(No Model.)

2 Sheets—Sheet 1.

M. SOLINGER.

MACHINE FOR CALENDERING PAPER.

No. 319,634. Patented June 9, 1885.

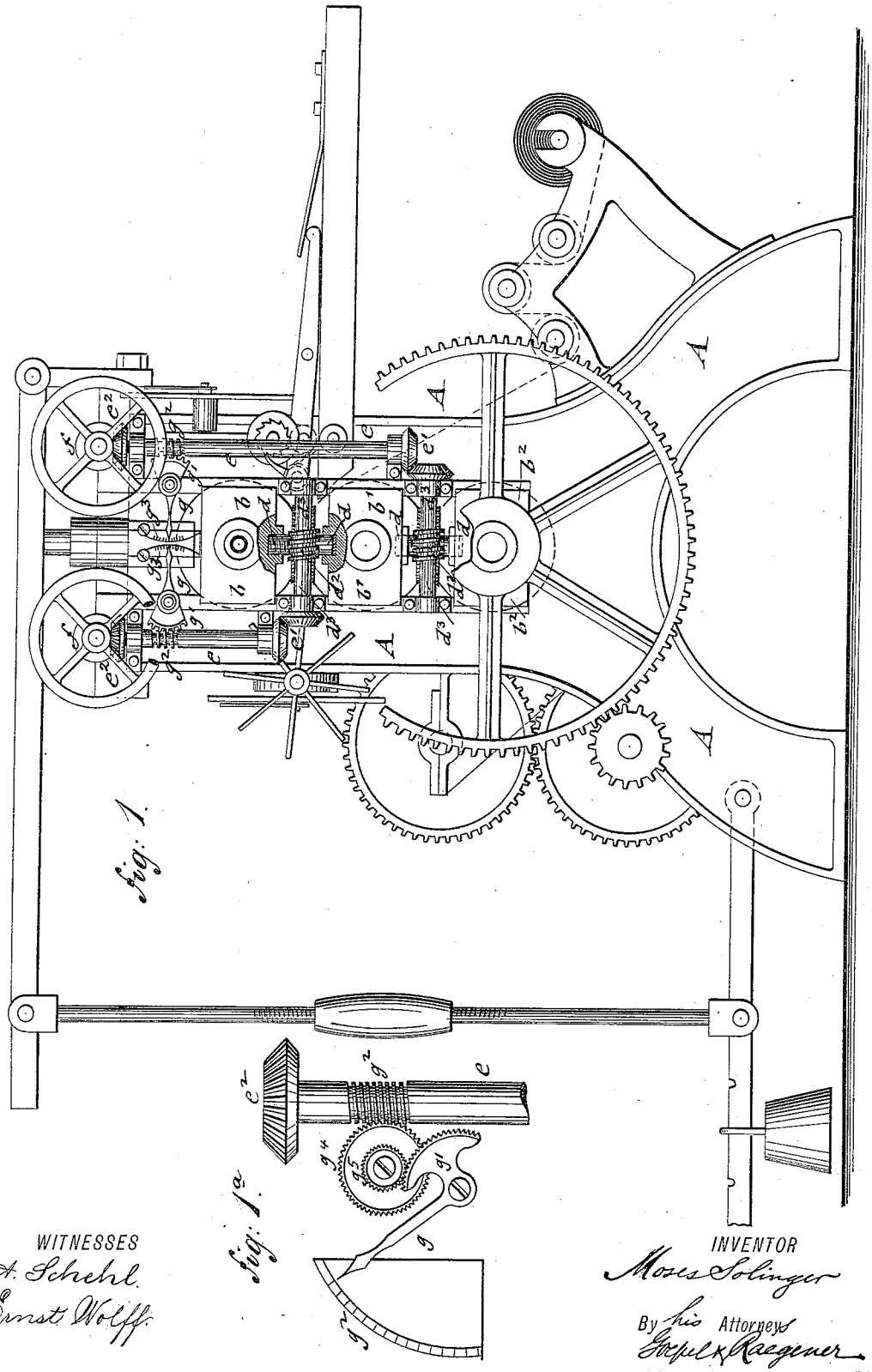


Fig. 1.

Fig. 1a.

WITNESSES

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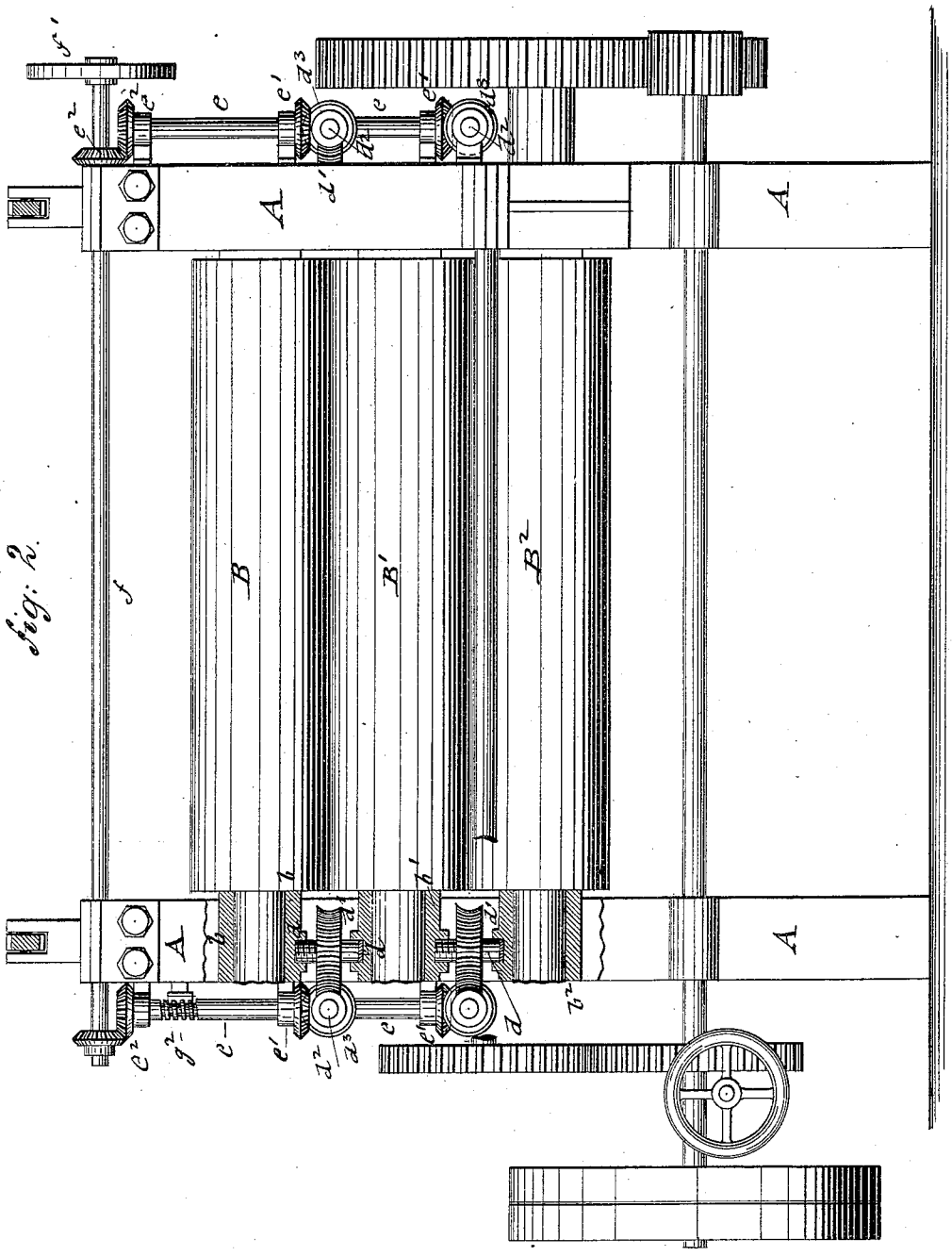


Fig. 2.

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UNITED STATES PATENT OFFICE.

MOSES SOLINGER, OF NEW YORK, N. Y.

MACHINE FOR CALENDERING PAPER.

SPECIFICATION forming part of Letters Patent No. 319,634, dated June 9, 1885.

Application filed March 27, 1885. (No model.)

To all whom it may concern:

Be it known that I, MOSES SOLINGER, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Calendering Paper, of which the following is a specification.

This invention has reference to certain improvements in machines for calendering paper by which the calendering-rolls can be adjusted in a very accurate manner to the exact thickness of the fabrics to be calendered; and the invention consists of a calendering-machine, the upper rolls of which are vertically adjustable by connecting their bearings, having plain and threaded sockets, with vertical shafts carrying worm-gears that are operated by transmitting-shafts and gearings operated by transverse top shafts of the supporting-frame. The degree of adjustment is indicated by means of pointers, which are actuated by an intermediate gearing and moved along arc-shaped graduations, as will more fully apper hereinafter.

In the accompanying drawings, Figure 1 represents a side elevation, partly in section, of my improved machine for calendering paper and other fabrics. Fig. 1^a is a detail side view of one of the indicating devices for registering the degree of adjustment of the rolls; and Fig. 2 is an end elevation, partly in section, of my improved calendering-machine.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the supporting-standards of my improved machine for calendering paper or other suitable fabrics, and B B′ B^2 the calendering-rolls, which are located vertically above each other. The bearings b^2 of the lower roll, B^2, are not made adjustable and supported at the lower parts of the vertical recesses of the standards A A. The bearings b' b of the rolls B′ B, however, are made adjustable in the recesses of the standards A A, and provided with threaded sockets at their lower parts, and the bearings b^2 b' with plain sockets, having washers at their upper parts. The sockets of the bearings b^2 b' and b' b are connected by short vertical shafts d d, that are threaded at their upper ends, so as to "take" into the screw-sockets at the lower ends of the bearings b' b. To the short vertical shafts are applied worm-wheels d', that mesh with worms d^2 of horizontal shafts d^3, which latter turn in bearings of the standards A A, as shown in Fig. 1. Vertical shafts e turning in bearings of the standards mesh by a bevel-gearing, e', at their lower ends, with the horizontal shafts d^3, and by a second bevel-gearing, e^2, at their upper ends, with transverse horizontal shafts f f, that are supported in bearings of the upper parts of the standards A, and provided with hand-wheels f' f' at both ends for being conveniently turned in either direction. The vertical shafts e e, horizontal shaft d^3, short connecting-shafts d d, and the transmitting gears e^2 e' d^2 d' are arranged at both ends of the rolls B′ B and standards A A, and operated simultaneously by the transverse top shafts, f f. By the motion-transmitting shafts and gearings the short vertical shafts d d are turned in one or the other direction, so as to raise or lower the bearings of the calendering-rolls B′ B and adjust them thereby to the required distance from each other, according to the thickness of the paper or other fabric to be calendered by the rolls.

To regulate the accurate adjustment of the calendering-rolls B′ B and B^2 B′ to the exact distance required, an indicating mechanism is arranged for each roll B′ and B, which consists of a fulcrumed pointer, g, having a toothed segment, g', which meshes with a worm, g^2, on the vertical shaft e, as shown in Fig. 1. The turning of the shaft e' moves the pointer g along a fixed arc-shaped graduation, g^3, and indicates thereon the nicest adjustment of the rolls.

In place of the simple mechanism shown in Fig. 1, intermediate gear-wheels, g^4 g^5, may be interposed between the worm g^2 and the segment g', as shown in Fig. 1^a. This mechanism is more sensitive than the former, owing to the intermediate gear-wheels, g^4 g^5, so that even the slightest adjustment of the rolls toward each other is indicated thereby.

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

1. The combination of supporting-standards, calendering-rolls having bearings guided in said standards, short vertical shafts engaging, respectively, plain and threaded sockets of said bearings, worm-gears on said vertical shafts, horizontal worm-shaft, vertical shafts, transverse top shafts, and bevel-gears between the vertical and worm shafts, so as to adjust

simultaneously the bearings at both ends of the calendering-rolls, substantially as set forth.

2. The combination, with calendering-rolls, bearings supporting said rolls, short vertical shafts engaging plain and threaded sockets of said bearings, intermediate transmitting mechanism, transverse top shafts, and an indicating mechanism for each roll, consisting of a fulcrumed pointer, a transmitting-gearing, and a fixed graduation, substantially as specified.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

MOSES SOLINGER.

Witnesses:
CARL KARP,
ERNST WOLFF.