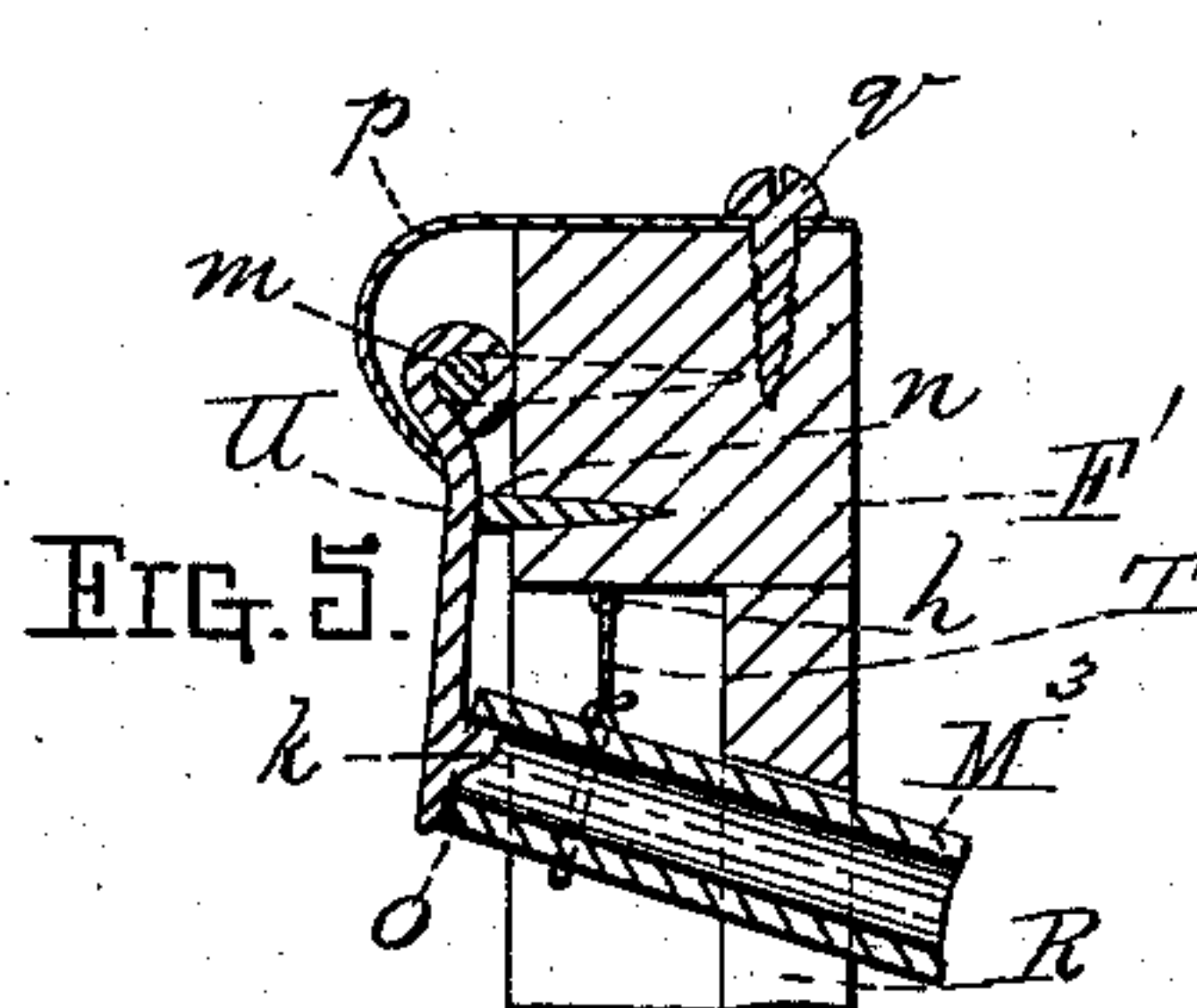
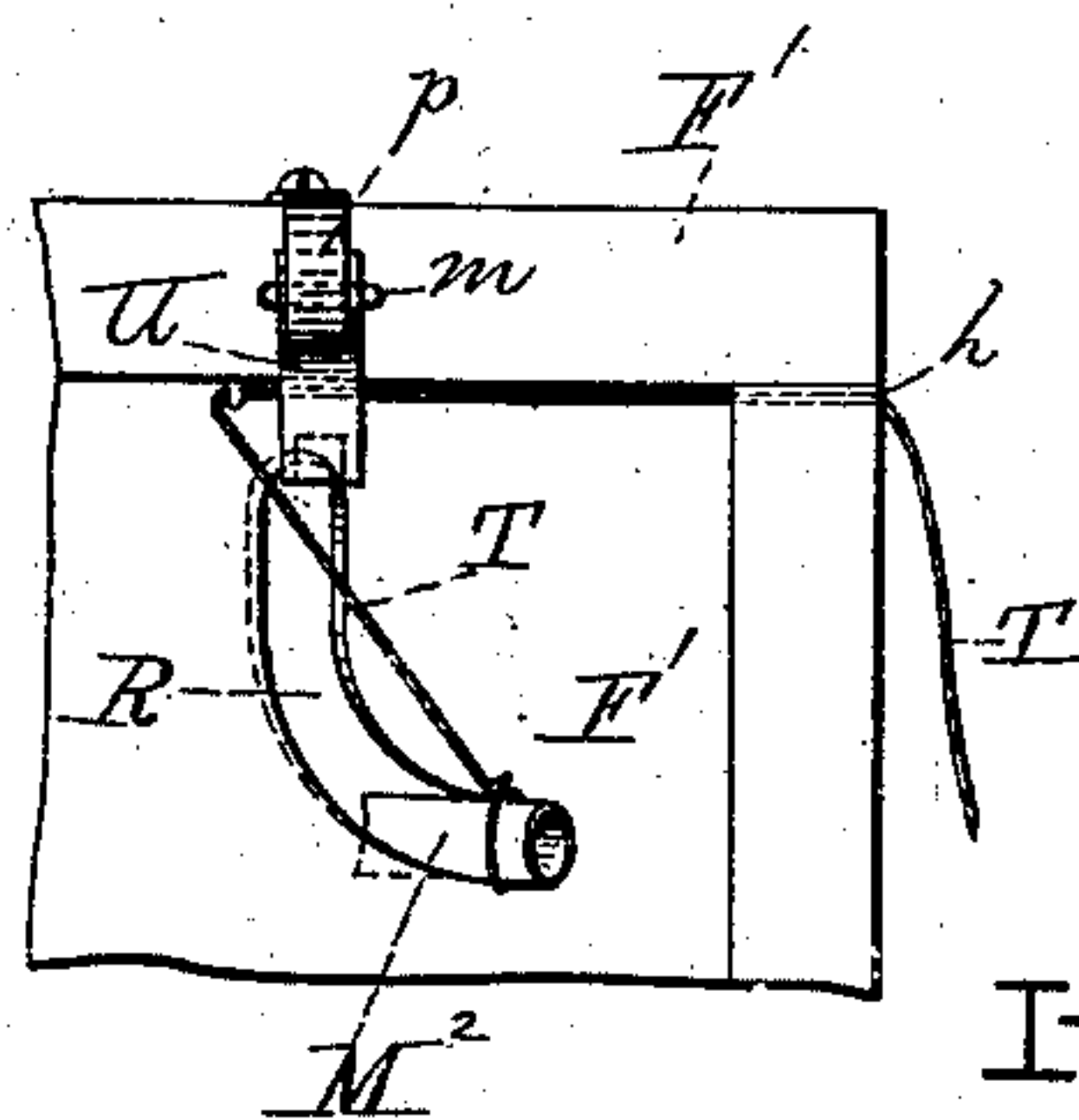
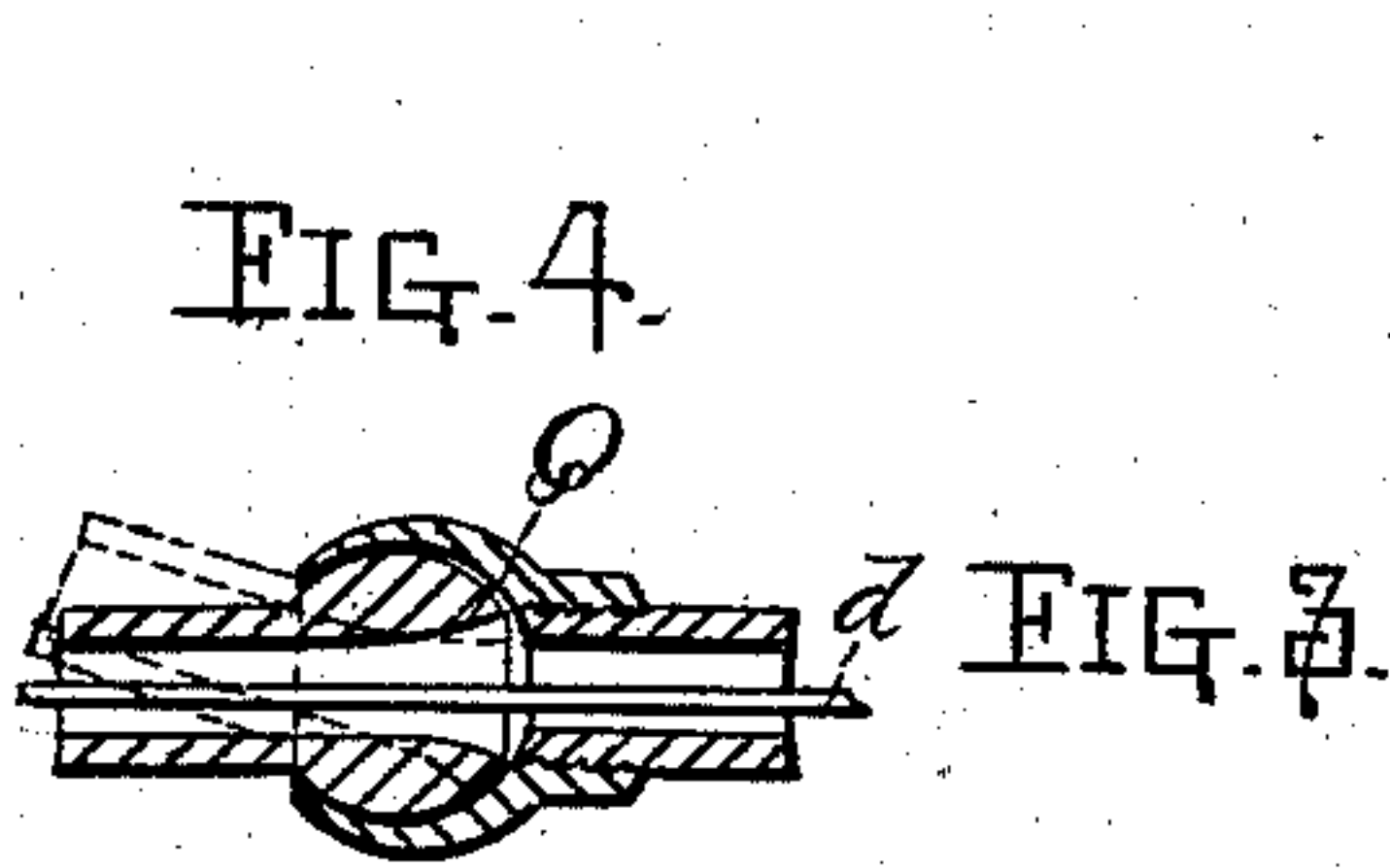
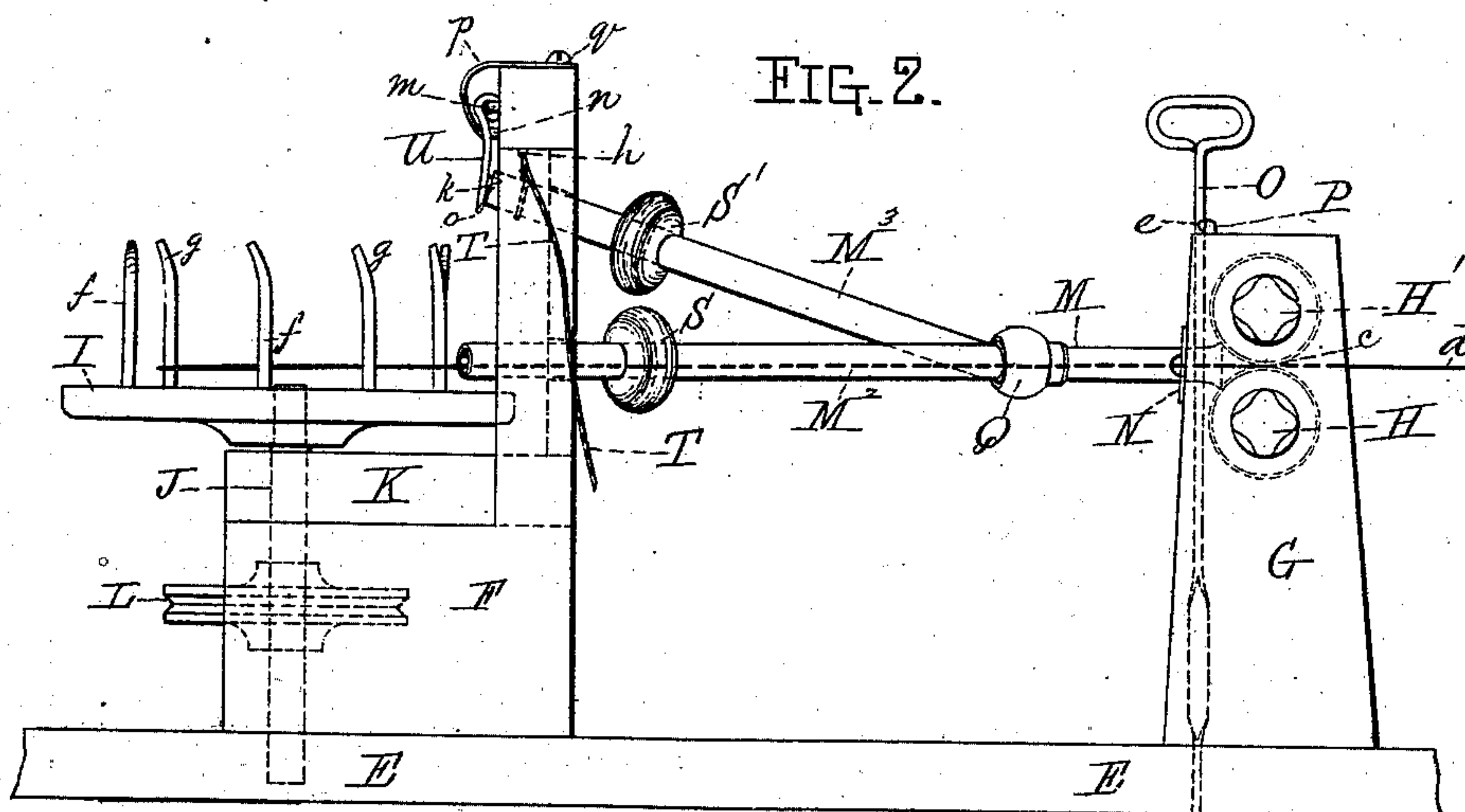
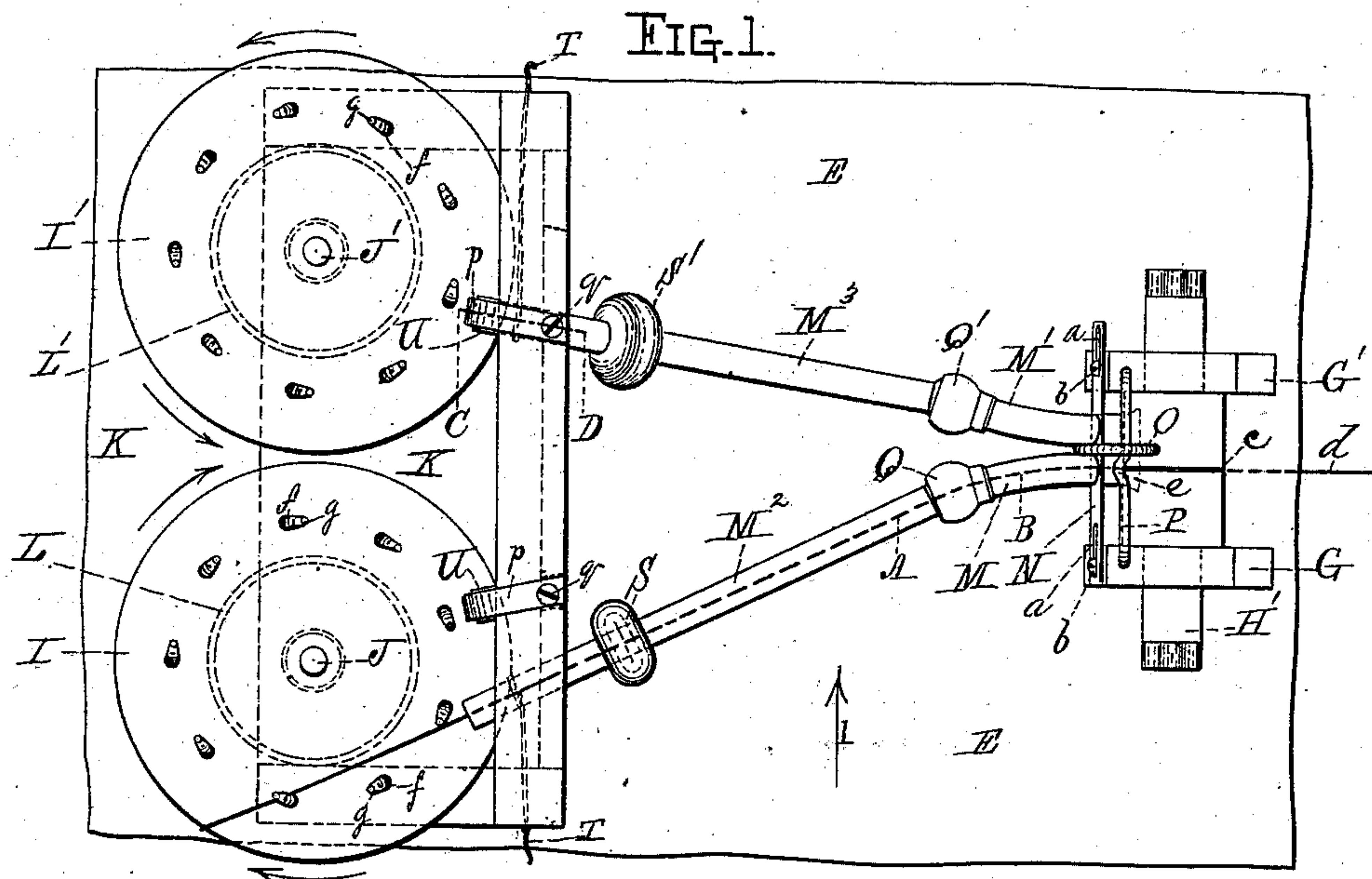


C. H. MORGAN & F. H. DANIELS.
Reel for Rolling-Mills.

No. 224,840.

Patented Feb. 24, 1880.



Witnesses=

Thos. G. Dodge
Edwin C. Moore

Inventors=

Chas. H. Morgan
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UNITED STATES PATENT OFFICE.

CHARLES H. MORGAN AND FRED H. DANIELS, OF WORCESTER, MASS.; SAID DANIELS ASSIGNOR TO WASHBURN & MOEN MANUFACTURING COMPANY, OF SAME PLACE.

REEL FOR ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 224,840, dated February 24, 1880.

Application filed February 20, 1879.

To all whom it may concern:

Be it known that we, CHAS. H. MORGAN and FRED H. DANIELS, both of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Rolling-Mill Reels for Automatically Coiling Wire Rods; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a top or plan view of our said improved automatic reel, also showing the last set or finishing-rolls of a continuous or other rod-rolling mill for the purpose of more clearly illustrating our said invention. Fig. 2 represents a side view of the parts shown in Fig. 1, looking in the direction indicated by arrow 1 of the same figure. Fig. 3 represents, upon an enlarged scale, a front view of a portion of the machine, which will be hereinafter more fully described; and Figs. 4 and 5 represent, upon the same enlarged scale, sections of portions of the machine, taken on lines A B and C D, respectively, and which will also be hereinafter more fully described.

To enable those skilled in the art to which our invention belongs to make and use the same, we will proceed to describe it more in detail.

In the drawings, E represents the foundation or bed of the machine, upon which the supporting-frame F of said machine is arranged and secured, and upon which are also arranged and secured housings G G' of finishing-rolls H H'.

The machine is constructed with two reels, I I', which are secured to the upper ends of vertical shafts J J', and said shafts J J' are fitted to turn in bearings formed in the part K of frame-work F at their upper ends and in foundation E at their lower ends. Reels I I' are driven by means of grooved driving-pulleys L L', which are secured upon shafts J J', said driving-pulleys being in turn driven by means of belts passed around the same, connected with any suitable and convenient driving mechanism.

The wire rod is conducted from the finishing-rolls H H' to the reels by means of adjustable swivel guide-pipes M M', said pipes being secured to a plate, N, which is moved laterally, being provided with slots *a*, through which screws *b* pass and enter housings G G'. Said plate N can be moved back and forth by means of an operating-lever, O. The lateral motion of said plate N is governed by the length of slots *a*, which are made just sufficient in length to bring the openings in the guide-pipes alternately in a direct line with the groove *c*, through which the finished rod *d* passes.

The guide-pipes M M' are held in position after adjustment by operating-lever O bearing upon one side or the other, as the case may be, of the bent part *e* of a holding-rod, P, secured in the tops of housings G G'.

The forward ends M² M³ of guide-pipes M M' are made to swivel by means of ball-joints Q Q'. (Shown in section, Fig. 4, of the drawings.) The purpose of this arrangement is to allow the pipes to drop down in the outwardly-inclined grooves R, formed in the upright part F' of frame F, into the position represented by pipe M, Figs. 1 and 3, thereby throwing the rod *d*, as it passes out of its guide-pipe, down onto its respective reel, where it is caught and held between the arms *f*, and carried around and wound upon the reel-arms as fast as delivered.

To facilitate the operation of quickly dropping the pipes, so that the rods passing through the same will be caught and wound upon the reels, as before explained, said pipes are provided near their outer ends with weights S S'.

Reel-arms *f* are curved at their upper ends, as represented at *g*, in the direction which the reels turn, for the purpose of insuring the holding of the end of the rod with greater certainty.

The operation of adjusting one of the guide-pipes for the reception of a wire rod to be coiled upon its reel may be briefly summed up thus: The attendant first arranges the guide-pipe of the reel upon which the rod is to be coiled upon a line with the groove through

which the rod is to pass by means of lever O, as before explained. He then takes hold of a cord or chain, T, attached to said pipe, and which passes through an opening, *h*, in frame F', and draws said pipe up, so that it will catch upon a projection, *k*, of a swinging latch or dog, U, pivoted at the point *m*, said latch or dog being kept in the proper position by means of a pin, *n*, so that the end of the pipe will strike upon the curved part *o* of the same and slide up over onto projection *k*, where it is held in such position by means of a flat spring, *p*, (secured at *q* to the top of frame F',) bearing upon the side of said latch or dog, as represented in Figs. 2, 3, and 5 of the drawings.

The reeling apparatus is now ready to receive the finished rod to be coiled, which, passing forward from between the last set, or finishing-rolls H H' of the rolling-mill, enters and passes through the adjustable swivel guide-pipe M or M', as the case may be, and, striking latch or dog U, forces it back, thereby allowing the pipe to drop, together with the finished rod *d*, into the position represented in Figs. 1 and 2, when the rod *d* is caught by the reel-arms and coiled thereon, as before explained.

It will be understood that plate N may have combined with it two or more guide-pipes for conducting the rod to two or more reels, in

which case the lateral motion of plate N would be increased proportionately and suitable devices employed for holding it in its adjusted position.

The reel-arms *f*, being inclined inward toward the center of the reel, permit the coiled rod to be lifted therefrom without inconvenience or difficulty.

Having described our improvements in rolling-mill reels for automatically coiling wire rods, what we claim therein as new and of our invention, and desire to secure by Letters Patent, is—

1. The combination, with the finishing-rolls of a rolling-mill and reels I I', of frame F, provided with curved slots or grooves R, and adjustable swivel guide-pipes M M', substantially as and for the purposes set forth.

2. The combination, with adjustable swivel guide-pipes M M', or either, of lifting, guiding, and holding devices T, F', U, *k*, and *p*, substantially as and for the purposes set forth.

3. The combination, with adjustable swivel guide-pipes M M' and adjustable plate N, of operating-lever O and holding-rod P, substantially as and for the purposes set forth.

CHAS. H. MORGAN.
FRED H. DANIELS.

Witnesses:

THOS. H. DODGE,
EDWIN E. MOORE.