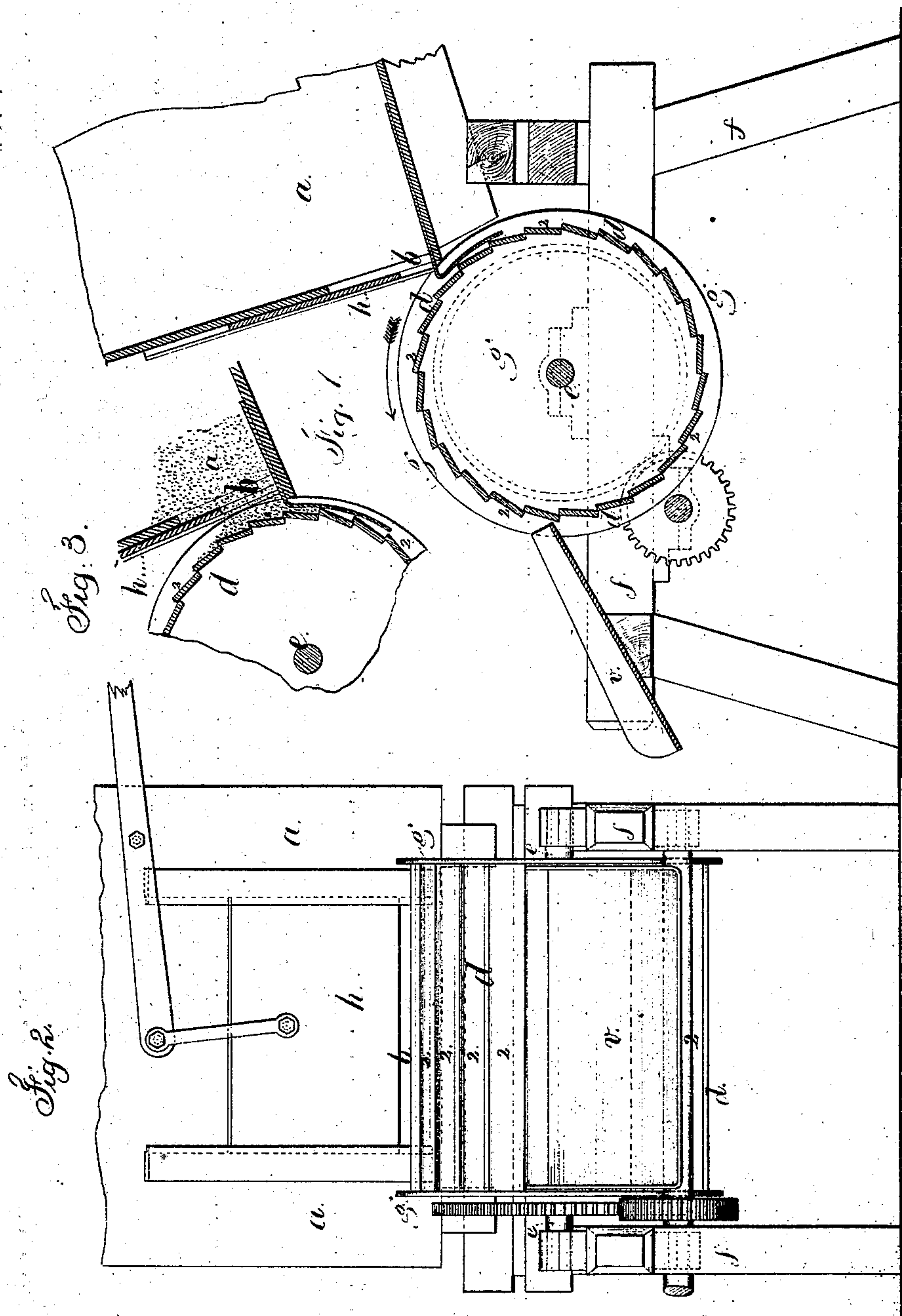


J. B. WILFORD.

Feeding Coal, &c., From a Hopper.

No. 158,769.

Patented Jan. 12, 1875.



Witnesses,
Charles Smith
Harold Smith

John B. Wilford
for L. W. Lowell
att'y.

UNITED STATES PATENT OFFICE.

JOHN B. WILFORD, OF READING, PENNSYLVANIA, ASSIGNOR TO HEZEKIAH BRADFORD, OF SAME PLACE.

IMPROVEMENT IN FEEDING COAL, &c., FROM A HOPPER.

Specification forming part of Letters Patent No. 158,769, dated January 12, 1875; application filed November 16, 1874.

To all whom it may concern:

Be it known that I, JOHN B. WILFORD, of Reading, in the county of Berks and State of Pennsylvania, have invented an Improvement in Feeding Coal and other Substances from a Hopper, of which the following is a correct specification:

The object of this invention is to deliver coal and other substances of comparatively small size with uniformity from a hopper, so that the same may pass down to the separating or assorting device, or to any receptacle. The same improvement is available in delivering coal, or coal and ore, into a furnace, or for any similar purpose.

I make use of a revolving cylinder with buckets upon its periphery, which cylinder is so located in relation to the hopper that it forms a stop or breast for the mouth, and as said cylinder is revolved it raises the buckets filled with the material, and the surplus runs back, and that which is lifted is delivered over the cylinder and falls upon an incline or chute. Any sticks or long substances may work through with the granular material, and will not obstruct the same, and will finally pass off over the cylinder, and may be received into a separate hopper.

This apparatus that lifts the coal and carries it over without breaking the same is to be distinguished from feeding-cogs that carry the coal down and are liable to break the coal.

In the drawing, Figure 1 is a vertical section of said apparatus, and Fig. 2 is an elevation of the same.

The hopper or container *a* is of suitable character, and the delivery-mouth *b* at the lower part thereof is provided with a gate or

regulating slide, *h*, to determine the width of mouth. The cylinder *d* is mounted upon the shaft *e* in suitable bearings upon a frame, *f*, and the surface of said cylinder between the heads *g* is provided with longitudinal plates or ribs *2*, of suitable width, so as to form buckets of a size adapted to the material to be fed from the hopper. The material falls from the cylinder *d* into the chute *v*.

It will now be seen that when the cylinder *d* is revolved in the direction of the arrow there will be no tendency for the pieces of material to clog or bind, but they are lifted with great ease and regularity, and only the contents of the buckets can be raised as the revolution progresses, because the surplus runs back toward the hopper, and the delivery of the material is regular and proportioned to the speed of the revolution of the cylinder.

If the parts are positioned, as shown in the detached Fig. 3, the surplus coal will fall back and only the bucket as filled be carried over; but if the parts are positioned as in Fig. 1, the ascending side of the cylinder will load more or less, according to the width of opening or mouth as regulated by the slide or gate *h*.

I claim as my invention—

The apparatus for feeding coal or other material from a hopper or receptacle, consisting of a cylinder with plates or buckets for lifting the material over the top of such cylinder near the mouth of the hopper, substantially as set forth.

Signed by me this 4th day of August, 1873.
JNO. B. WILFORD.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.