

F. G. TEES.
Clutching and Braking Devices for Power-Driven
Sewing-Machines.

No. 213,711.

Patented Mar. 25, 1879.

FIG. 1.

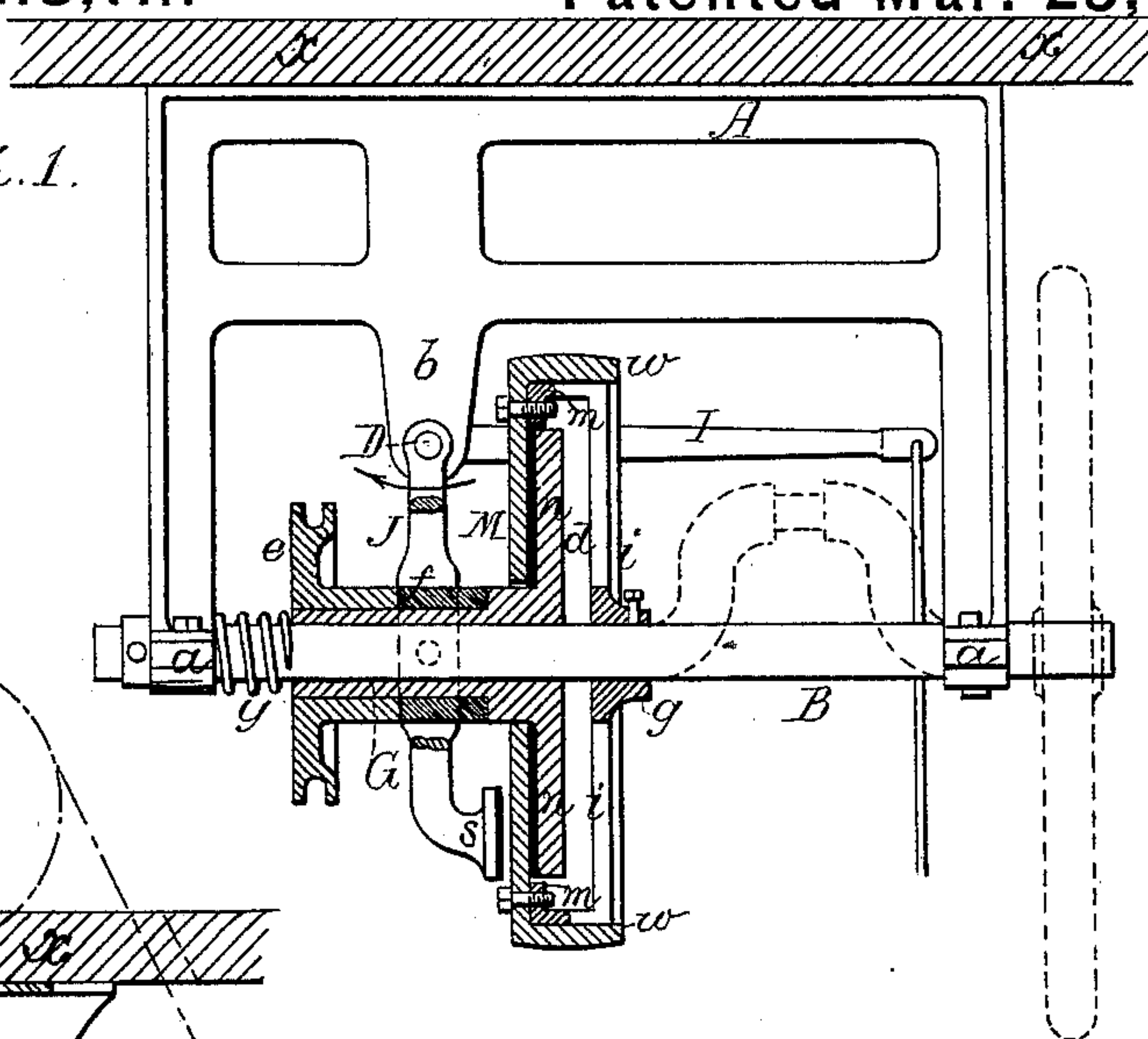


FIG. 3.

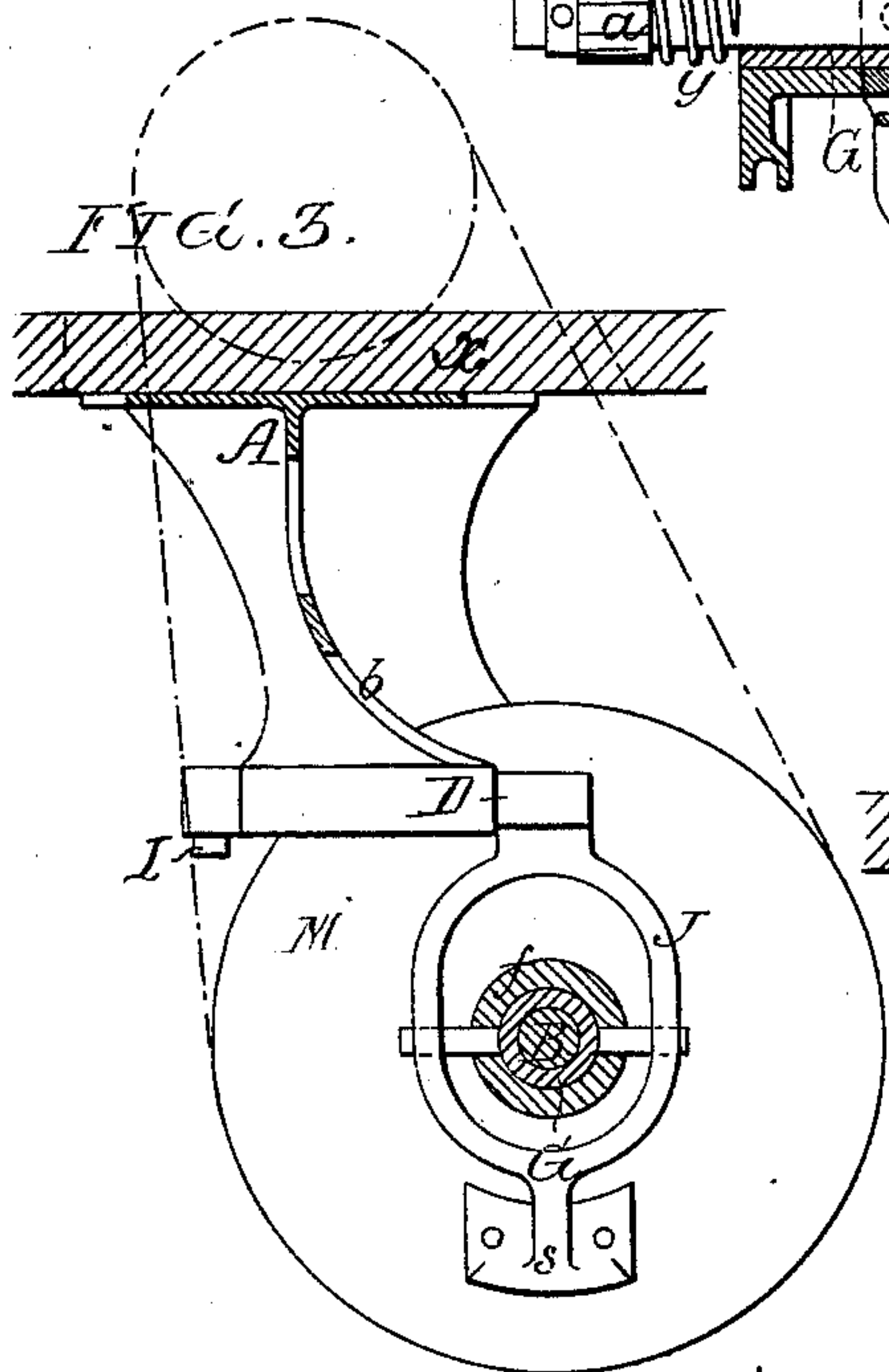
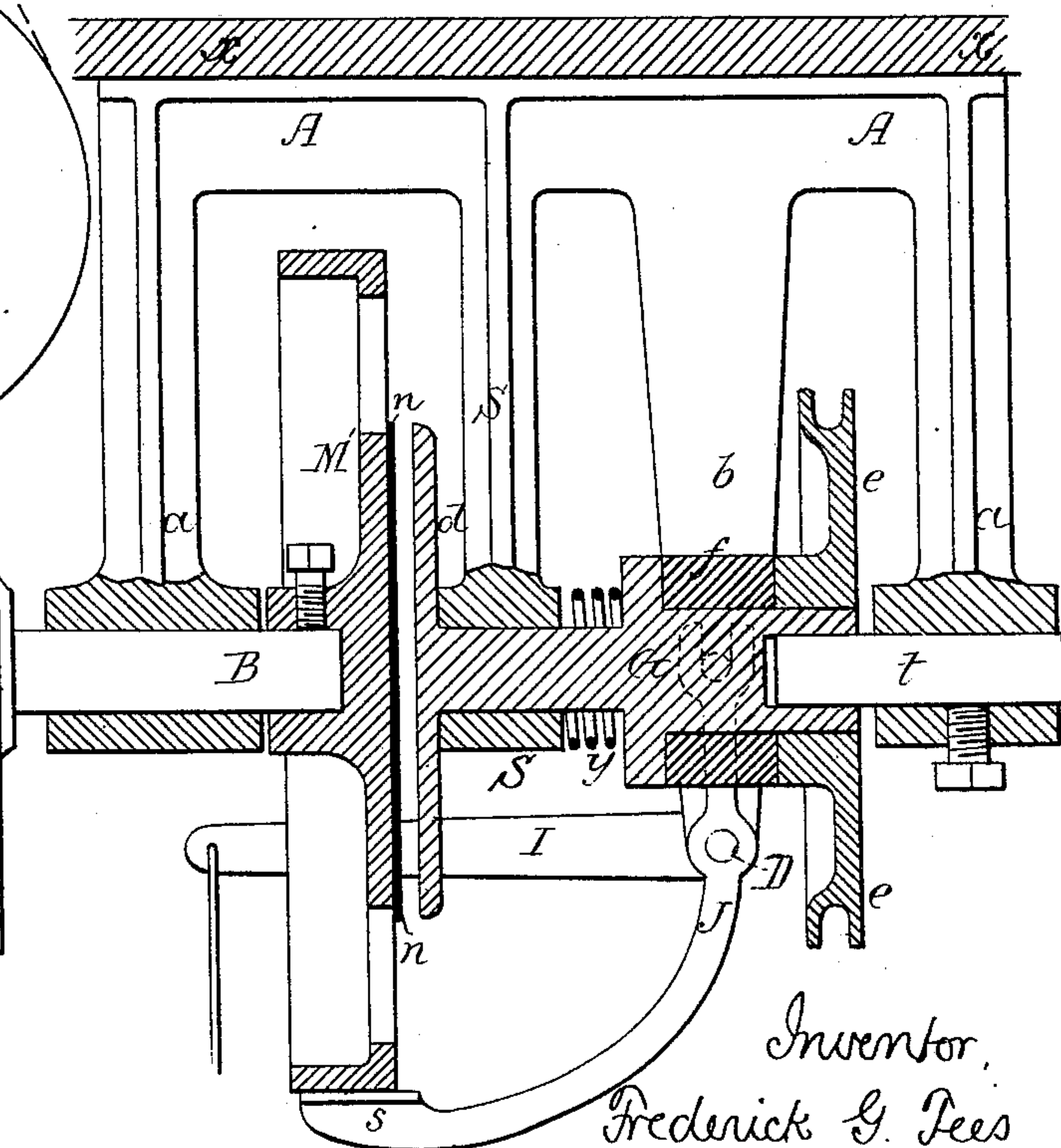


FIG. 2.



Witnesses
Hubert Howson
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UNITED STATES PATENT OFFICE.

FREDERICK G. TEES, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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IMPROVEMENT IN CLUTCHING AND BRAKING DEVICES FOR POWER-DRIVEN SEWING-MACHINES.

Specification forming part of Letters Patent No. **213,711**, dated March 25, 1879; application filed
October 17, 1878.

To all whom it may concern:

Be it known that I, FREDERICK G. TEES, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Clutching and Braking Devices for Power-Driven Sewing-Machines, of which the following is a specification:

The main object of my invention is to prevent the access of oil to the leather or equivalent elastic friction-disk used in connection with the clutching apparatus of a power driving device for sewing-machines, a further object being compactness in the arrangement of the parts of the clutch.

These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figures 1 and 2 are sectional views of two different forms of apparatus whereby my invention is carried into effect; and Fig. 3, a transverse section on the line 1 2, Fig. 1.

In Figs. 1 and 3, A represents a frame, preferably of cast-iron, having bearings *a a* for a longitudinal shaft, B, and a bearing, *b*, for a transverse rock-shaft, D, the top of the frame A being flat, so that said frame can be firmly bolted to the under side of the table *x* of a sewing-machine. Sliding loosely on the shaft B is a sleeve, G, on one end of which is formed a disk, *d*, a pulley, *e*, being secured to the opposite end of the sleeve, and a ring, *f*, being clamped between the hub of said pulley and a shoulder on the sleeve. The ring *f* has projecting pins adapted to openings in a lever, J, secured to the rock-shaft D, the latter also having an arm, I which is connected to the treadle of the machine by any suitable rod—the pitman-rod of the ordinary machine, for instance. To the shaft B is bolted or otherwise secured a hub, *g*, having a number of arms, *i*, which carry a ring, *m*, and to the latter is firmly bolted an annular plate, M, the said plate, with the ring *m*, arms *i*, and hub *g*, forming a cage, which incloses the disk *d*, not, however, so closely as to prevent free longitudinal movement of the latter to a certain extent. The plate M has a projecting flange, *w*, which forms the rim of a pulley, the belt from the latter passing up through openings in the

frame A and table *x*, and over the pulley on the main shaft of the sewing-machine. (Shown by dotted lines in Fig. 3.) On the face of the disk *d*, adjacent to the inner face of the plate M, is a ring, *n*, of rubber, leather, cork, or other elastic or semi-elastic material, in order to insure proper frictional effect when the disk *d* is moved toward the plate M, owing to the operation of the treadle, so as to move the lever J in the direction of the arrow. The pulley *e* is adapted for the reception of a belt which passes round a pulley on a power-driven shaft near the floor, and when the disk *d* is moved up toward the plate M, as shown in Fig. 1, the rotation of the pulley *e* is transmitted, through the medium of the plate M, arms *i*, and hub *g*, to the shaft B.

When the pressure on the treadle is removed, the action of a spring, *y*, against the end of the sleeve G causes the disk *d* to move away from the inner face of the plate M, so as to free the ring *n* from frictional contact therewith, a head, *s*, on the end of the lever J coming into contact with the outer face of the plate M, and effecting the instant stoppage of the rotation of the same.

In Fig. 2, although the essential features of my invention are preserved, the details of the arrangement are somewhat modified. For instance, the shaft B is short and is carried entirely by one bearing, *a*, the other bearing carrying a fixed stud or pin, *t*, on which, and in a bearing, S, turns loosely the sleeve G.

A disk, M', secured to the end of the shaft B, takes the place of the cage and plate M of Fig. 1, while the brake *s* acts on the periphery of the disk instead of on the face of the plate.

It will be observed that both in Figs. 1 and 2 the friction ring or disk *n* is isolated from the shafts or bearings to which oil is applied. Thus, in Fig. 1, the hub of the disk *d*, forming part of the sleeve G, intervenes between the ring *n* and the shaft B, while in Fig. 2 the bodies of the disks M' and *d* intervene between the bearings *a* and S and the disk *n*.

By this means I prevent the coating or saturation of the ring or disk *n* with oil, and thereby maintain said ring or disk always in proper working condition.

It will be observed that the shaft, pulley, friction-clutch, and brake are carried by a frame, which can be readily applied to or removed from the under side of the table of a sewing-machine.

By this means I am enabled, in a few moments, and without the removal of any of the parts of an ordinary sewing-machine, to adapt the latter to be driven by power, or to restore it to its original condition. This is a point of considerable importance, as there are numerous factories in which the sewing-machines are owned by the operatives, who do not wish such changes to be made in the machine as will interfere with the ordinary foot-power driving appliances.

If desired, a crank may be formed on the shaft B and a fly-wheel secured to the end of the same, as shown by dotted lines, so that the said shaft may be used in place of the ordinary shaft of the machine, even when foot-power is used. This, however, is not essential.

I claim as my invention—

1. A friction-clutch in which a portion of the body or hub of the friction disk or disks intervenes between the elastic friction ring or disk *n* and the parts to which oil is applied, thereby isolating said ring or disk *n*, and preventing the saturation of the same with oil, as set forth.

2. The combination of the shaft B and the disk *d*, sliding thereon, with the hub *g*, arms *i*, and plate M, forming a cage for inclosing the disk *d*, as specified.

3. The combination of the shaft B, the sliding disk *d*, and the plate M, having a flange, *w*, for forming the rim of a pulley, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK G. TEES.

Witnesses:

ALEX. PATTERSON,
HARRY SMITH.