M. FURST & W. CHADWICK.

Machine for Spinning Hemp-Yarn.

No. 214,901. Patented April 29, 1879.

Fig: 1.

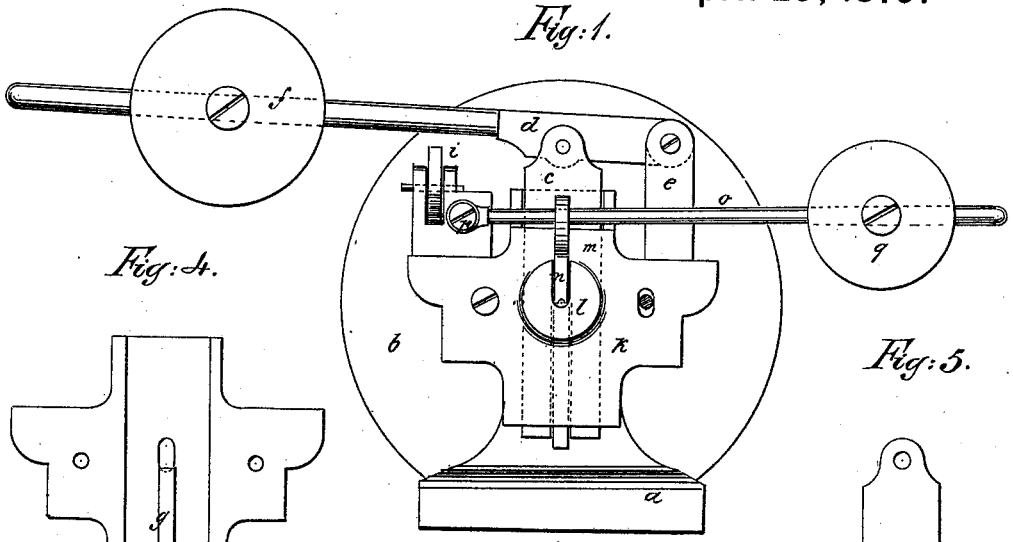


Fig: 4.

Fig: 5.

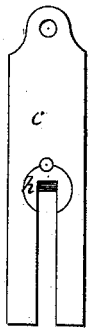


Fig: 2.

Fig: 6

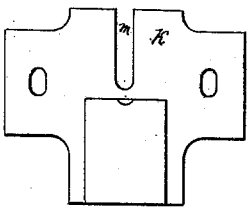


Fig: 3.

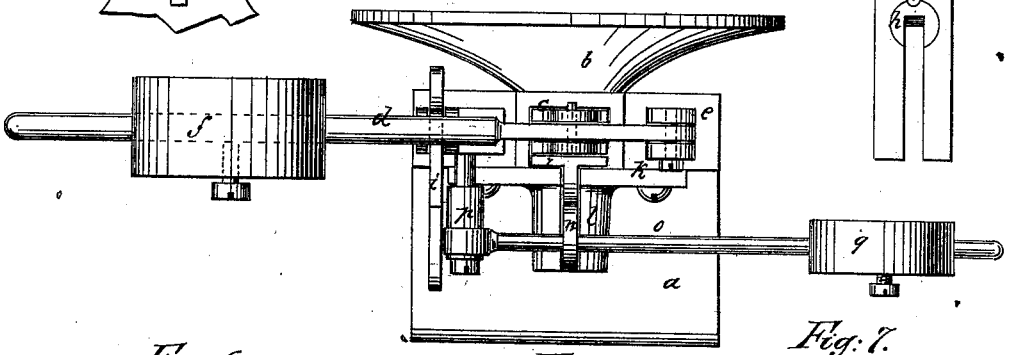
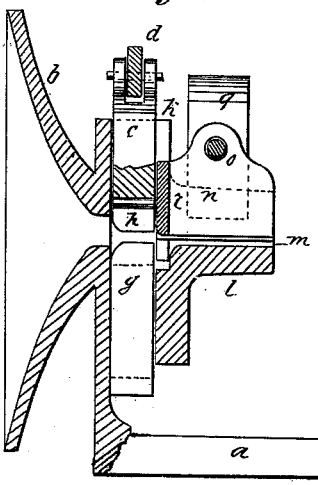


Fig: 7.



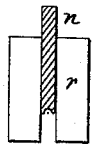
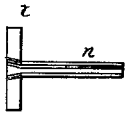


Fig: 8.



WITNESSES:

Chas. Nicola

C. Bergwick

INVENTOR:

M. Furst

W. Chadwick

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

MICHAEL FURST AND WILLIAM CHADWICK, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR SPINNING HEMP YARN.

Specification forming part of Letters Patent No. **214,901**, dated April 29, 1879; application filed November 21, 1878.

To all whom it may concern:

Be it known that we, MICHAEL FURST and WILLIAM CHADWICK, of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Machines for Spinning Hemp Yarn, of which the following is a specification.

Our improvements relate to devices that are connected with the condenser of hemp-spinning machines for nipping the slivers and polishing the yarn after it is twisted by the fliers.

The invention consists in a weighted nipping-slide and anvil, arranged back of the condenser, together with a polishing-tube so constructed as to give a yielding pressure to the yarn, extending from the point at which the slivers are nipped and where the twisting takes place. A swinging support is arranged to hold the lever (to which the nipping-slide is attached) in an elevated position when it is raised.

In the accompanying drawings, Figure 1 is an elevation of our improved apparatus at the side where the yarn is delivered. Fig. 2 is a top view. Fig. 3 is a vertical longitudinal section. The other figures are detail views and are separately referred to.

Similar letters of reference indicate corresponding parts.

The parts of the apparatus are fitted upon a base or plate, *a*, that is to be attached in the usual manner to a rocking shaft, in connection with a regulator. *b* is the condenser, of usual construction.

At the back of the condenser the casting is formed as a vertical tube, in which is the slide *c*, hung from the lever *d*, that is fulcrumed on the forked stud *e*, and carries upon its moving end a weight, *f*. This weight can be moved upon lever *d* to alter the pressure on slide *c*, and is held in place by a set-screw.

The lower end of the slide *c* is forked, (see Fig. 5,) and sits over the steel anvil *g*, that is fitted rigidly in place, with its upper end on a line with the throat of the condenser *b*. The bottom of the fork or mortise of slide *c* rests on the upper end of anvil *g*, and forms the nippers for the slivers. These nipping-edges are flared at the side toward the condenser, and to render the parts durable slide *c* is fitted with a wearing-surface of steel (shown at *h*, Fig. 5) in the form of a plug, held in place by a stay-pin, to permit of its renewal.

A swinging support, *i*, is hung on the casting in such position that it may be raised to support lever *d* and slide *c* when they are raised for threading the slivers through the apparatus.

Projecting from the back plate, *k*, which retains the nipping-slide *c* in place, is a projection, *l*, in which is cut a groove, *m*, from the upper side, and in position for the yarn to pass through. The bottom of this slot *m* is rounded, and is on a level with the nipping end of anvil *g*. The plate *k* is attached by screws passing through elongated holes in it, so that the plate and projection *l* are adjustable vertically. The plate *k* is shown separately in Fig. 6.

In the slot *m* is fitted a slide or plate, *n*. This plate *n* is hung upon a lever, *o*, that is fulcrumed at *p*, and has upon it an adjustable weight, *q*, that serves to keep plate *n* at the bottom of groove *m* with more or less pressure. The plate *n* is formed with a cross-plate, *r*, at the inner end, which plate *r* passes behind plate *k*. The edge of plate *n*, at the bottom of groove *m*, is formed concave, (see Figs. 7 and 8), so that, in connection with the concave bottom of the slot, it forms a circular tube or passage for the yarn, and exerts a pressure that may be varied by shifting weight *q*. The concave surfaces of groove *m* and plate *n* are polished, and the effect of the pressure is to concentrate the fibers and smooth the yarn during the twisting operation.

The slivers of hemp will be threaded through the throat of the condenser, beneath slide *c* and plate *n*, to the fliers, in the usual manner, and the slide *c* will nip and hold them with the required pressure, according to the size of yarn to be made. This pressure is adjusted by changing the position of weight *f*.

The weights *f* and *q* furnish an adjustable and uniform pressure, and permit the opening to enlarge for the passage of a knot or lump without stopping the machine. These weights may, however, be applied in other ways than that shown; and while we prefer weights for the apparatus we do not limit our-

selves in that particular, as springs may be used for obtaining the required pressure.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with the nipping-slide and lever *d*, of the pivoted support *i*, as and for the purpose described.

2. The combination, with the condenser, anvil, and upper slide, of the plate *k*, provided with projection *l*, the pressure-slide *n*, the lever *o*, and the weight, as and for the purpose specified.

MICHAEL FURST.
WILLIAM CHADWICK.

Witnesses:
GEO. D. WALKER,
C. SEDGWICK.