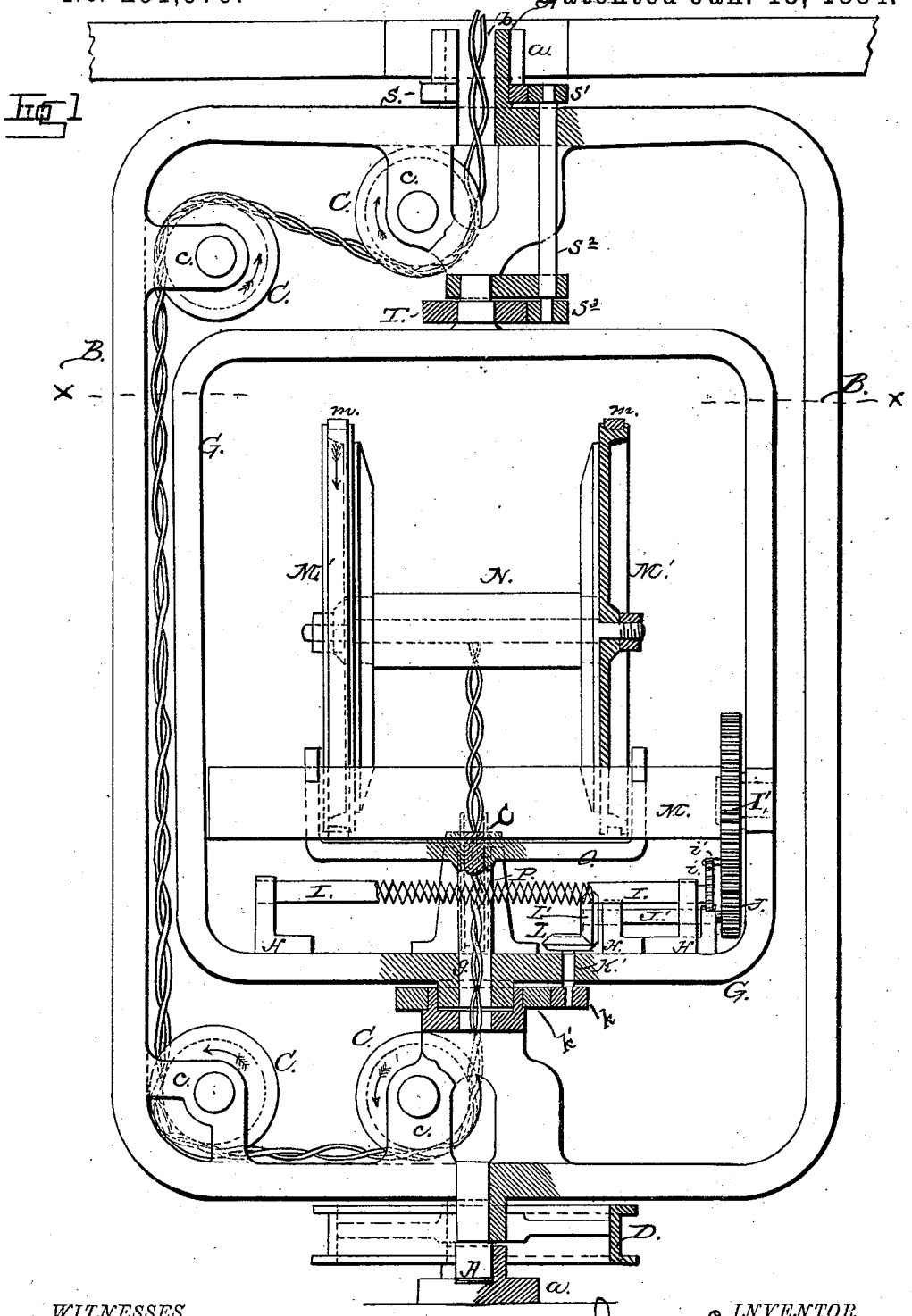
(No Model.) 2 Sheets—Sheet 1.

G. L. BROWNELL.

MACHINE FOR MAKING WIRE CORDAGE.

No. 291,979. Patented Jan. 15, 1884.

Fig. 1



WITNESSES

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Fig 2

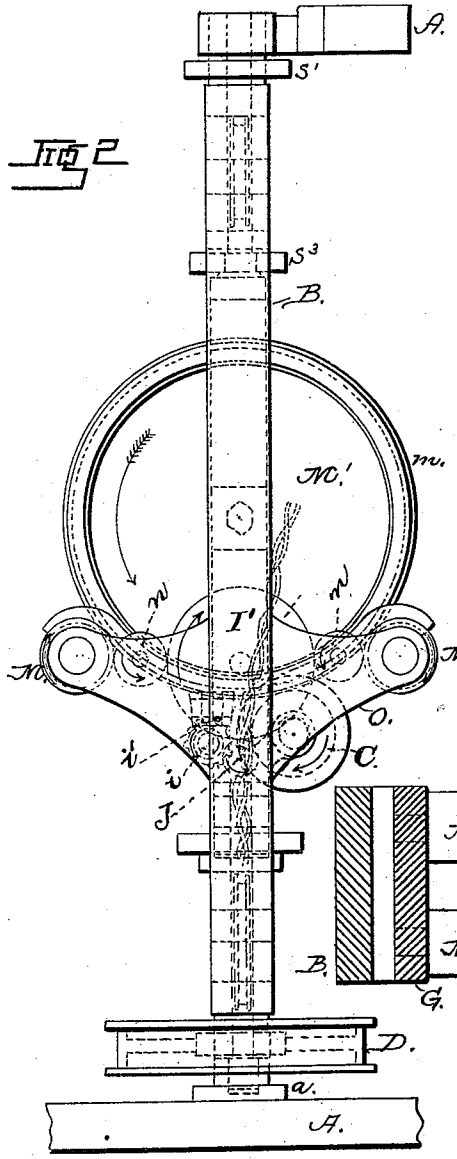
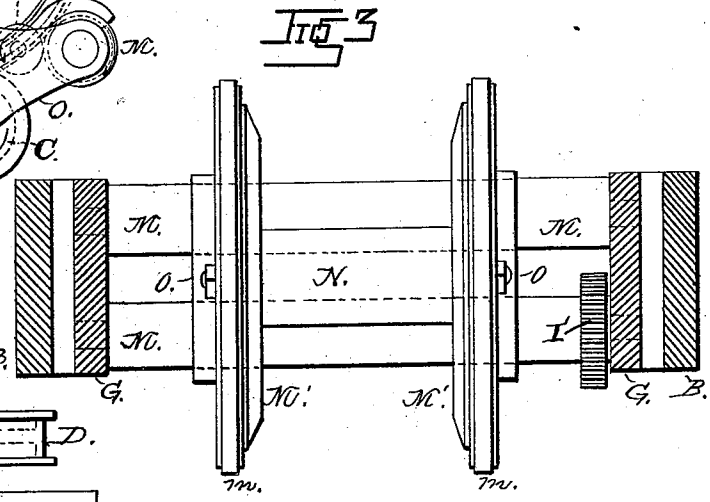


Fig 3



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UNITED STATES PATENT OFFICE.

GEORGE L. BROWNELL, OF WORCESTER, MASSACHUSETTS.

MACHINE FOR MAKING WIRE CORDAGE.

SPECIFICATION forming part of Letters Patent No. 291,979, dated January 15, 1884.

Application filed May 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. BROWNELL, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Machines for Making Wire Cordage; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to machines for twisting wires, cordage, or the like; and it consists in the construction and arrangement of parts of the machine, as will be hereinafter described, and particularly pointed out in the claims.

The objects of the invention, among others, may be said to be to provide a twisting device which shall be uncomplicated and inexpensive of manufacture, simple and efficient in operation, and durable and reliable in service, one which shall impart two twists to the material at every revolution of the flier, and which shall automatically reel or spool the wire as fast as it is twisted, winding the same regularly and evenly from side to side.

In the accompanying drawings, which form a part of this specification, Figure 1 is a front elevation of my improved apparatus. Fig. 2 is an end elevation, and Fig. 3 is a horizontal section, looking downward, taken on the line *x x* of Fig. 1.

For convenience I shall describe the machine as adapted for the twisting of cordage or wires in the manufacture of barbed or wire fencing material; but it will be apparent that the principle involved may be applied with equal efficiency in other arts.

Referring to the drawings, in which similar letters of reference indicate like parts in all the figures, A designates the journals, and *a* the journal-bearings, of a rectangular frame or flier, B, having a central longitudinal aperture, *b*, as shown. Upon the inner side of this flier B, all arranged upon the same side of its axis, are the journal-bearings *c* of four or more idle-rolls, C, which serve as guides, over which the material is fed.

Rigid with one of the journals of the frame or flier B is a pulley, D, through which the rotary motion is imparted.

Journaled in the axis of motion—that is to say, having its bearings in the center of motion of the flier B—is a rectangular frame, G, having a diametrical longitudinal open way, *g*, through which the material is adapted to pass in a direction opposite to that in which it passes through the aperture *b*. Upon the inner surface of the lower bar of this frame G, and rigid therewith, are brackets H, in which is journaled a right and left return-screw, I, having upon one end thereof a pinion, *i*, which connects by a pin, *i'*, on gear I', journaled in the frame G, or otherwise, with a gear-wheel, J, rigid with a shaft, J', journaled in the brackets H. The shaft K' is journaled in the lower bar of the frame G, and carries upon its upper end a gear-wheel, L, which meshes with a gear-wheel, L', arranged upon the shaft J'.

On the lower end of the shaft K' is rigidly secured a friction-roller, *k*, which bears against the collar *k'* of the flier B, and by this arrangement it will be observed that the rotary motion of the flier B imparts a similar motion to the gear-wheel J through the connecting-shafts J' and K' and their intermeshing gearings.

Journaled in the frame G are two rollers, M, each having a frictional or gear connection with the gear-wheel J through the medium of the small rollers *n n* and gear or frictional wheel I', and these rolls M support the disks M' of the spool or reel N. A cradle, O, is provided with a reversible dog, P, of any well-known and approved construction, which dog is adapted to traverse the screw I in one direction, trip and return in the opposite direction upon the same screw, in a manner well understood by those skilled in the art. The cradle O lies between the rolls M, and has upon either end arms which act upon the outer surface of the disks M'. These disks M' have peripheral friction-bands *m*, by means of which the spool partakes of the rotary motion of the rolls M, and the spool is impelled to the right or left as it follows the direction of the cradle.

S designates a stationary gear-wheel, rigid with the upper bearings, with which meshes a gear-wheel, S', rigid on a shaft, S^2, journaled in the upper bar of the flier B.

Upon the opposite end of the shaft S^2, and

of the same size as the wheel S′, is a gear, S², which gear meshes with a gear-wheel, T, rigid with the frame G. By this construction it will be observed that the frame G is impelled in the direction opposite to that of the flier B, and of course carries the spool or reel with it. The material being fed through the aperture *b* downward, or in any other desired direction, according to the position of the machine, and over the first roll or pulley C, partakes of one twist. It is passed over the other pulleys C and passes through the way *g* in the frame G in the direction opposite to that in which it is passed through aperture *b*, and is wound upon the spool. If the frame G was stationary and only the flier B revolved, each revolution would, it will be observed, twist the wire twice, but in the device here illustrated the twisting would be multiplied. The rolls upon which the reel-disks bear give to the same a rotary motion, and the spool traverses from side to side as impelled by the reversible or return dog.

Modifications in the details of construction may be made without departing from the principle or sacrificing the advantages of my invention, the essential features of which will be readily understood from the foregoing description, taken in connection with the drawings—as, for instance, gear-wheels may be used, instead of frictional rollers, to connect the rollers M with the shaft J′.

I deem it important that the material to be twisted is first fed through the revolving flier and then obtains a bearing therein, and then passes from the flier in an opposite direction and obtains a bearing, thus doubling the twist with every revolution of the flier.

What I claim is—

1. The combination, with the flier B and frame G, of the return-screw I, cradle O, provided with the reversible dog P, rollers M, the spool N, having disks M′, with bands *m*, and means for operating said flier and frame, and from the said flier the screw I and rollers M, as shown and described.

2. The combination, with the flier B and frame G, of the cradle O, provided with the reversible dog P, screw I, the rollers M, spool N, having friction-disks M′, the shaft K′, having friction-rollers *k* and the gear-wheel L, shaft J′, provided with gear-wheels L′ and J, and means for operating said rollers M and screw I from said gear J, as shown and described.

3. The combination, with the flier B and frame G, with the connections between said flier and frame, of the rollers M, screw I, and means for operating said rollers and screw from the flier, cradle O, provided with dog P, the spool N, having disks M′, with friction-bands *m*, as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE L. BROWNELL.

Witnesses:

CHARLES N. HAIR,

ISAAC D. GOULDING.