O. ALLEN.

Machine for Picking Oakum, &c.

No. 2,723. Patented July 16, 1842.

Fig. 2.

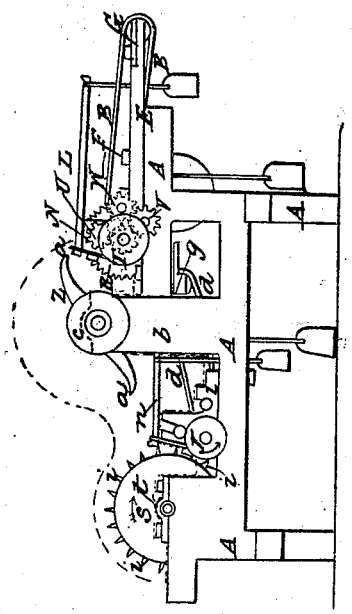


Fig. 4.

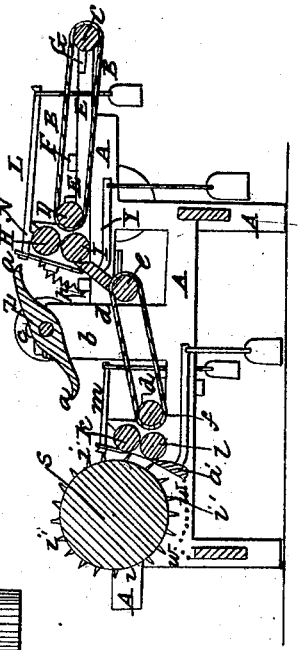


Fig. 5.

Fig. 1.

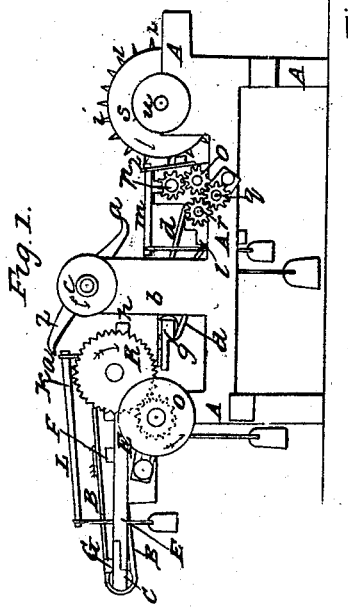
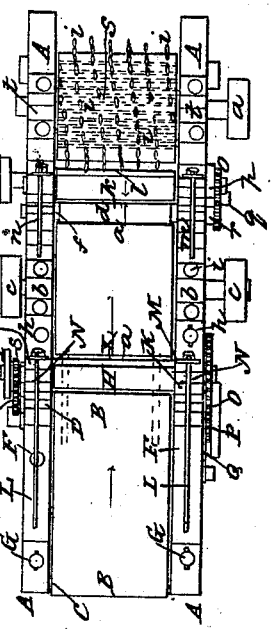


Fig. 3.



UNITED STATES PATENT OFFICE.

OTIS ALLEN, OF TEWKSBURY, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR PICKING OAKUM, &c.

Specification forming part of Letters Patent No. **2,723**, dated July 16, 1842.

To all whom it may concern:

Be it known that I, OTIS ALLEN, of Tewksbury, in the county of Middlesex and State of Massachusetts, have invented new and useful improvements in machinery for picking oakum, curled hair, and all such other fibrous materials as may be similarly and successfully operated upon by my improved apparatus; and I do hereby declare that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same.

In said specification I have set forth the nature and principles of my said improvements, by which my machine may be distinguished from others for a similar purpose, together with such parts or combinations as I claim, and for which I solicit an exclusive property to be secured to me by Letters Patent.

In the process of picking tarred rope or junk, &c., (as the machines which have been used in the same have heretofore been constructed,) it has been necessary to boil the rope, junk, &c., for a considerable length of time previous to passing it through the machine to be picked, which, by reason of the great expenditure of fuel, enhances the cost of the oakum, while the hot water dissolves the tar in the rope, &c., and injures the quality of the oakum when formed. By my improvements in the machinery it is only necessary to soak the tarred rope or junk, &c., in warm water for a short time, the remainder of the operations being effectually accomplished by my improved apparatus and more perfectly than it has heretofore been done—that is to say, the oakum that is made is of a superior quality.

The figures of the accompanying plate of drawings represent my improved machinery. Figure 1 is an elevation of one side. Fig. 2 is an elevation of the opposite side. Fig. 3 is a plan, and Fig. 4 is a longitudinal vertical section.

A A A A is the frame-work of the apparatus, shaped, as seen in the several drawings, so as to support the various operative parts of the machine.

B B, Figs. 1, 2, 3, 4, is an endless apron, which passes over two cylindrical rollers, C D, Figs. 3 and 4, situated at a proper distance apart from each other, and having proper bearings on the frame E E, which is made capable of adjustment for tightening the band or apron B B by means of the screws and slots at F F, near the roller D, and by means of the slots, screws, and movable end pieces at G G, near the roller C. The rope or junk, after being softened by soaking, as above specified, is laid upon the moving apron B B, and is borne along to the feed and squeeze rollers H I, (by the action of which the water is pressed from it,) which are arranged one above the other, and have bearings in slots in the vertical standards K K, the upper roller, H, being pressed upon the lower roller, I, by means of the weighted levers L L, Figs. 1, 2, 3, 4, said levers having fulcra in the vertical plates M M, attached or screwed to the sides of the standards K K, as seen in Fig. 3, and pressing upon the loose blocks N N, which rest on the journals of the roller H. The feed-rollers H I are connected together and with the roller D, and are made to revolve (the revolution of the latter causing the apron B B to be moved along) by the following machinery, consisting of cogged wheels and pulleys:

O is a pulley playing loosely on a short shaft, P, properly supported, as shown in Fig. 1, and having a cogged pinion, Q, on it, adjacent to the inner face of the pulley O, which pinion engages with the cogged wheel R on one end of the feed-roller I.

S is a cogged wheel on the other end of the roller I, (shown by dotted lines in Fig. 2,) and T is a fast pulley on the same end. The teeth of the wheel S engage with those of the wheel U on the end of the roller H, and likewise with the pinion V, which intervenes between it and the cogged wheel W on the end of the roller D. It will be seen that power can be applied to either of the pulleys O or T, in order to revolve the several rollers, by proper bands passing from any driving-shaft.

X, Figs. 3, 4, is a sharp metallic scraper, shaped as seen in Fig. 4, which serves to prevent the tarred rope, &c., from adhering to the roller I, or to separate it from it as it passes through the rollers H I. This scraper is supported so as to turn, if necessary, by means of journals which have proper bearings in the inside of the frame-work A A. From the middle of the back of the scraper X, and near the sides, two arms, Y Y, project, as shown by dotted lines in Fig. 3 and as seen in Fig. 4.

These arms are so weighted as to keep the scraper X in its inclined position and with its sharp edge against the surface of the roller I, as shown in Fig. 4.

Z is a revolving beater or dasher, curved and shaped as seen in section in Fig. 4, and having edges somewhat sharp, as shown at *a a*, which in revolving come or pass sufficiently near to the front face of the metallic scraper X and the bite of the rollers H I to bruise or crush the rope or junk as it issues from between the rollers H I, so that the twist and knots may be softened sufficiently to enable the picking-roller, to be hereinafter described, to successfully and thoroughly separate the fibers and form the oakum. The journals of this beater Z rest and turn in suitable bearings in the top of the standards *b b*, and have pulleys at *c c c*, to either of which a band may pass from other pulleys in the machine or from an independent revolving shaft. Beneath the beater Z is a moving endless apron, *d d*, which passes from the roller *e* to and around another roller, *f*. The roller *e* is supported and turns in proper bearings in the pieces *g g*, Figs. 1 and 2, which are screwed to the frame A A by means of the screws and slots at *h h*, which provide for tightening the apron *d d* when it becomes loose. The roller *f* has proper adjustable bearings, in which it turns, (and by so turning moves the apron *d d*) at *i i*. (See Figs. 1, 2, 3.) The apron *d d* carries the rope or junk along beneath the beater X, after it has been crushed by the same, to a set of squeeze or feed-rollers, *k l*, the roller *k* being above the roller *l*, and being arranged in every respect substantially similar to the rollers H I, with weighted levers *m n*. (See Figs. 1, 2, 3, 4.) The lower roller, *l*, has a pulley, *j*, upon one end, around which a band may pass from a driving-shaft or from another pulley in the apparatus. It also has a cogged wheel, O, on the opposite end, engaging with a cogged wheel, *p*, on the end of the roller *k*, and also with an intervening cogged pinion, *q*, which in turning revolves the cogged wheel *r* on one end of the roller *f*, the turning of which, as above stated, moves the apron *d d*. A scraper, *d'*, arranged in every respect like the scraper X, and having weighted arms like it, is placed in front of the roller *l*, for the purpose of separating the rope, &c., from said rollers as it passes to be picked.

s, Figs. 1. 2, 3, 4, is the picking-cylinder, the journals of which rest and revolve in proper bearings at *t t*, and on one of which journals a pulley, *u*, is fixed, to which the power is applied to drive the cylinder by a band passing either from some pulley in the machine or from the main or a separate driving-shaft. The teeth or pickers *v v*, &c., may be shaped in any desirable way, and are arranged in parallel, diagonal, or spiral rows round the periphery of the cylinder *s*, as shown in Fig. 3, so as to open or separate or spread the fibers of the rope or junk at the same time that it picks them. Metallic bars or rods *w w* are arranged beneath the cylinder *s*, through the spaces between which the tar, dirt, &c., which become separated from the tar, dirt, &c., drop. A casing or cover, *x x*, shaped as seen by dotted lines in Figs. 2 and in 5, the latter being a plan of said casing, fits over the beater X and picker *s* and parts intervening, so as to prevent the dirt, &c., from flying about the apartment in which the machine is operated.

The several cylinders, rollers, &c., revolve in the directions indicated by the arrows in Figs. 1, 2, 3, 4; and it may be stated that I have contemplated using two or more beaters and two or more picking-cylinders, should it ever be found necessary to perfect the process of picking or forming the oakum.

Having thus described my improvements in the machinery for making oakum, I shall claim—

Bruising or crushing the rope or junk preparatory to its being operated upon by the picking-cylinders by means of a beater or dasher, in combination with the feed-rollers and scraper adjacent to it, (against which it crushes or breaks the rope,) or with such device or devices as are substantially similar, and likewise the combination of said beater or dasher with the picking-cylinder, the whole being arranged and operating substantially in the manner and for the purpose above set forth.

In testimony that the foregoing is a true description of my said invention and improvement I have hereto set my signature this 27th day of June, in the year 1842.

OTIS ALLEN.

Witnesses:
R. H. EDDY,
EZRA LINCOLN, Jr.