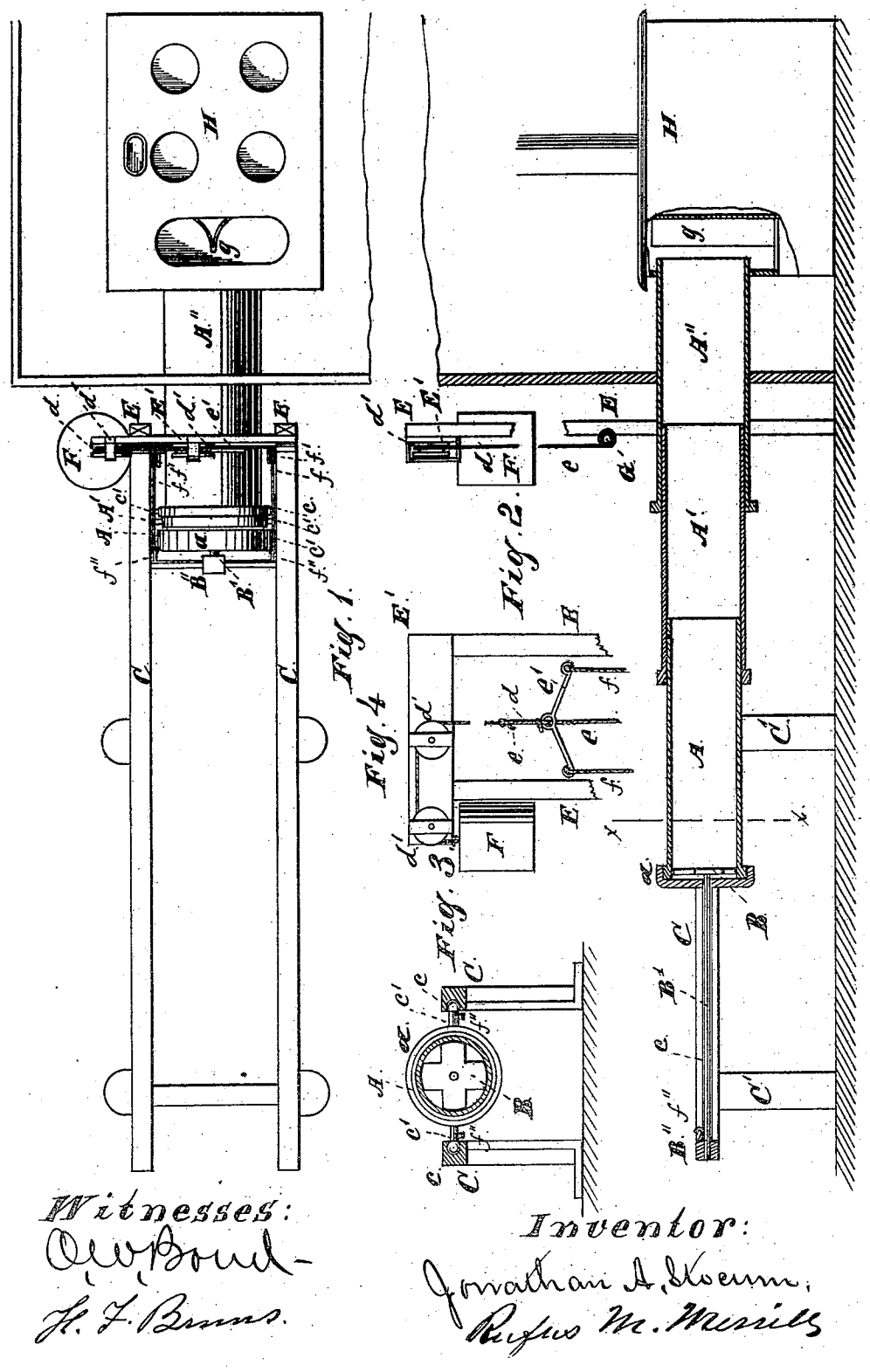
J. A. STOCUM & R. M. MERRILL.

Hay-Stove.

No. 228,287. Patented June 1, 1880.



Witnesses:

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JONATHAN A. STOCUM AND RUFUS M. MERRILL, OF ENGLEWOOD, ILLINOIS, ASSIGNORS TO SAID STOCUM.

HAY-STOVE.

SPECIFICATION forming part of Letters Patent No. 228,287, dated June 1, 1880.

Application filed February 6, 1880.

To all whom it may concern:

Be it known that we, JONATHAN A. STOCUM and RUFUS M. MERRILL, both residing at Englewood, in the county of Cook and State of Illinois, and citizens of the United States, have invented new and useful Improvements in Hay-Stoves, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a top or plan view, showing the feed-tube closed; Fig. 2, a vertical longitudinal section, showing the feed-tube opened out; Fig. 3, a cross-section of the tracks and feed-tube; Fig. 4, a detail of the raising-cord and weight.

This invention relates to that class of stoves which burn hay or other fibrous material as a fuel, the fuel being fed to the stove from a point outside of, and some distance from, the wall of the building or room through a tube, and has for its objects the decreasing of the friction between the material and the tube as the material passes through, so as to produce a more uniform and better regulated feed without any increase in the power required for feeding the material by the plunger and its operating devices, and the separation of the material as it enters the fire-box of the stove, so as to insure a more perfect combustion of the material; and its nature consists in making the feeding-tube in sections, arranged to telescope one within the other and feed the material forward by means of a plunger and an operating mechanism in such manner as to leave only the length of each section in succession in contact with the material as it is discharged, thereby decreasing the frictional surface and lessening the friction; and in providing a stationary separator or divider, located in the fire-box in such position as to divide the material as it is discharged from the tube and cause it to pass each side of the separator or divider, thereby loosening and rendering the material less compact and better adapted to be consumed; and in providing a frame or tracks, in which the parts are mounted, so that the several sections of the tube can be properly operated.

In the drawings, A A′ A″ represent the several sections of the feed-tube, so formed as to telescope one within the other, A entering A′ and A′ entering A″. These sections may be made of sheet metal or other suitable material, and the end of A″, which enters the fire-pot of the stove, is to be protected from the action of the heat by any suitable means. The outer end of the section A is to be closed by a cover, *a*, so as to make the feed-tube sufficiently air-tight to prevent any back draft, which cover is removable for filling purposes.

B is the plunger-head, secured in any suitable manner to the end of the plunger-rod B′, which rod is rigidly attached to a cross-bar, B″. The length of the plunger-rod should be sufficient to force the material through the section A of the tube, and it passes through an opening formed in the center of the head or cap *a* in line with the center of the feed-tube.

C C is the frame or track, on which the tube is supported in such manner as that the several sections can slide. As shown, the outer end of each section A A′ has a laterally-extending projection, *c*′, in each side, which projections enter grooves *c*, formed in the inner faces of the frame or track pieces, by means of which the sections are held in position so as to slide. The cross-bar B″ is also supported on the frame or track C, its ends being so formed as to enter the grooves *c*. The grooves *c* and the tongues or projections *c*′, which enter them, may be of any form that will allow a free movement, as shown. The ends *c*′ are round, which form reduces the friction. The frame or tracks C C are mounted in supports C′, so as to bring them at the required height to support the tube properly.

E E are posts or uprights, extending up one on each side of the feed-tube a sufficient distance to allow the weight which moves the plunger to ascend or descend sufficiently for the purpose of operating the plunger. F is the weight, sufficiently heavy for the purpose of operating the plunger and forcing the contents of the feed-tube into the stove. This weight is attached to one end of a cord, *d*, which cord passes over pulleys *d*′, located on a cross-piece, E′, at the top of the uprights E, and down to a suitable windlass, to which its end is attached. A secondary rope, *e*, is attached to this rope *d*, and to a yoke or support, *e*′, at its center.

To each end of the yoke or support *e* is at-

tached one end of a rope or cord, *f*, which passes down under pulleys *f'*, located on the posts or uprights, and thence parallel with the sides of the feed-tube to the cross-bar B', to which the ends are attached by hooks or eyes *f''*, or in any other suitable manner.

G is a windlass, of any suitable construction, located in suitable bearings on the posts or uprights E, above the feed-tube. By means of this windlass the weight F is raised through the rope *d*.

H is a stove, of any suitable form of construction, into the fire-chamber of which the material or fuel in the feed-tube is to be discharged; and in order to insure a combustion of the material a divider or separator is located in the fire-chamber of the stove, which divider or separator *g* stands vertically, and is so located as to cause the material as it is discharged to pass on each side into the fire-chamber. This divider or separator *g* is stationary, and is secured in position by any suitable means, so that its dividing-edge will be in a line passing vertically through the center of the feed-tube, and may be of the form shown, with concave sides, or may be of any other form suitable for the purpose of standing in a vertical stationary position and dividing the material as it is discharged, so as to break it up and prevent its being delivered in a compact form. By thus loosening or dividing the material as it enters the fire-chamber, it will burn better, as there is less danger of deadening the fire than when delivered in a compact mass.

As shown, the feed-tube consists of three sections; but more may be used, if desired, the number depending on the distance; and the length of the sections should be such as that the surface presented for friction between the material and section will not produce an amount of resistance that cannot be readily overcome by the weight.

In filling the plunger is to be withdrawn, the weight F being raised by the windlass and held in that position by locking the windlass. Each section of the tube is then filled in succession, the sections being closed at the commencement of the filling and withdrawn or opened as the filling progresses, and when all are filled the several sections will be withdrawn, which brings the outer section into position so that the plunger will enter it and allow its end to be closed by the cap *a*. The device is now ready for use. The windlass is unlocked and the weight will commence to descend, causing the plunger to press against the contents of the section A and through the section A', which will be advanced, discharging the contents of the section A'' into the fire pot or chamber of the stove, and when this section is emptied the section A' will be within the section A'', and its contents will be discharged by the advance of the section A', and when this section A' is emptied the section A will be within A', and its contents will be discharged by the advance of the plunger.

By this arrangement it will be seen that each section is brought successively in position to be discharged, and that while being discharged the friction caused by the passage of the material will extend only over the surface of the tube or section which is being discharged, as the contents of the next succeeding section will be carried bodily forward by the sliding of the section itself into the section being discharged, and the only friction to be overcome will be between the sections of the tube, which is slight, and will not add materially to the friction between the section being discharged and its contents.

By thus dividing the feed-tube into sections the feed will be more regular, uniform, and constant, discharging the material in better form without clogging to an extent to interfere with the feed.

We are aware that a movable stop located in the fire-box of a stove at the end of a feed-tube to regulate the distance the fuel is forced into the stove has been used, and that a revolving air-conduit having an inclined face forming a point on one side, to stir and separate the mass of fuel, has also been used in connection with a feed-tube. We do not make any claim to either a stop or a revolving stirrer or separator; but our invention consists in a vertical stationary divider located so that its dividing-edge will be in a vertical line passing through the center of the feed-tube, whereby the mass of fuel as it is discharged from the tube will be divided and loosened as it passes into the fire-box on both sides of the divider.

What we claim as new, and desire to secure by Letters Patent, is—

1. A feed-tube consisting of telescopic sections, in combination with a feeding-plunger and an operating mechanism for feeding hay or other fibrous material to a stove, substantially as specified.

2. A feed-tube consisting of telescopic sections and having side lugs or projections, *c'*, and a plunger attached to a cross-bar, B'', in combination with the frame or tracks C C, having grooves *c*, substantially as and for the purposes specified.

3. A feed-tube consisting of telescopic sections and a supporting frame or track on which the sections can slide, in combination with a feeding mechanism for advancing the sections and discharging the contents in succession into a stove, substantially as and for the purposes specified.

4. The stationary vertical divider or separator *g*, in combination with a fire-chamber of a stove and a feeding-tube for hay or other material, for dividing the material as discharged, substantially as and for the purpose specified.

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