2 Sheets—Sheet 1.

A. KOMP.

APPARATUS FOR WASHING AND SEPARATING COAL.

No. 65,818. Patented June 18, 1867.

Fig. 1.

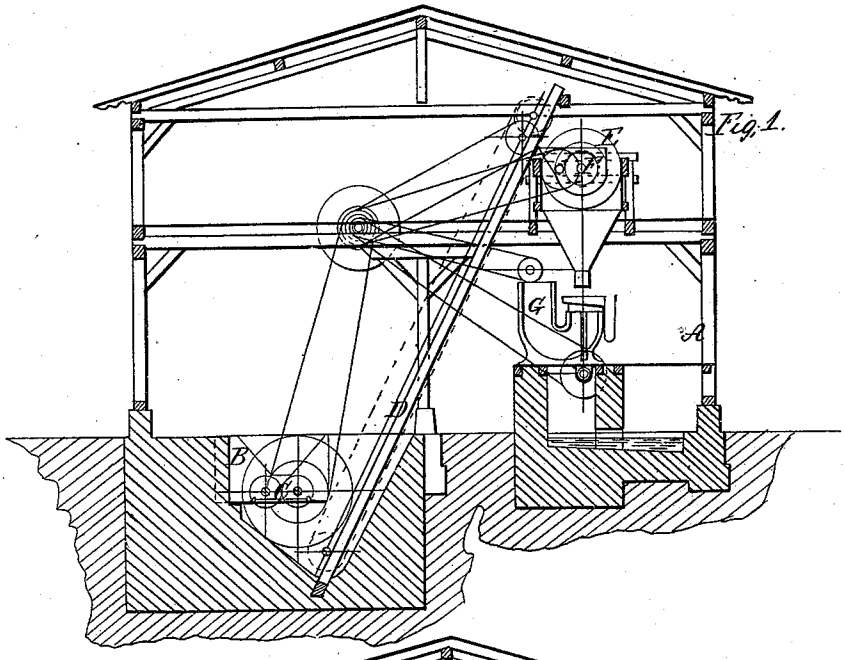
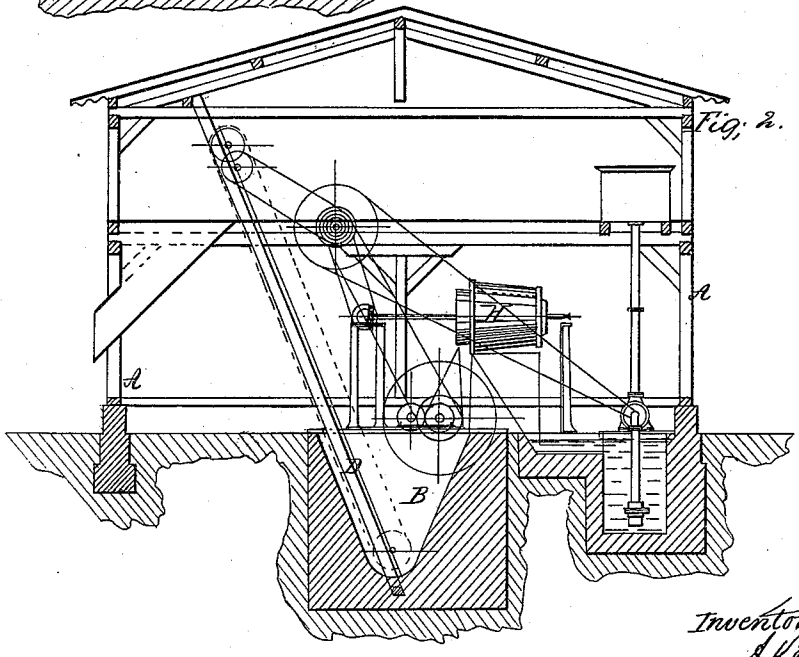


Fig. 2.



Witnesses,
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2 Sheets—Sheet 2.

A. KOMP.

APPARATUS FOR WASHING AND SEPARATING COAL.

No. 65,818. Patented June 18, 1867.

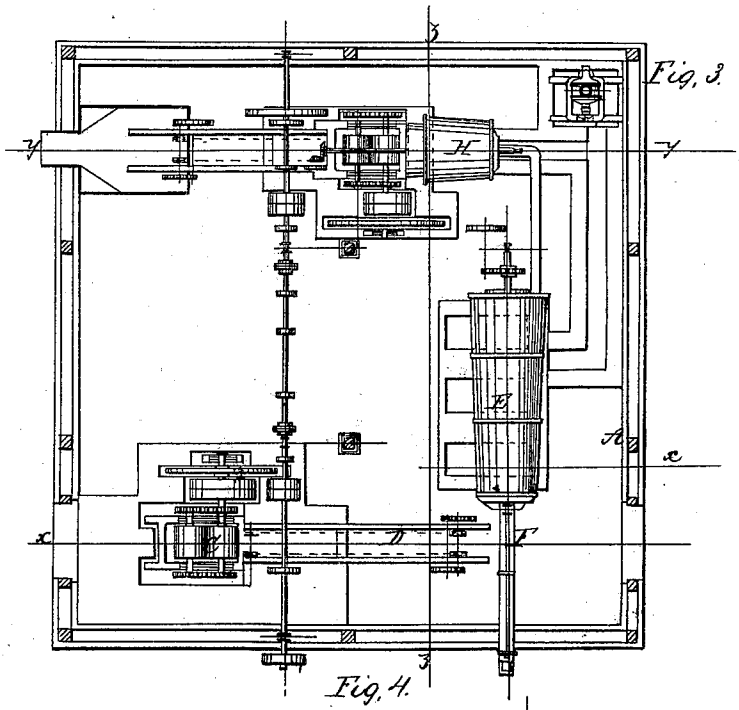
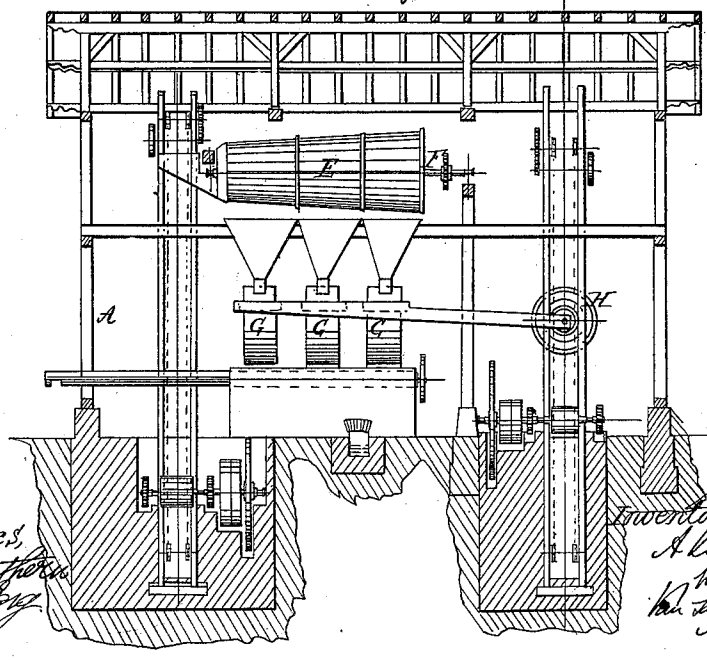


Fig. 4.



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United States Patent Office.

A. KOMP, OF NEW YORK, N. Y.

Letters Patent No. 65,818, *dated June* 18, 1867.

IMPROVED APPARATUS FOR WASHING AND SEPARATING COAL.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. KOMP, of 184 Fulton street, in the city, county, and State of New York, have invented a new and useful Improved Apparatus for Washing Coal and other Materials; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a transverse vertical section of this invention, taken in the plane indicated by the line *x x*, fig. 3.

Figure 2 is a similar section, the line *y y*, fig. 3, indicating the plane of section.

Figure 3 is a plan or top view of the same.

Figure 4 is a longitudinal vertical section of the same, the plan of section being indicated by the line *z z*, fig. 3.

Similar letters indicate corresponding parts.

This invention relates to an apparatus which is composed of grinding-rollers, in which coals, ashes, and cinders, such as taken from furnaces, or quartz or other material to be washed, are first reduced to such a state that the light parts can be separated from the heavy parts by a shaking machine, or by any other suitable mechanism generally used for this purpose. After having been reduced by the grinding-rollers, the material to be washed is elevated and delivered into the assorting drum, in which the material is sifted, and from which the same, after having been separated according to fineness, is delivered to the shaking or separating machine. Those parts which do not pass through either of the sieves of the assorting-drum drop out at the end thereof, and may be again passed through grinding-rollers; but those parts which pass into the shaking or separating machines are separated according to their specific gravity, and the impurities are raked out and thrown away, while the good parts are saved, and, if desired, these good parts can be made to pass into an additional drum, for the purpose of expelling the water.

A represents a frame or building of any suitable size and construction, to support the washing apparatus and to protect the same and the workmen engaged in operating it against the inclemencies of the atmosphere. In the ground floor of this building is a cavity, B, to receive the grinding-rollers C, to which the requisite motion is imparted by a belt and pulley, or in any other suitable manner. These grinding-rollers are so situated that the coal or other material to be washed can be conveniently delivered to the same, and after having passed through said rollers, the ground material is raised by the action of the elevator D, and delivered to the assorting-drum E. This drum is made in the form of a truncated cone, which is mounted on a horizontal shaft, F, and its circumference is formed of several sections of perforated sheet metal or wire gauze, of gradually increasing coarseness, from the small or receiving end of the drum to its large or delivering end. By the action of this drum the reduced material is assorted according to its fineness, and the parts of different fineness are delivered into different shaking or separating machines G, while those parts which are yet too coarse to pass through either of the sieves of the assorting-drum drop out at the large end of said drum, and may either be used in that state, or they may be re-ground and passed again through the washing process. The shaking or separating machines, shown in the drawing, are constructed so that the materials to be separated are exposed to the pulsation of a quantity of water or other liquid, whereby the materials are caused to arrange themselves in horizontal layers according to their specific gravity, the heaviest parts being below and the lightest on top. The impurities mixed with coal are generally heavier than the coal, and the coal, which accumulates on the top of the separating sieve, can be washed off by a current of water and delivered into the drying-drum H. This drum is mounted on a horizontal shaft, and it receives a rapid revolving motion by belt and pulleys or other means. It serves to carry off the dust and water, and is so constructed that it delivers only such portions of the material passing through it which are composed of pure coal. This purpose is effected by providing it with an internal assorting-drum, which allows the dust and water to pass off, while the good coals drop out at the end and collect in a suitable receptacle.

If the apparatus is used for separating quartz or other materials in which heavy parts are to be saved, and the light parts washed off, the drying-drum can be dispensed with, and in this case the sieves of the shaking machine have to be emptied from time to time, by means of shovels, or in any desirable manner. My apparatus is, however, intended particularly for separating the good coals from the ashes and cinders taken from furnaces,

or for washing coals, such as received from the mines, for the purpose of preparing the same for the manufacture of coke.

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

1. The arrangement of the grinding-rollers C, and elevator D, in combination with the assorting-drum E, onstructed and operating substantially as and for the purpose set forth.

2. The arrangement of the assorting-drum E, in combination with the separating machines G, constructed and operating substantially as and for the purpose described.

3. The arrangement of the drying-drum H, in combination with the separating machines G, and assorting-drum E, constructed and operating substantially as and for the purpose set forth.

A. KOMP.

Witnesses:

W. HAUFF,

J. BERG.