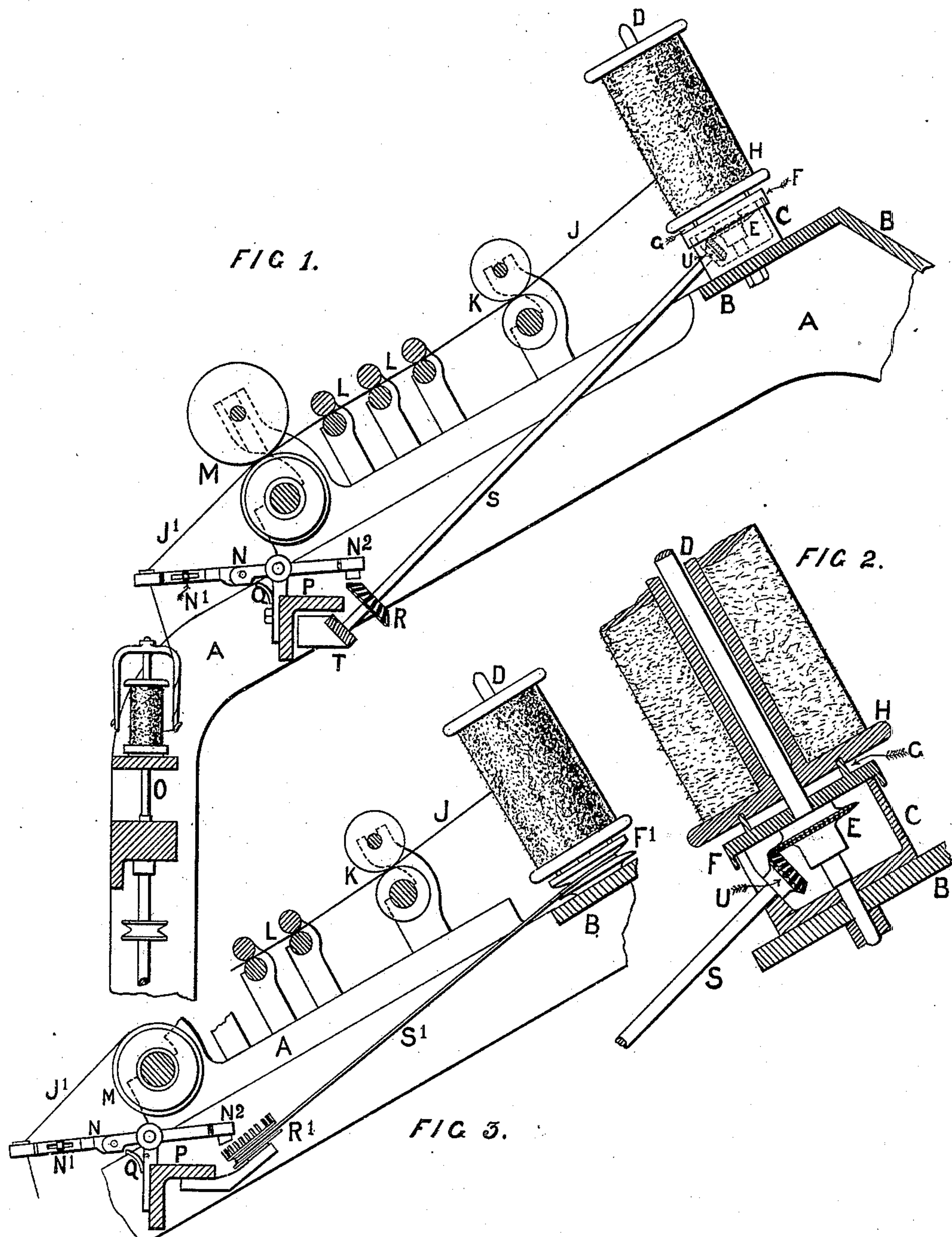


T. MITCHELL.
Spinning-Machine.

No. 223,748.

Patented Jan. 20, 1880.



WITNESSES

INVENTOR

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UNITED STATES PATENT OFFICE.

TOM MITCHELL, OF BRADFORD, COUNTY OF YORK, GREAT BRITAIN.

SPINNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 223,748, dated January 20, 1880.

Application filed October 2, 1879.

To all whom it may concern :

Be it known that I, TOM MITCHELL, of Bradford, in the county of York, in the Kingdom of Great Britain and Ireland, have invented a new and useful Improvement in Spinning-Machines, of which the following is a specification.

The object of this invention is to prevent waste and twofold yarn when the end breaks; and my improvement consists of the combination, with rolls, spinning-spindle, and operating mechanism, of a balanced lever acted on by the yarn, a toothed wheel geared with a wheel or pulley flange carrying the bobbin, so as on the fall of the lever to effectually stop the roving-bobbin the same instant the end or thread of yarn breaks, as more fully described hereinafter, so that no waste or twofold yarn can possibly take place, and thus the yarn can be guaranteed against the serious defects arising from doubling of yarn.

In the accompanying drawings, Figure 1 is an end sectional elevation of one side of a spinning-frame, showing the arrangement by which I stop the roving-bobbin by bevel-gear. Fig. 2 is an enlarged section through a roving-bobbin flange-plate and box containing bevel-wheels. Fig. 3 is a view of a modification.

To the roving-boards B, at the top and at each side of the frame A of the spinning-machine, I secure a box, C, opposite to each spindle. Through the center of each of these boxes C passes a roving-peg, D, and over each peg, near its lower end, fits a bevel-wheel, E, which is secured to flange-plate F, these wheels and flange-plates being free to revolve on pegs D.

On each flange-plate is one or more pins, G, which fit into corresponding holes in the flange H of the roving-bobbin.

The roving-thread J is conducted between the back rollers, K, carriers L, and front rollers, M, to which motion is imparted in the same manner as in ordinary spinning-frames.

After each yarn J' passes from between the front rollers, M, it is conducted through an eye formed in one end of a balanced lever, N, and thence to the bobbin on the revolving spindle O. These levers N, as many in number as there are spindles, are pivoted to brackets Q, secured to the top rail, P, of the frame.

The end N² of each lever is heavier than the other, and on this end N², I form a projecting pin, which, when the end N² of the lever falls, will catch between the teeth of a bevel-wheel, R, on the inclined shaft S, having bearings in a transverse bar, T, and the box C. On the opposite end of the shaft S is a bevel-wheel, U, gearing with the wheel E on the flange F, turning with the bobbin.

In a slot in the light end of each balanced lever N is secured a weight, N', so as to be adjustable to accommodate the balance of the lever to the weight and the drag required to spin the yarn.

Thus it will be seen that by the rollers and carriers drawing the roving-threads toward the spindles, the roving-bobbins, diagonal shafts S, and wheels will revolve, and when any of the threads of yarn break the drag on the eye end of the lever N is released, the lever end at N² will fall toward the bevel catch-wheel R, and the catch-pin will stop the revolving wheel R and prevent the roving-bobbin connected therewith delivering a supply of roving-thread J to the front rollers, and thus prevent waste and twofold yarn.

In the modification shown in Fig. 3 I substitute for the bevel-wheel R and the devices for gearing it with the flange carrying the bobbin a toothed pulley, R', geared by a band, S', with the flange-plate F', provided with a groove for the said band. By this means the drag of the roving-thread J causes the catch-wheels to revolve, and when any of the threads of yarn break the catch-pin end of the balanced lever N will fall and stop the catch-wheel R' and roving-bobbin connected therewith, and thus stop the supply of roving-thread J to the rollers and prevent waste and twofold yarn.

I am aware that in the English Patent No. 580 of 1855 there is shown a method of stopping the rotation of a yarn-bobbin by a balanced lever, one end of which enters a stop on the said bobbin when the yarn breaks, or on a reciprocating toothed bar; but this arrangement necessitates the use of a balanced lever of inconvenient length in spinning-machines.

By the present invention the stop-motion is made more certain in its action by construct-

ing the balance-lever to act on a toothed wheel geared with a wheel attached to or forming part of the flange-plate carrying the bobbin.

I claim as my invention—

- 5 The combination of the rolls, spinning-spindle, and operating mechanism with a balanced lever, N, a toothed wheel, and a flange-plate adapted to carry the bobbin and having a wheel secured to or forming part thereof, and

geared with the said-toothed wheel, all substantially as described.

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

TOM MITCHELL.

Witnesses:

JOHN GILL,
TOM PITTS.