach the flour therefrom, a regular progressive motion both of the stock and of the sifted material is insured, and the sieves or sifting-surfaces are thoroughly and constantly brushed and cleaned.

In the annexed drawings we have shown by way of example the application of our improved cloth-brushing devices and stock-propelling devices to an ordinary rectangular plansifter; but it will be readily understood that the same devices can be equally well applied to a circular plansifter.

Figures 1 and 2 are respectively a side view and an end view of a plansifter built in accordance with our invention and having a rectangular box. Fig. 3 is a longitudinal section of one of the sieves with an upper brush working in conjunction therewith and means for controlling the operation of said brush. Fig. 4 is a plan or top view of the sieve, the brush, and the controlling mechanism therefor. Fig. 5 is a transverse section on the line 5 5, Fig. 4. Fig. 6 is a longitudinal section of part of the sieve, showing the cleaning-brush beneath

the same and a special stock-propelling device above the same. Fig. 7 is a plan or top view of the construction shown in Fig. 6, one part of said view showing the stock-propelling device above the sieve and the other part of said view showing the sieve removed and the brushing devices which are employed below the same. Fig. 8 is a transverse section on the line 8 8, Fig. 7, but showing both the stock-propelling device above the sieve and the brushing device and its controller below the sieve. Fig. 9 is a longitudinal section of part of the sieve structure, showing another form of sieve-controlling device. Fig. 10 is a top or plan view of the structure shown in Fig. 9, one half of said view showing the stock-propelling device above the sieve and the other half of the view showing the brush-frame and its controller below the sieve. Fig. 11 is a transverse section on the line 11 11, Fig. 10, but showing a feature of the invention not shown in said Fig. 10; and Fig. 12 is a section, on an enlarged scale, of one of the elements of the device shown in Fig. 11.

The box *a* of the plansifter is suspended by rods *b*, which are connected at their lower ends by universal joints to brackets on the box and at their upper ends by similar universal joints to suitable hangers at the tops of the columns *c c*, *c'*, and *c''*. The box receives its gyrating motion from a crank-disk *d*, secured upon a vertical shaft *e*, and rotary motion is imparted to the latter from a horizontal shaft *f*, the latter having a pulley *f'* for receiving a driving-belt and another pulley *f''*, which, by means of a twisted belt *f'''*, drives a pulley *e'* on the vertical shaft *e*, and as the box *a* is free to move to a limited extent in any direction horizontally because of the swinging character of its supports the resultant motion imparted to the box by the disk *d* is a gyrating motion.

The box *a* contains a number of compartments or sieves, which coöperate either with detaching-brushes placed above the sifting-surfaces, as in Figs. 3, 4, and 5, or with cleaning-brushes placed below said sifting-surfaces and operating in conjunction with stock-propelling devices above the sieves, as in Figs. 6 to 11.

Each of the sieves shown in Figs. 3, 4, and 5 consists of a frame *g*, which is suitably se-



cured to the box *a* and has a bolting-cloth or other sifting-surface *h* and a detaching-brush *j* above the same, the latter being suspended above the cloth by means of cross-pieces *g'*,  
 5 mounted upon blocks *g<sup>4</sup>* on the sieve-frame and serving as supports for bars *j'*, which span the spaces between the blocks *j<sup>3</sup>* on the back of the brush.

When the plansifter is in action, the inertia of the brush *j* tends to cause movement of said brush in relation to the frame *g* of the sieve, and such movement is governed by a controller consisting of a bar *g<sup>2</sup>*, mounted upon the blocks *g<sup>4</sup>* and having a circular or  
 15 elliptical groove or channel *g<sup>3</sup>*, in which is free to travel an antifriction-roller *j<sup>2</sup>*, mounted upon a pin or bolt which projects upwardly from the bar *j'*. In the present instance a circular groove or channel is formed in the  
 20 controller *g<sup>2</sup>* by forming a circular opening in the latter and mounting centrally therein a circular block *g<sup>5</sup>*, which is carried by a cross-bar *g<sup>6</sup>*.

In the sieve shown in Figs. 6 to 11 the bolting-cloth or other sifting-surface *l* is confined between frames *k k'* one above the other, and in the upper frame or above the sieve are arranged a series of rakes mounted upon a common bar *m*, the purpose of said rakes being  
 30 to propel the stock. The said rakes are formed of inclined scrapers *n*, the lower edge of each of these scrapers being as close as possible to the surface of the sieve *l* without touching the same, a result which is effected by mounting the bar *m* at the proper distance above the sieve. The cleaning-brushes *o* are carried by a bar *o'*, which is suitably supported upon transverse bars *k<sup>2</sup>* in the lower frame  
 35 *k'* of the sieve-casing, so that it is free to move both longitudinally and transversely.

As shown in Figs. 6 and 7, the brush-controller consists of a ring *p*, suitably mounted in the lower frame *k'* of the sieve structure and having a bottom composed of a sieve *p'*. In  
 45 this ring are similar rings *q q'*, of soft rubber, leather, metal, or other suitable material and of the same or of different diameters, which in connection with the ring *p* serve to restrain and limit the movements of the roller or disk  
 50 *q<sup>2</sup>*, which is suspended from the brush-bar *o'* by means of a bolt *q<sup>3</sup>* and nut *q<sup>4</sup>*.

In the brush-controller shown in Figs. 9 and 10 a block *r*, having a hexagonal recess *r'* in its under side, is secured to the under side of the brush bar or frame *o'*, and into this recess projects a polygonal block *s'*, which projects upwardly from the transverse bar *s*, secured to the sieve-frame *k'*, the effect of this construction being to impart an irregular and  
 55 non-uniform motion to the brush-holder *o'*. The block *r* rests upon the bar *s*, and the brush-bar *o'* may be adjusted vertically in respect to said block by means of nuts *t'*, applied to a threaded bolt *t*, projecting above the block *r*, said nuts *t'* engaging with a yoke  
 65 *t<sup>2</sup>*, secured upon the brush-bar *o'*.

In the construction shown in Fig. 11 the

bar *s* has a central opening closed by a screen *s<sup>2</sup>*, and the block *s'* is carried by this screen and engages with a circular or polygonal recess *r'*, formed in the under side of the block  
 70 *r*. By providing the openings in the ring *p* and bar *s* with sieves *p'* and *s<sup>2</sup>*, as shown, the accumulation of sifted particles therein is prevented and the interference with the operation of the brush-controlling devices which  
 75 would result from such accumulation is overcome. Each of the sieve structures may have the lower frame provided with a transversely-inclined receiving-bar *v*, so as to direct to a  
 80 common point of discharge the material sifted through the screen.

The brushes need not necessarily be arranged as shown in the drawings. For instance, they might be lengthwise of the frames  
 85 instead of crosswise, or in the case of a circular sifter may be curved instead of straight. In all cases, however, the brushes are mounted so as to move as a unit and owe their motion solely to the gyrating movement of the sieve-box, no special mechanism for imparting  
 90 movement to the brushes being required.

We propose to adopt either the brush-operating device shown in Figs. 6, 7, and 8 or that shown in Figs. 9, 10, and 11, depending  
 95 upon whether a uniform or non-uniform motion of the brushes is best suited to the stock which is being treated.

Having thus described our invention, we claim and desire to secure by Letters Patent— 100

1. The combination in a plansifter, of a screen or sieve, means for imparting gyrating movement thereto, a longitudinal brush-carrying bar or frame free to move both longitudinally and laterally in respect to the sieve  
 105 as the latter is gyrated, and a controlling device for said bar or frame, said controlling device consisting of a guard having a recess of circumscribed area, and a projection, the movement of which is restricted by said guard,  
 110 the recess of the latter being of such dimensions as to permit limited movement of the brush bar or frame both longitudinally and laterally but prevent traveling movement of the same, substantially as specified. 115

2. The combination in a plansifter, of the sieve or screen and means for imparting gyrating movement thereto, a series of cleaning-brushes for said screen, a bar or frame connecting said series of brushes and causing  
 120 them to move as a unit, a cross-bar, as *g'*, mounted on the sieve-frame and a bar or plate, as *j'*, mounted on longitudinally-separated supports, as *j<sup>3</sup>*, on the brush-bar and resting on said cross-bar, whereby while the latter  
 125 supports the brush-bar it permits movement of the same both longitudinally and laterally, substantially as specified.

3. The combination in a plansifter, of a sieve or screen, means for gyrating the same, a series of cleaning-brushes for the screen, a frame or bar to which said series of brushes is secured and by which said brushes are  
 130 caused to move as a unit, said brush frame



or bar being free to move in respect to the screen as the latter is gyrated, a projection on the brush bar or frame, and a recessed guard for restricting the freedom of movement of said projection, said guard having a perforated screen closing the bottom of said recess, substantially as specified.

4. The combination in a plansifter, of a sieve or screen means for gyrating the same, a series of cleaning-brushes for the screen, a frame or bar to which said series of brushes is secured and by which said brushes are caused to move as a unit, said brush-frame being free to move in respect to the screen as the latter is gyrated, a block connected to

the brush-bar and having a polygonal recess therein, and a bar secured to the sieve-frame and having an opening therethrough, and a projecting polygonal block entering the polygonal recess in the block which is attached to the brush-bar, substantially as specified.

In witness whereof we have hereunto set our hands, this 7th day of October, 1897, in presence of two subscribing witnesses.

HENRI ROSE.  
GEORGES ROSE.

Witnesses:

RAPHAEL H. BRANDON,  
EDWARD P. MACLEAN.