

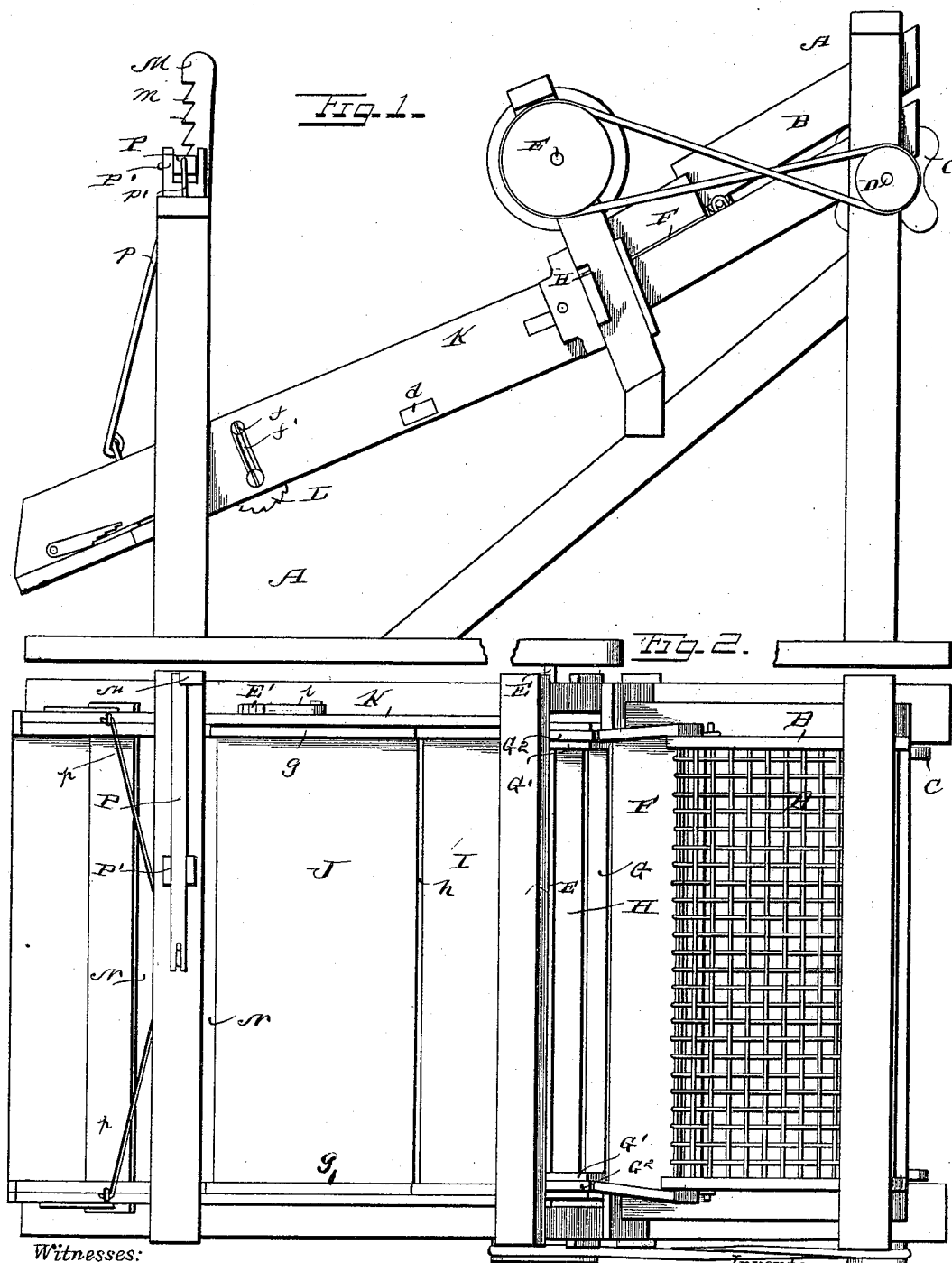
(No Model.)

2 Sheets—Sheet 1.

S. THOMAS.
SLATE PICKER.

No. 494,395.

Patented Mar. 28, 1893.



Witnesses:
Jesse Heller
Phillip Masi.

Inventor.
Septimus Thomas
by E. W. Anderson
his Attorney.

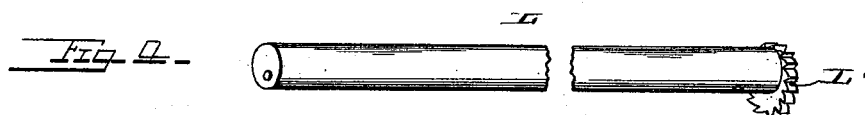
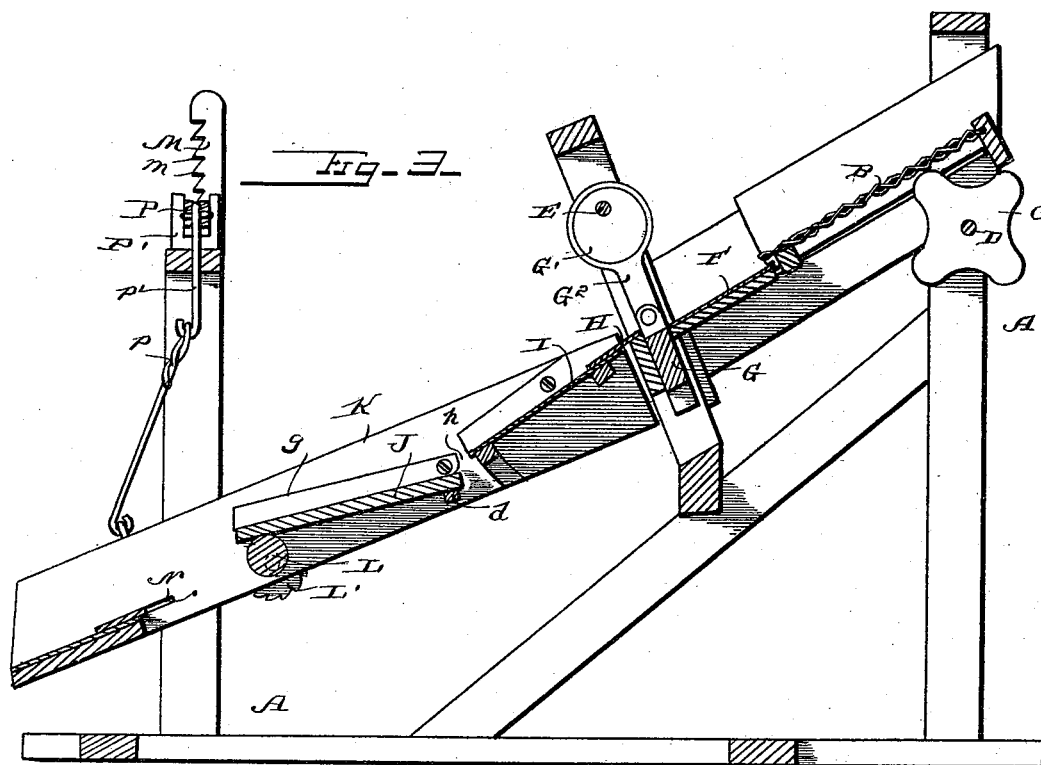
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UNITED STATES PATENT OFFICE.

SEPTIMUS THOMAS, OF SCRANTON, PENNSYLVANIA.

SLATE-PICKER.

SPECIFICATION forming part of Letters Patent No. 494,395, dated March 28, 1893.

Application filed July 5, 1892. Serial No. 438,915. (No model.)

To all whom it may concern:

Be it known that I, SEPTIMUS THOMAS, a citizen of the United States, and a resident of Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Slate-Pickers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view. Fig. 2 is a top plan view. Fig. 3 is a vertical longitudinal section and Fig. 4 is a detail view of adjusting shaft.

This invention has relation to means for separating slate and other extraneous matter from coal, the object being to improve the construction, and render more effective the operation of machines of this character. And the invention consists in the novel construction and combination of parts, all as hereinafter described and specified in the claims.

Referring to the accompanying drawings, the letter A designates the frame in which the operating mechanism is supported.

B designates a screen supported in an inclined position, and pivoted at its lower forward portion in such a manner as to be capable of a vertical rocking or oscillatory movement, which may be effected as shown by rotary cams or star-shaped disks C, carried by a shaft D driven by a connection as indicated, with the main or power shaft E. Adjoining the lower edge of this screen, and of equal width therewith at its upper edge, is an inclined platform or chute F. Working in close contact with the lower edge of this platform or chute, is a feeder G, consisting of an edgewise disposed plate actuated to a reciprocating vertical movement by eccentrics G¹ on the power shaft E, and the connecting rods G². Below said feeder is a narrow inclined platform H, onto which the coal is thrown by the feeder, and below this feeder are the upper plane I, and the lower plane J, said planes being separated from each other by a narrow transverse dust opening h. The upper plane is preferably of hard steel, and

is inclined to a pitch about two inches greater to the foot than that of the lower plane, which may be of stone or similar material. These two planes are secured in an inclined frame K, supported in the main frame A, the upper plane being usually held in rigid position, while the lower plane is supported by the transverse bar d at its upper portion, and by the eccentric bar or shaft L at its lower portion, whereby the pitch of said lower plane may be adjusted to suit the character of the coal being operated upon, or the nature of the extraneous matter therein. Said eccentric bar or shaft is provided with a ratchet L', and pawl l for securing it in the proper adjustment. In order to permit this adjustment of the lower plane, and at the same time guard against its improper displacement, the side strips g, g, are provided, pivoted at their upper ends to the sides of the frame K, and at their lower ends loosely connected to said sides by studs or projections f' thereon which engage curved slots f'. These strips rest on the upper lateral edge portions of the plane, and allow it a limited vertical movement. The entire frame K is also pivoted at its upper end, so that it may be adjusted to change the pitch of the planes, independent of the individual adjustment of the lower plane. This adjustment of the frame is effected by means of the lever P mounted on an upper cross bar P' of the frame A, and having its short arm connected by a rod p' with rods p, which are attached to the sides of the said frame K, near its lower portion. The lever is locked to hold the frame at the desired adjustment by the engagement of its longer arm with any one of a series of notches m on a plate M carried by one of the frame posts. Othersuitable means for adjustment may however be provided. Below the lower plane is a transverse opening N, designed to form the slate discharge, while the coal will be carried over this opening and discharged at the lower end of the frame. This separation is caused by the fact that the coal will obtain a greater velocity during its travel over the planes, than will the slate, and this velocity will be sufficient to carry it over the opening, while the slate moving at a slower rate will fall through.

If desired a series of sizing screens may be

employed in connection with this device, said screens being arranged in the manner set forth in my former patent, No. 456,448, dated July 21, 1891.

5 The coal is fed upon the inclined screen B, falling onto the inclined chute F. By the operation of the feeder G it is delivered from said chute onto the platform H in a thin stream or stratum, from where it passes onto
10 the upper plane I. Owing to the increased pitch of the said plane I, the coal in passing thereover acquires a velocity sufficient to carry it over the lower and less inclined plane J, and across the slate opening N, while the
15 slate, naturally moving more slowly than the coal, is caused to move still more slowly along the plane J, so that it will be discharged through the opening N. In passing from the upper to the lower plane, the finer parts of
20 foreign matter not removed by the screen will escape through the transverse dust opening *h* between said planes, inasmuch as such matter will sift through the coal and slate to the surface of the plane, and will move with less
25 velocity.

I do not confine myself to the use of the materials named in the above for the planes, as others may be substituted therefor without materially affecting the invention.

30 Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a slate picker or separating machine, the combination of the inclined screen B, chute
35 F, the vertically-reciprocating feeder G at the lower edge of said chute, the inclined platform H, the upper inclined plane I separated from the platform H by a transverse dust opening *h*, the lower plane J having a less incline than
40 the upper plane I, the coal discharge, and the slate discharge opening between said coal discharge and the lower plane J, substantially as specified.

2. In a slate picker, or separating machine,

the combination with the main supporting 45 frame A, its inclined screen, the chute and the feeder, of the frame K supported at an inclined position in the frame A, an upper inclined plane supported in the upper portion of the frame K, a second plane having a less 50 incline supported in said frame below the upper plane, a transverse dust opening *h* between said planes, means for adjusting the inclination of the frame K, and thereby the common adjustment of both said planes, and means 55 for effecting the independent adjustment of the lower plane, substantially as specified.

3. In a slate picker or separating machine, the combination with the supporting frame A, the inclined vibratory screen B supported 60 in the upper portion of said frame, the cam shaft D and the cams C thereon for effecting the vibration of said screen, and the chute F below said screen, of the vertically-reciprocating feeder G working adjacent to the lower 65 edge of said chute, the driving shaft having the eccentrics, the connecting rods operated by said eccentrics and connected to said feeder and a series of inclined separating planes below said feeder, substantially as specified. 70

4. In a slate picker or separating machine, the combination with the inclined pivoted frame K having the upper stationary plane I, and the lower plane J separated from the upper plane by a transverse dust opening *h*, of 75 the lever P connected by rods *p*, *p'* with the lower portion of said frame and providing means for the adjustment of its inclination, the eccentric bar upon which the lower portion of the lower plane J is supported, and the 80 ratchet and pawl for holding said bar, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

SEPTIMUS THOMAS.

Witnesses:

JOHN L. HANGI,

GEO. W. MARSHALL.