# J. Stewart.

## Mach. for Tarring Yarn.

No. 22,150. Patented Nov. 23, 1858.

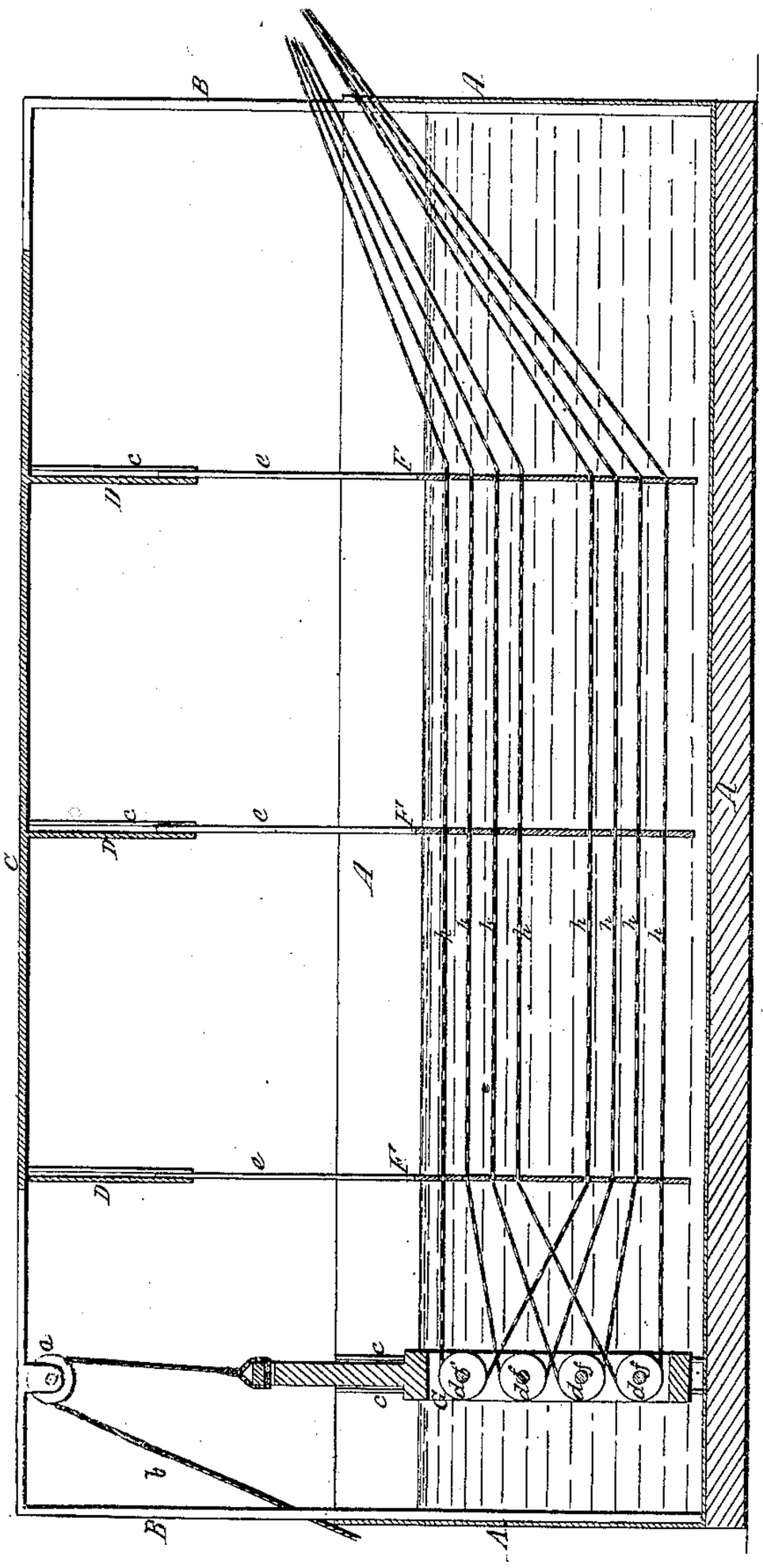


Fig. 1.

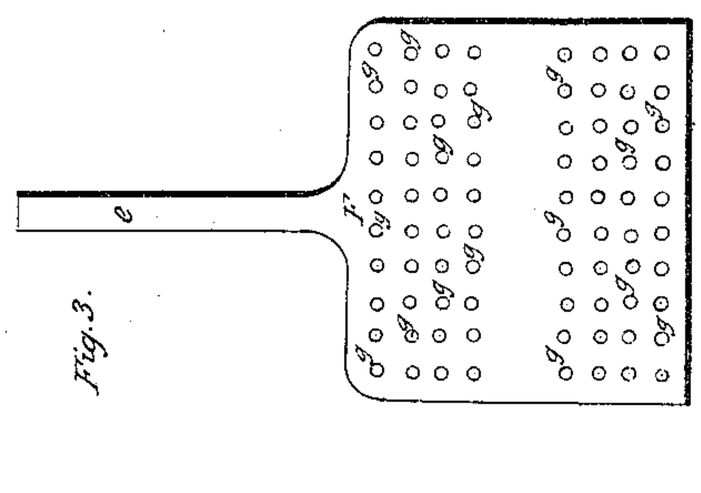


Fig. 3.

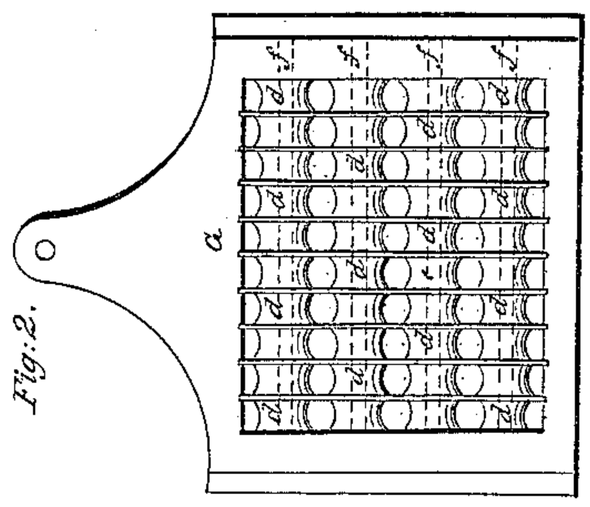


Fig. 2.

# UNITED STATES PATENT OFFICE.

JNO. STEWART, OF BROOKLYN, NEW YORK, ASSIGNOR TO CHARLES WALL, OF SAME PLACE.

## MACHINE FOR TARRING ROPE-YARN.

Specification of Letters Patent No. 22,150, dated November 23, 1858.

*To all whom it may concern:*

Be it known that I, JOHN STEWART, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Machinery for Tarring Rope-Yarn or Yarns for other Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of a machine with my improvement. Fig. 2 is a front view of the sheave frame, containing the sheaves around which the yarns are bent, in passing through the tar vat. Fig. 3 is a front view of one of the guide plates for separating the yarn.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the employment, within the tar vat, of one or more series of sheaves or conductors, around which the yarns are bent in their passage through the tar and by which they are conducted in such a manner as to cause them to pass through the tar in opposite directions, whereby they are caused to be more perfectly penetrated by the tar and to keep the tar well stirred as hereinafter explained.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A, is the tar vat, made of any suitable length, breadth, and depth, and having a frame B B C, erected above it, to carry guides D, D, D, which are for the purpose of keeping in place the guide-plates F, F, F, and also to carry a pulley *a*, over which passes a rope *b*, for raising and lowering the sheave frame G. This sheave frame is of quadrangular form and fitted to slide up and down in vertical guides *c*, *c*, *c*, secured to the interior of the vat; and it contains four series of sheaves *d*, *d*, equal in the aggregate to the number of yarns to be tarred at a time; said sheaves being arranged as shown in Figs. 1 and 2, the several series one above the other, each series on a spindle *f*, passing through the whole. The guide plates F, F, F, are of stout metal with stems *e*, *e*, *e*, fitting to the guides *c*, *c*, *c*, and each has an upper and lower set of holes *g*, *g*, of a size for the yarns to pass easily through, to keep them from fouling each other, each set consisting of a number of series or rows corresponding with the sheaves *d*, *d*, one for each sheave. These guide plates may be all connected with the same hoisting tackle to raise them from the tar in the vat, and to lower them thereinto. The tar is to be kept melted in the vat during the operation by steam pipes in the usual way or by other suitable means.

The yarns *h*, *h*, to be tarred are passed from one end of the vat, each through one of the holes *g*, in the upper set in each guide plate F, around one of the sheaves *d*, and back again through one of the holes *g*, in the lower set in each guide plate, while the sheave frame and guide plates are raised from the tar in the vat, the yarns being supplied from one set of spools or bobbins and conducted on to another set, both of which sets of spools are arranged at the same end of the vat in suitable frames. These spools or bobbins are not represented but their arrangement will be easily understood. The sheave frame and guide plates are then lowered into the hot tar, and the taking-up spools or bobbins set in motion to draw the yarns through the tar. The yarns in passing around the sheaves to return through the tar, after having once passed through it, are bent in such a manner as to open their fibers, which permits the tar to penetrate to their centers and saturate them thoroughly, which is seldom or never the case when the yarns pass merely straight through the tar as is usually the case, and by their passing through the tar in both directions and through the upper and lower strata thereof the tar is kept well stirred and at a uniform heat and state of fluidity throughout the vat and the formation of scum prevented.

What I claim as my invention, and desire to secure by Letters Patent, is:—

The employment within the tar vat of one or more series of sheaves or conductors over or around which the yarns are bent in the manner described, to open their fibers and make them pass and return in an opposite direction through the tar, for the purpose set forth.

JOHN STEWART.

Witnesses:

O. D. MUNN,

W. TUSCH.