(No Model.)

S. TRUAX.

GRAIN CLEANER.

No. 256,769. Patented Apr. 18, 1882.

Fig. 1.

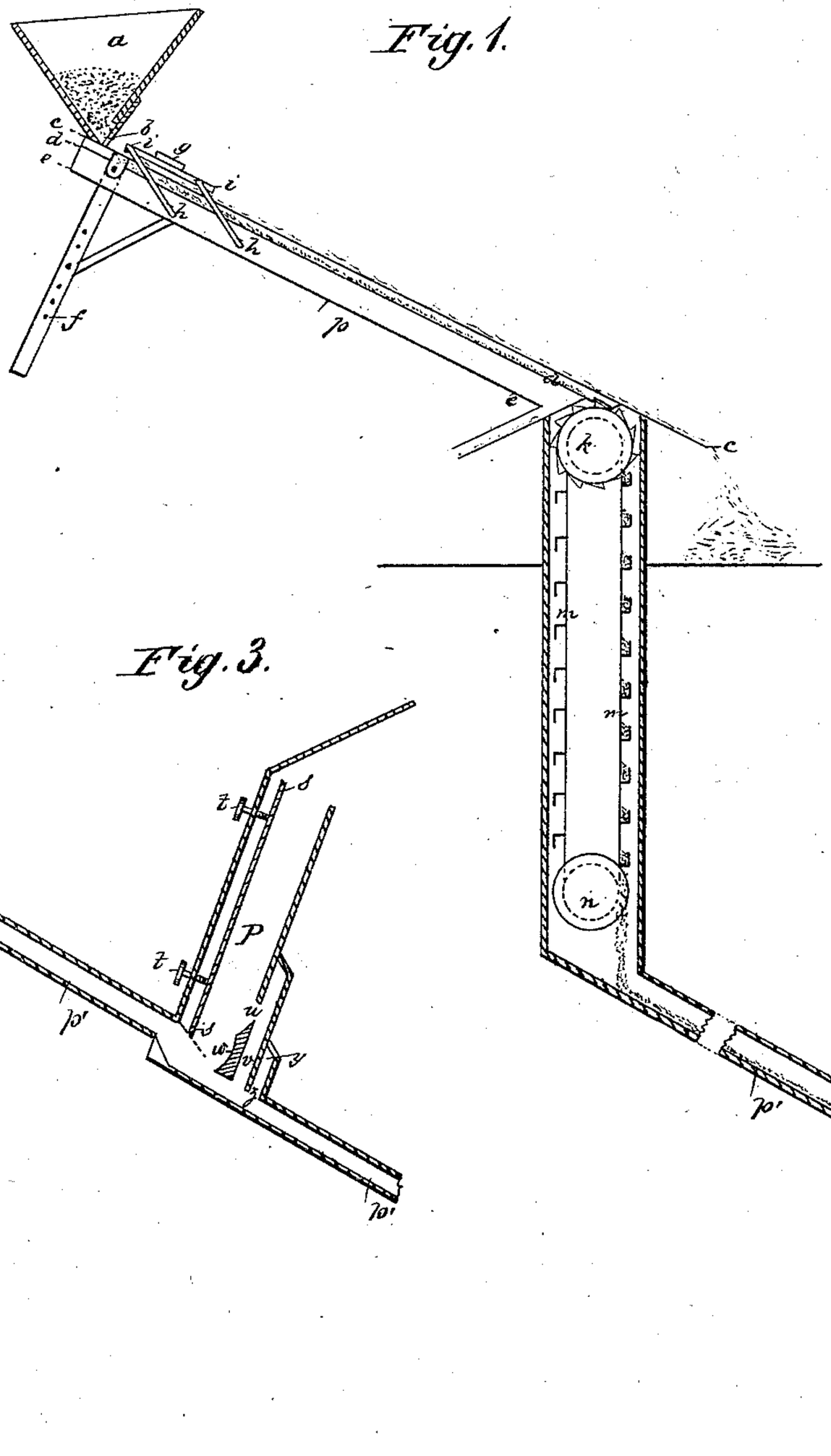


Fig. 2.

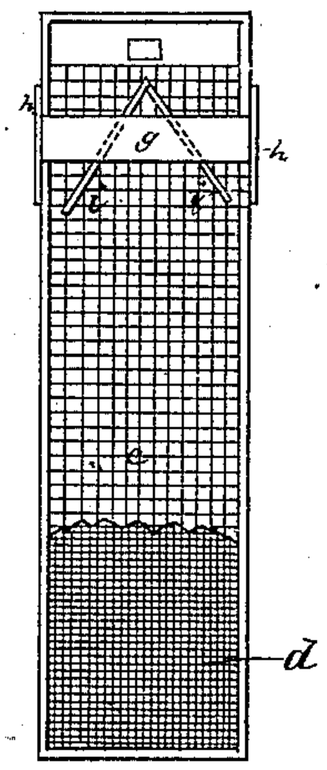
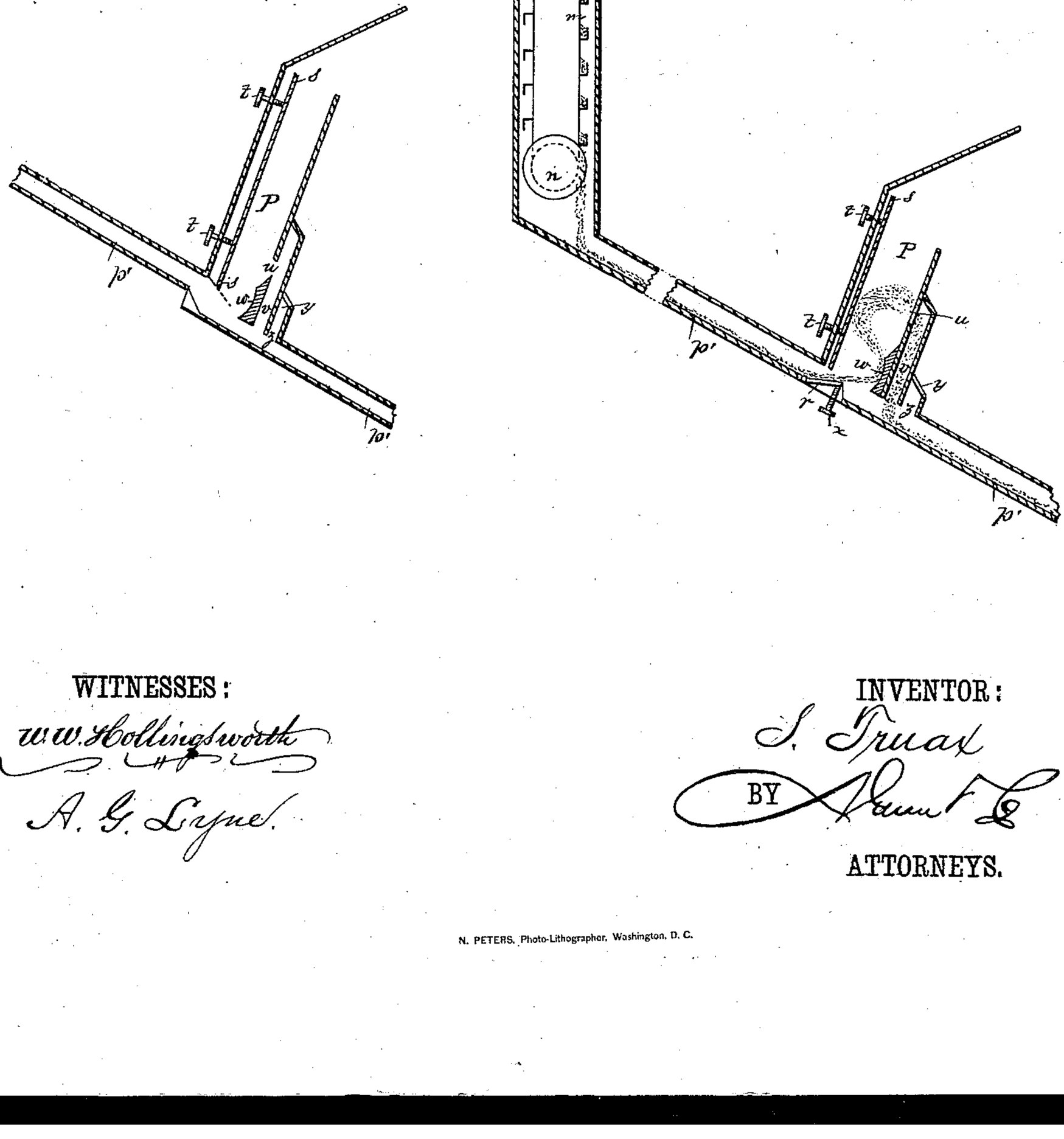


Fig. 3.



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GRAIN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 256,769, dated April 18, 1882.

Application filed October 6, 1881. (No model.)

To all whom it may concern:

Be it known that I, SEWALL TRUAX, a citizen of the United States, residing at Walla Walla, in the county of Walla Walla and Territory of Washington, have invented a new and useful Improvement in Grain-Cleaners, of which the following is a full, clear, and exact description, reference being had to the drawings hereto annexed.

The object of my invention is to clean grain of smut and all light impurities by means of friction and the blast of air which results from the passage of the grain down a steeply-inclined pipe, as hereinafter described.

In the accompanying drawings, Figure 1 repsents a side elevation of my invention; Fig. 2, a top view of the screen mechanism, and Fig. 3 a modification.

My invention is especially adapted for use where it is desirable to conduct grain from a higher to a lower plane; and it consists in two or more steeply-inclined chutes, *p p'*, one arranged below the other, which are connected by a vertical chamber, in which drums *k* and *n* carry an endless belt, *m*, having a series of cups. The grain is placed in the hopper *a*, passes through a nearly-square opening at *b* upon the screen *c c*, and is distributed over the screen by the V-shaped distributer *i i*, which is placed a short distance above the screen and allows any large body, straw, &c., to pass around the lower ends, thus making it less liable to clog. The wheat passes through the screen *c c* upon the fine screen *d d* and discharges into the cups attached to the belt *m m*, and gives power for this belt to agitate the screens by turning the cylinder *k*, on each end of which are ratchets, which raise the lower end of the screens and allow them to fall upon a hard substance, causing sudden jars. These screens are pivoted upon the arm *f*, so as to give them a forward motion at each drop. A crank attached to the drum *k* (not shown) is used to start the machine, after which the weight of the grain will be sufficient to do the work. Upon being discharged from the cups the grain enters the second pipe, *p'*, through which it passes rapidly down until it is diverted from its course into another pipe, P, inclined and nearly at right angles thereto, by the slide *r*, which is adjusted by the screw *x*. The grain strikes with great force upon the iron plate *w*, which is of such a form that the rebound will carry the grain upward and scatter it in the pipe P. The velocity of the grain and its friction on the air in passing down the pipe create a very strong upward blast in the pipe P, which passes through the grain, carrying with it all smut and light impurities, while the clean grain falls to the lower side of pipe P and down the same through the opening *u* into the pipe *v*, and thence down the conducting-pipe *p'* again, and so on through a series of such pipes to the receiver at the bottom. This operation may be repeated as often as desired by means of an elevator until the grain is thoroughly cleaned and scoured.

The board *s s*, with the adjustable pins *t t*, is for the purpose of adjusting the size of the chamber of pipe P, as diminishing its size increases the upward blast of air, and vice versa. The short pipe *z*, with an air-opening at *y*, is for the purpose of admitting the draft caused by the suction of the grain in the pipe below.

The hinged plate *r* could be located so as to close the entire pipe *p'*; but I find it would increase the upward draft in pipe P but little, and would prevent the pipe from clearing itself of grain, and would be much more liable to clog. A modification of this part of the invention is shown in Fig. 3, where the pipe *p'* is lowered or depressed at the lower end of pipe P.

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

1. A grain-cleaner consisting in two steeply-inclined chutes connected by a vertical chamber, in combination with an endless belt provided with cups, screens, and ratchets for operating the screens, substantially as shown and described.

2. A grain-cleaner consisting of an inclined chute or pipe having an adjustable guide in its bottom, and connected to a blast-chamber having a curved iron plate in one side, in combination with a chute having screens, ratchets operating the screens, and a V-shaped distributer, substantially as shown and described.

3. In a grain-cleaner, the chute *p*, having hopper *a*, distributer *i*, screens *c* and *d*, and lever *f*, in combination with the vertical cham-

ber having drum *k*, provided with ratchets, drum *n*, and endless belt *m*, having a series of cups, substantially as shown and described.

4. In a grain-cleaner, the pipe *p'*, having hinged adjustable guide *r*, in combination with pipe or chamber P, having curved iron plate *w*, adjustable board *s*, side opening, *u*, and pipes *v* and *z*, substantially as shown and described.

5. The herein-described method of cleaning grain, which consists in permitting the grain to descend through a pipe, and thereby creating a blast of air, deflecting the grain upward through a series of open pipes or chambers, and allowing the blast thus created to carry off the refuse at the top of said chamber, while the grain falls back by force of gravity, substantially as specified.

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