

(No Model.)

2 Sheets—Sheet 1.

L. H. VAUGHAN & W. E. EVANS.
TYPE WRITING MACHINE.

No. 485,593.

Patented Nov. 1, 1892.

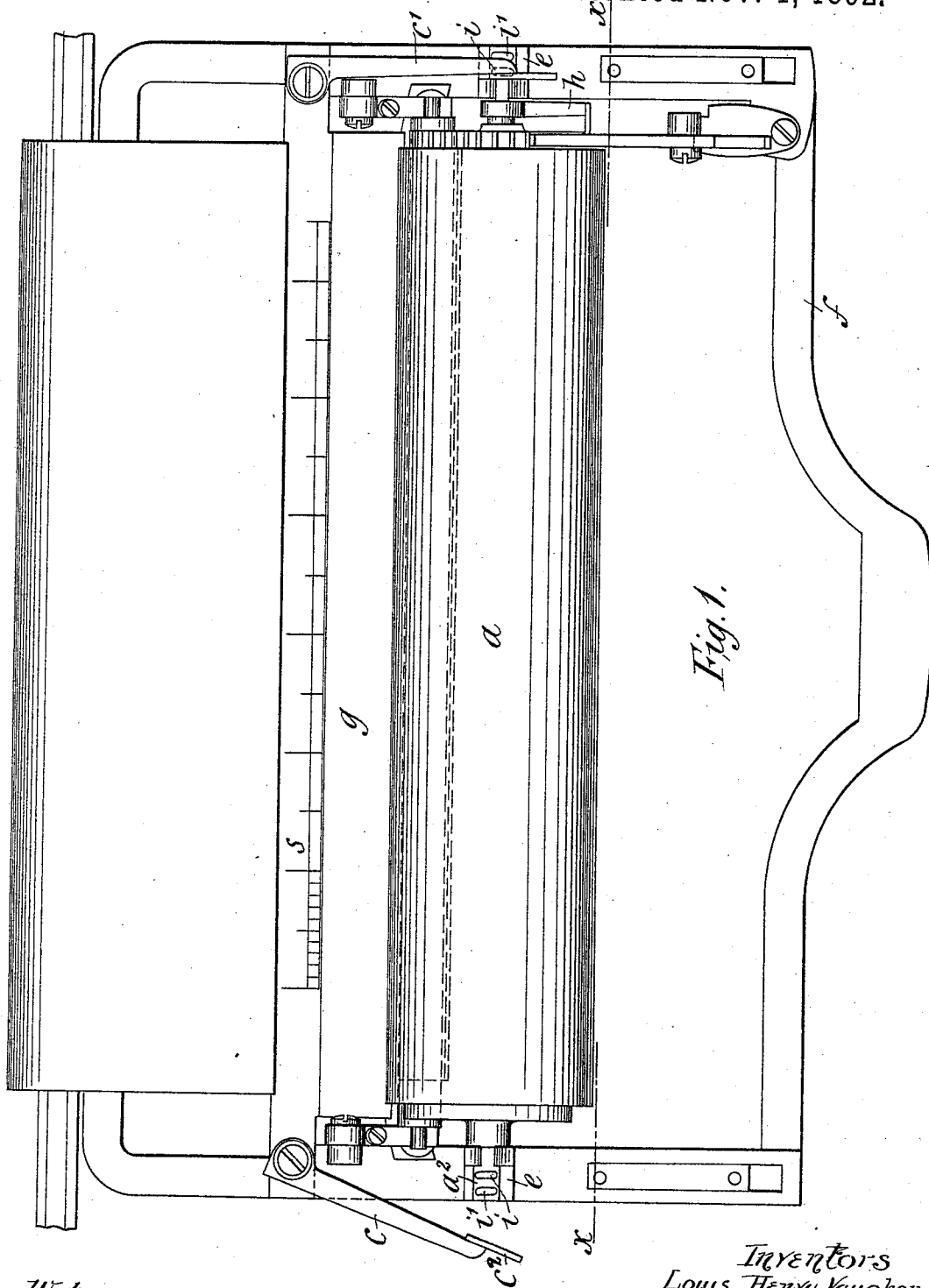


Fig. 1.

Witnesses
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Ernest William Brooke

Inventors
Louis Henry Vaughan
William Ernest Evans
per George Henry Payner
Attorney

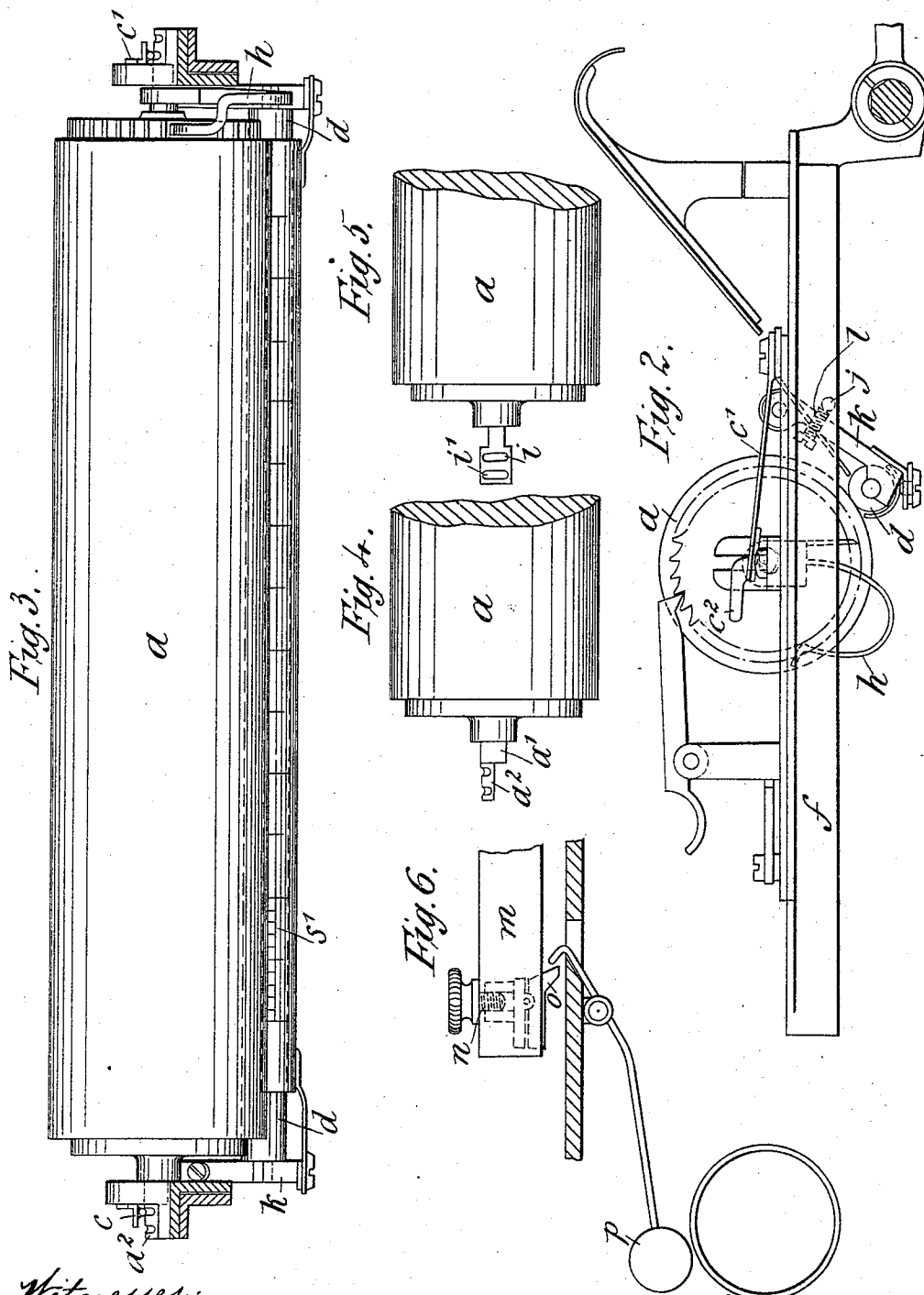
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2 Sheets—Sheet 2.

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Witnesses:-

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Inventors:-

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by Wm. G. Boulter. atty.

UNITED STATES PATENT OFFICE.

LOUIS HENRY VAUGHAN AND WILLIAM ERNEST EVANS, OF LONDON,
ENGLAND.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 485,593, dated November 1, 1892.

Application filed October 29, 1891. Serial No. 410,265. (No model.)

To all whom it may concern:

Be it known that we, LOUIS HENRY VAUGHAN, of 29 Campbell Road, Finsbury Park, and WILLIAM ERNEST EVANS, of 507 Caledonian Road, Upper Holloway, London, England, subjects of the Queen of Great Britain and Ireland, have invented Improvements in Type-Writing Machines, of which the following is a specification.

Our invention has for its object certain improvements whereby manifold type-writing may be carried out in a more uniform manner than heretofore, while preserving the correct alignment of types without causing any damage to the machine.

Heretofore when a number of paper sheets were inserted between the fixed cylinder and the movable feed-roll the latter had to recede to make way for these sheets, which increased the diameter of the lower half of the cylinder a quantity equal to the thickness of the paper inserted, thus lowering the printing-point and throwing the writing out of alignment. Moreover, it frequently occurred that the carriage-frame becoming deformed had to be restored to its proper shape by means of a wrench applied at one or both ends of the said frame, thus throwing the various parts thereof out of adjustment.

Now our invention has for its object to remedy these defects, its main features being to render the cylinder movable and the feed-roll rigid, thus reversing the above-named conditions. It is therefore the cylinder which yields now to the paper sheets inserted, the printing-point remaining in its normal position whatever may be the number of sheets used. In this arrangement the scale which was usually flat is curved around the feed-roll so as to cover the same and prevent its being soiled by the inking-ribbon. We arrange, moreover, a duplicate scale at the foot of the guide, over which the paper is passed between the cylinder and the feed-roll, whereby the paper may be forthwith placed in the position required without having to raise the carriage for the purpose of consulting the first-mentioned scale. We provide, furthermore, at each end of the cylinder a steel spring bearing upon the shaft of the cylinder,

so as to hold it down at each end upon its bearings, two indentations being formed at each extremity of such shaft, one of which is lower than the other. This arrangement has for its object to prevent an alteration in the true shape of the cylinder when narrow strips of paper are printed on one end only of the same, a weaker pressure being in such cases exerted on the end of the cylinder not covered with paper than on that upon which the paper strip is wound. These springs are pivoted at one end and can be moved aside, so that the cylinder may be readily removed whenever required and replaced by another, the ratchet-wheel spring being mounted for this purpose upon the shaft on the right-hand end of the cylinder. Such a removal could not take place in type-writers such as heretofore constructed without having to call in the aid of a skilled mechanic.

In order to accurately adjust the cylinder, we arrange under each feed-roll bearing a small block against which press two regulating-screws passing through these bearings.

In the accompanying drawings, Figure 1 is a plan of the carriage-frame, Fig. 2 being an end view thereof. Fig. 3 is a longitudinal section on line *xx* of Fig. 1, showing the cylinder in elevation. Figs. 4 and 5 are respectively a side view and a plan of one end of the cylinder. Fig. 6 is a detail.

The shaft *a'* of the cylinder *a* is terminated at each end by an extension *a*², the under side of which is flat, while its upper convex surface is furnished with two indentations *i* and *i'*, the former of which is higher than the latter, thus forming two steps. Each extension is inserted between the two arms of the bearings *e*. The springs *c c'*, which are furnished with a finger-piece *c*², are pivoted to the flat part of the paper-guide *g* at each end of the carriage, this flat part being provided with a duplicate scale *s*, enabling the paper sheet to be placed in position straightway without having to raise the carriage-frame in order to look at the other scale *s'*, which is curved, according to this invention, over the feed-roll *d*, for the purpose hereinbefore mentioned. These two springs *c c'* bear both upon the corresponding indentations or steps *i* or *i'*

when the paper sheet is placed centrally around the roller; but should a paper strip be wound upon the right-hand end of the cylinder, for instance, the pressure would be relieved on the left-hand end by shifting the spring *c* upon the outer indentation *i'*, the spring *c'* remaining upon the inner indentations *i*. The ratchet-spring *h* is mounted upon the right-hand end of the shaft *a'*, so that the cylinder can be entirely removed by merely pushing the spring *c c'* aside.

j are two small blocks arranged above each bearing *k* of the feed-roll, as shown in Fig. 2, against which bear the ends of the two screws *l*, passing through the said bearings. By turning these screws on or off, the cylinder can be accurately adjusted in position. Fig. 6 shows the manner in which the bell is struck according to our improvements. We arrange a screw *n*, passing through a slot formed in the end of the rack-bar *m* and fixed in a foot *o*, which trips the hooked end of the hammer *p* when the carriage has been moved far enough to the left-hand side. Our invention is applicable to that class of type-writers in which the type-bars are arranged in a circular row, such as the "Remington," the "Caligraph," and the like.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. In a type-writer, the combination of a cylinder *a*, shaft *a'*, having extensions *a²*, with bearings *e*, formed of two arms between which the extensions rest, and springs *c c'*, bearing on the extensions, substantially as described, and for the purposes specified.

2. In a type-writer, the combination of a cylinder *a* and shaft *a'* with extensions *a²*, having two notches *i i'* in each extension, one of which is deeper than the other, and springs *c c'*, bearing either in the notches *i* or *i'*, substantially as and for the purpose described.

3. In a type-writer, the combination of a cylinder supported in the manner above described with a feed-roll *d*, having pivoted bearings *k*, screws *l*, and blocks *j*, substantially as described, and for the purposes specified.

In witness whereof we have hereunto set our hands in presence of two witnesses.

LOUIS HENRY VAUGHAN.
WILLIAM ERNEST EVANS.

In presence of—

ALBERT EDWARD ELLEN,
ERNEST WILLIAM BROOKE,
Both of 37 Chancery Lane, London.