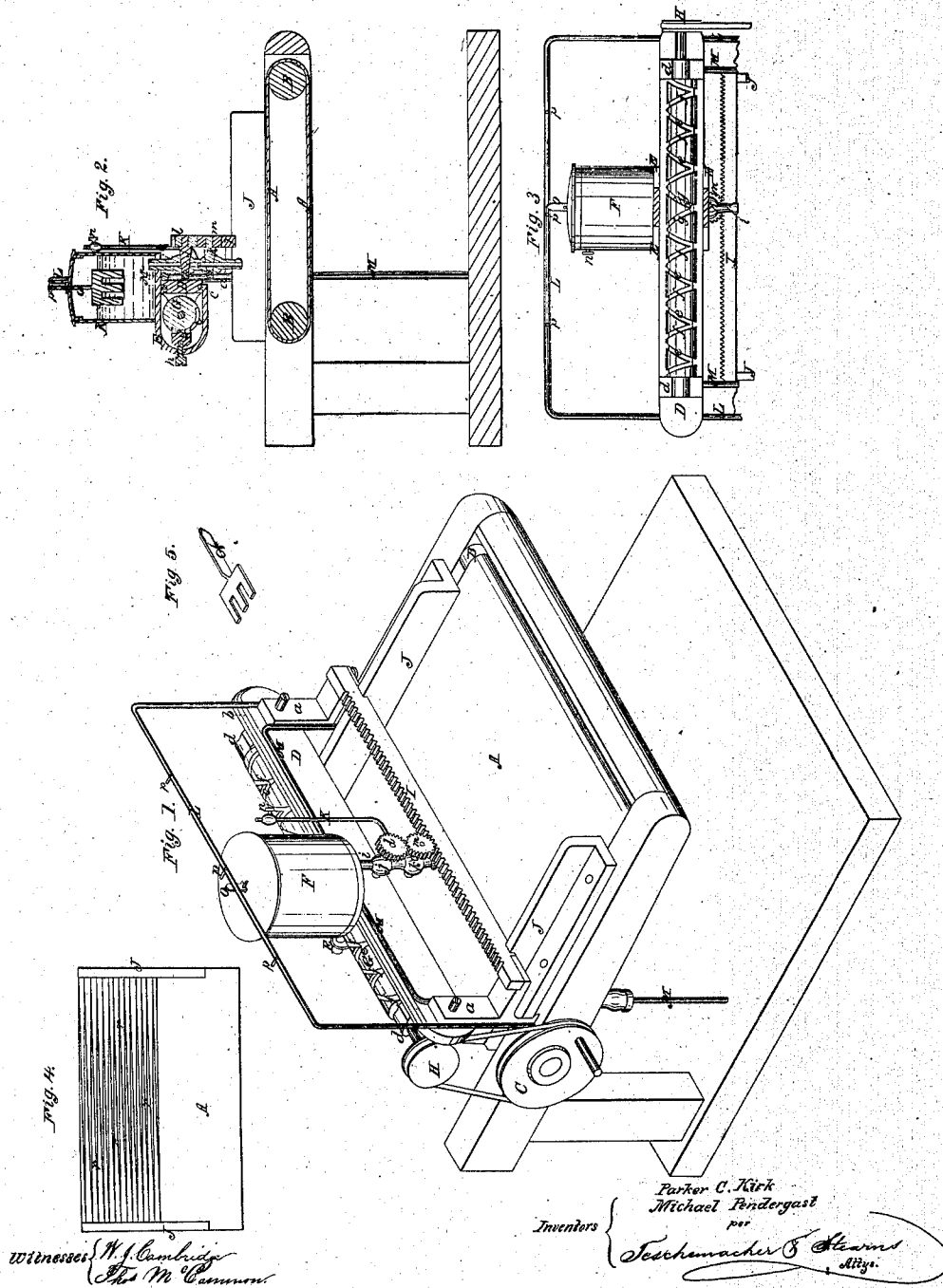


P. C. KIRK & M. PENDERGAST.
WOOL OILING APPARATUS FOR CARDING ENGINES.

No. 60,386.

Patented Dec. 11, 1866.



United States Patent Office.

IMPROVEMENT IN WOOL-OILING APPARATUS FOR CARDING-ENGINES.

P. C. KIRK AND M. PENDERGAST, OF LAWRENCE, MASSACHUSETTS.

Letters Patent No. 60,386, dated December 11, 1866.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that we, PARKER C. KIRK and MICHAEL PENDERGAST, both of Lawrence, in the county of Essex, and State of Massachusetts, have invented certain improvements in Apparatus for Oiling Wool, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a wool-oiling apparatus containing our improvements and applied to the apron of a carding machine.

Figure 2 is a transverse vertical section through the same.

Figure 3 is a rear elevation of the mechanism by which the reservoir is caused to move back and forth over the feed apron.

Figures 4 and 5, details to be referred to.

In the preparation of wool for carding it is necessary that a lubricating substance be evenly and uniformly distributed throughout its fibres to facilitate the drawing out or carding operation. Various attempts have been made to effect this object, but they have proved to be only approximately successful. Our invention relates particularly to certain improvements in apparatus for oiling wool, for which letters patent of the United States have been granted to WILLIAM H. SALISBURY. By his method the supply of oil from a travelling reservoir was regulated by means of a tube provided with cocks, which were operated by hand, which was objectionable for the following reasons: It was necessary for the person in charge of the oil reservoir to open the upper cock to determine and regulate the supply of oil to be fed upon the wool, while the lower cock was left to the care of the attendant, who was expected to open it when the machine started, and to close it when the machine stopped. As, however, it is impossible for the attendant to be near the reservoir at all times, the lower cock was frequently not opened on the starting of the machine, and no oil flowed upon the wool as it was fed along by the apron, while the cock was often left open after the machine stopped and the oil continued to flow on the wool, thereby occasioning a considerable waste. Besides the uncertainty of the attendant regulating the lower cock and the inconvenience of doing it by hand, it was frequently found that after the upper cock had remained fixed in one position for some time, sufficient sediment would accumulate within it to entirely obstruct the passage in the tube and prevent the flow of the oil therefrom. To remove the above-mentioned difficulties is the object of our invention, which consists in operating the supply-cocks of a wool-oiling apparatus by the travelling motion of the reservoir, one of the cocks being open while the other is closed, whereby the time of the attendant is not occupied, and the danger of waste occasioned by leaving the regulation of the cocks to him is avoided. Our invention also consists in certain devices connected with the reservoir, which will be mentioned hereafter.

To enable others skilled in the art to understand and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A is an endless feed apron, stretched over the rolls B, which have their bearings in the framework of a carding engine, a pulley, C, being secured to one of the rolls for communicating the motive power thereto. To the upper side of the framework are secured the vertical standards *a*, to the upper ends of which are fastened the extremities of a bar, D, which extends longitudinally above and across the apron, and is provided with grooves, *b*, in which slide projections, *c*, formed on the upper and lower plates of the carriage E, to which is secured the receptacle F for containing the lubricating substance. The mechanism by which the reservoir F is caused to move back and forth on the bar D over the apron, will now be described. In suitable bearings, *d*, projecting from near the ends of the longitudinal bar D rests a shaft or cylinder, G, having a right and left-handed screw cut thereon, forming grooves or channels, *e f*, in which fits a dog, *g*, (of the form seen in figs. 2 and 3,) the front of the dog being curved to fit and run on the spiral path described by the grooves *e f*, while the back of the dog is perforated for the reception of the smooth end of a pin *h*, which fits loosely therein; the portion of the pin near its head being provided with a screw-thread, which fits a corresponding thread in the bent portion of the carriage E, by which construction the dog is allowed to vibrate as required, to conform to the inclination of the grooves *e f*, and move the reservoir back and forth on the bar over the apron. One extremity of the screw-shaft is turned down and provided with a pulley, H, which is driven by a belt passing

over the pulley C. Through the bottom of the reservoir and the upper portion of the carriage on which it rests, proceeds the tube *i*, provided with two cocks, *j k*, of the form ordinarily employed in gas tubing, (see fig. 2.) The spindles of these cocks project outside the tube *i*, and have attached to them pinions, *l m*, which gear into each other, while the lower pinion *m* engages with a rack I, which extends longitudinally across the machine, the ends of the rack being supported by side pieces or cleats, J, which also serve as guides for the passage of the wool upon the apron. The cocks *j k* are so arranged that one of them is always open while the other is closed, and as the motion of the reservoir operates them both, a simple and reliable means is produced by which the supply of oil is automatically let on the wool at the instant the reservoir commences to travel, while the supply is immediately shut off when the reservoir stops. K is a pipe which communicates with the passage in the tube *i* between the two cocks, and is for the purpose of admitting air thereto, to give the necessary vent for causing the oil to flow therefrom; the upper end of this pipe being wholly or partially opened by operating the cock *n*, by which means the supply of oil may be graduated as desired. *o* is a strip of metal which is hung to the cover of the reservoir, and serves as an agitator (see figs. 2 and 5) for stirring and mixing the ingredients composing the lubricating liquid, which consists of oil only, or oil and water in about the proportions of one of the former to two of the latter, with a little sal soda added to assist in uniting them. The top of this agitator projects up sufficiently above the cover so that it is brought in contact with pins *p* projecting from the side of a rod or railing, L, when the reservoir is in motion along the bar D. M is a steam-pipe for preventing the oil from thickening in low temperatures.

Operation.

A strainer being placed in the top of the reservoir, the lubricating substance is poured therein, and on power being applied to the engine the apron A and reservoir F are set in motion, the speed of the former being considerably slower than that of the latter to allow the oil to be uniformly distributed through all the fibres of the wool. As the reservoir (through the connections already explained) commences to move, the lower pinion, *m*, is caused to travel on the rack I, and thus to drive the upper pinion, *l*, alternately opening and closing the cocks *j k*, one of the cocks being constantly open while the other is closed, whereby the oil commences to flow on the starting of the reservoir, and describes a path upon the wool, as indicated by the lines *r*, as seen in fig. 4. When it is required to increase or diminish the supply of oil from the tube *i*, it is simply necessary to open or contract the passage of the air in the tube K by operating the cock *n*. Should sediment temporarily pass into the passage through the tube *i*, or its cocks, it will be instantly ground up and removed by the revolution of the cocks; whereas with the cocks operated by hand when the oil-passage is clogged, considerable time is consumed in removing the obstruction. By the mechanism above described the regulation of the supply and the feed of the oil is rendered automatic, and the waste incident to the old method of operating the cocks by hand is entirely avoided. In the foregoing description we have referred to the dog *g* and the screw cylinder G in which it engages, as giving motion to the oil reservoir; this feature forms no part of our invention, and we lay no claim thereto, an application for letters patent for the same being about to be made by the inventor.

Claim.

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

Operating the supply cocks of a wool-oiling apparatus by the travelling motion of the reservoir, substantially as set forth.

We also claim operating the cocks *j k* by the pinions *l m* and rack I, substantially in the manner and for purpose described.

We also claim the pipe K, with its cock, *n*, for admitting air into the passage between the cocks *j k*, substantially as set forth.

We also claim the agitator or mixer *o*, when operated by contact with the pin *p*, projecting from the railing L, for the purpose set forth.

PARKER C. KIRK,
MICHAEL PENDERGAST.

Witnesses:

ALF'D P. CLARK,
JESSE A. LOCKE.