2 Sheets—Sheet 1.

H. BURNHAM.

Hair Picker.

No. 962. Patented Oct. 5, 1838.

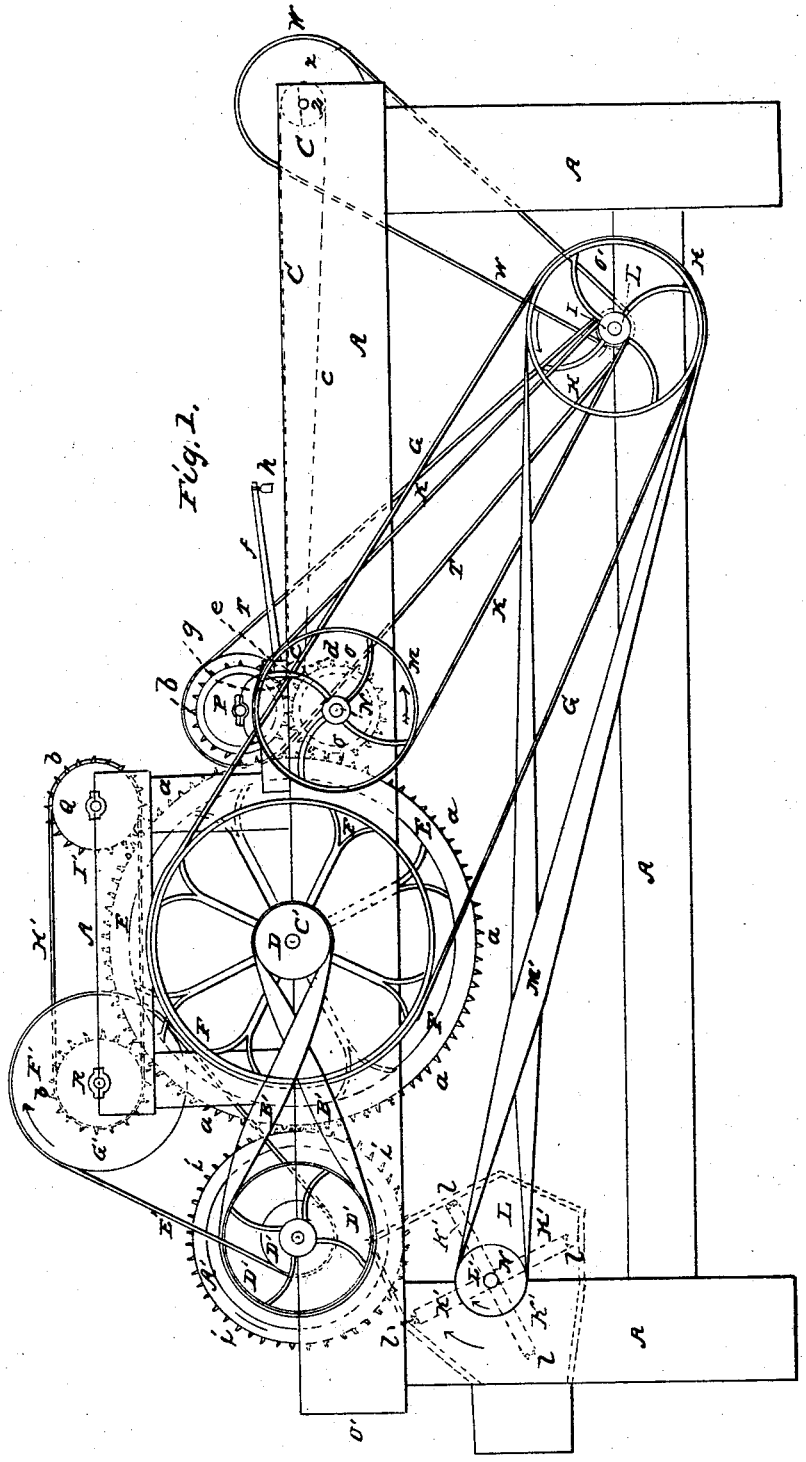


Fig. 2.

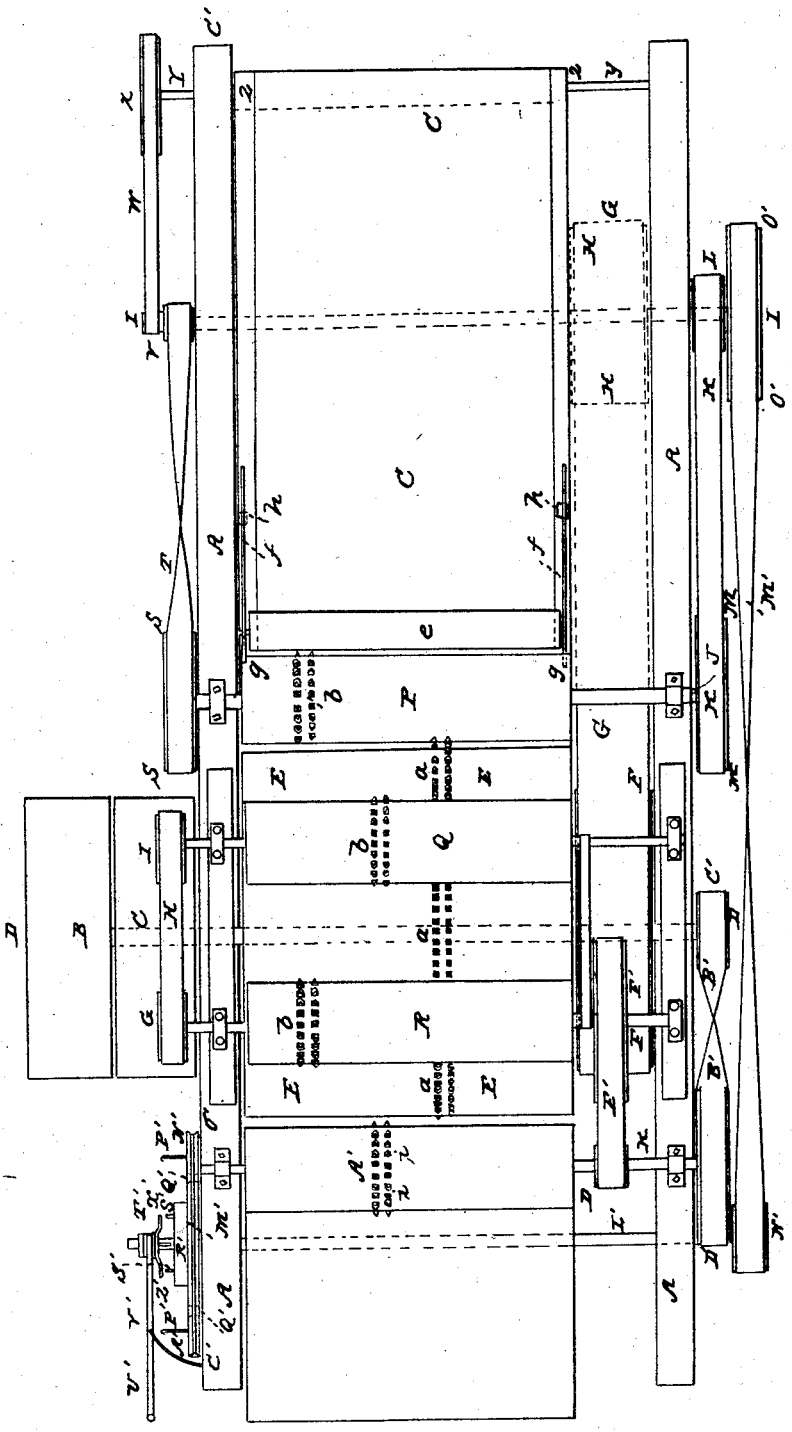
2 Sheets—Sheet 2.

H. BURNHAM.

Hair Picker.

No. 962.

Patented Oct. 5, 1838.



UNITED STATES PATENT OFFICE.

HIRAM BURNHAM, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR PICKING OAKUM, CURLED HAIR, &c.

Specification forming part of Letters Patent No. **962**, dated October 5, 1838.

To all whom it may concern:

Be it known that I, HIRAM BURNHAM, of Boston, county of Suffolk, and State of Massachusetts, have invented a new and useful improvement of machinery for picking curled hair for upholsterers, oakum for calkers, and separating fibers of such other materials as may be successfully operated upon by the said machinery, of which the following is a specification.

These improvements, the principles of the same, and the manner in which I have contemplated their application, together with such parts, inventions, or combinations I claim as my discoveries and hold to be original and new, I have herein set forth and described, which description, together with the accompanying drawings, herein referred to, compose my specification.

Figure 1, Plate 1, and Fig. 2, Plate 2, represent side and top views of the machine.

A A A, Figs. 1 and 2, is a strong frame, of wood, iron, or other suitable material, constructed as seen in the drawings, or otherwise shaped and formed to answer the purpose of supporting the machinery attached thereto.

B, Fig. 2, is a loose and C a fast pulley on the main shaft D, Figs. 2 and 1. The belt from the drum which drives the machine passes around either of these pulleys, as convenience requires.

E E E E, Figs. 1 and 2, is a large drum or cylinder on the shaft D, which shaft rests and revolves in suitable bearings attached to the sides of the frame-work. Teeth *a a a*, of steel or other proper material, are inserted at suitable distances apart over the whole outer surface of the cylinder E E. On the axis D of the cylinder E a pulley, F F, is fixed, around which a belt, G G, passes to another pulley, H H, on a horizontal shaft, I I. On the shaft I is a pulley, L, Figs. 1 and 2, around and from which a belt, K K, passes to and over a pulley, M, on the extremity of the shaft or axis N of another cylinder, O, as seen in dotted lines in Fig. 1.

P Q R, Figs. 1 and 2, are smaller cylinders, having their peripheries or surfaces covered with teeth *b b b* in a similar manner to the cylinder E. The teeth of these different cylinders play in the interstices or spaces between the teeth *a*.

S S, Fig. 2, is a pulley on the extremity of the axis of the cylinder P. From this pulley a belt, T, proceeds to and around a pulley, U, on the end of the shaft I. By the side of this latter pulley is another and smaller pulley, V, over which a belt, W, passes to and around another pulley, X, Figs. 2 and 1, on a shaft, Y Y. A small cylindrical roller, Z, is placed on the shaft Y, around which roller an endless apron, *c c*, is stretched, and passes from thence to and over another small roller, *d*, Fig. 1.

The material to be operated on is placed lengthwise on this revolving apron, and is received at the roller *d*, between the teeth of the cylinders O and P. A small roller *e*, is pressed down on the material by weights *h h* on levers F F, whose fulcra are at *g g*, Figs. 1 and 2. The extremities of the axis of the roller *e* revolve in cylindrical holes in the levers *f f*. By moving the weights *h h* to different positions on the levers *f f* the pressure of the roller *e* on the material as it passes between it and the apron *c* may be regulated at pleasure. The hair or oakum is received from the feeding-apron upon the teeth of the cylinders O and P. The teeth of the great cylinder E, revolving at a very rapid and much faster velocity than O and P, draw off or take away from the latter the fibrous material. The cylinders Q and R, revolving at slower speed than the main cylinder E, raise up the fibers, so that they may be drawn off or away from the same by the curved teeth of the doffing-cylinder A′, as seen in Fig. 1. The directions in which these different cylinders revolve are denoted in the drawings by arrows.

The doffing-cylinder A′ is driven by a crossed belt, B′ B′, passing over pulleys C′ D′, the former on the axis D of the cylinder E, and the latter on the axis K of the cylinder A′. For driving the cylinders R and Q, belts E′ H′ pass around pulleys D′ F′ G′ I′ on the axis of these cylinders, Figs. 1 and 2.

A fan, K′ K′, Fig. 1, revolving on an axis, L′, has teeth *l l l* fixed in its edges, which, as it revolves, play between the teeth *i i* of the doffing-cylinder, and not only remove the fibers from the same, but blow or scatter them out of the box L, in which said fan revolves. The fan K′ is as long as the cylinder A′, and is driven by a crossed belt, M′, passing over a pulley, O′ O′, on the shaft I, and thence around the pulley N′ on the shaft L′ of the fan K′,

Figs. 1 and 2. The different cylinders are covered with teeth throughout their lengths, although but two lines of teeth are represented in Fig. 2 on each.

Before submitting the curled hair or tarred rope to the action of the machine I prepare it by means of the apparatus connected with the frame-work and shaft L′ of the fan K′. On the extremity of the shaft L′ a loose pulley, M′, Plate 2, of any suitable size, is placed. Above this loose pulley, and to the side of the upper brace, O′, of the frame-work, I place two small pulleys, N′ N′, on the axis of two hooks, P′ P′. Around these three pulleys a driving-belt, Q′, passes. To the side of the loose pulley M′ is attached a rectangular piece of iron, R′, having two small pins, *s′ s′*, projecting therefrom. By means of a common clutch, T′, (such as mechanics generally use,) with arms *x′ x′*, and lever U′, moving on a fulcrum, V′, the loose pulley M′ may be locked to the shaft L′ whenever necessary, so as to put the hooks P′ P′ in rapid motion. By attaching the end of the rope of twisted hair or the tarred rope which is to be reduced to oakum, (the latter being first soaked in hot water,) to either of the hooks P′ P′, it may be untwisted. It is then in this state laid upon the feeding-apron and passed through the machine, which separates the fibers and prepares it for the purpose for which it is intended.

The size of the pulleys which give motion to the cylinders, as well as the cylinders and other parts of the machine, may be varied according to convenience, and the whole constructed of any suitable materials, as may be required.

In the above machinery I do not claim the invention of any particular parts, as I am aware that cylinders with teeth projecting therefrom have been heretofore used; but

I claim—

The arrangement of the whole, and their combination together, forming a machine for the purposes hereinabove specified.

In testimony that the above is a true specification of my said invention I have hereto set my hand this 12th day of June, in the year 1838.

HIRAM BURNHAM.

Witnesses:
R. H. EDDY,
E. BAKER.