

R. H. GALLAHER.

Improvement in Type Wheels for Printing Telegraphs.

No. 116,175.

Patented June 20, 1871.

Fig. 2.

U
P
M
Q
S
B
D
T
R
N
W
R

Fig. 3.

2
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8
9
E

Fig. 1.

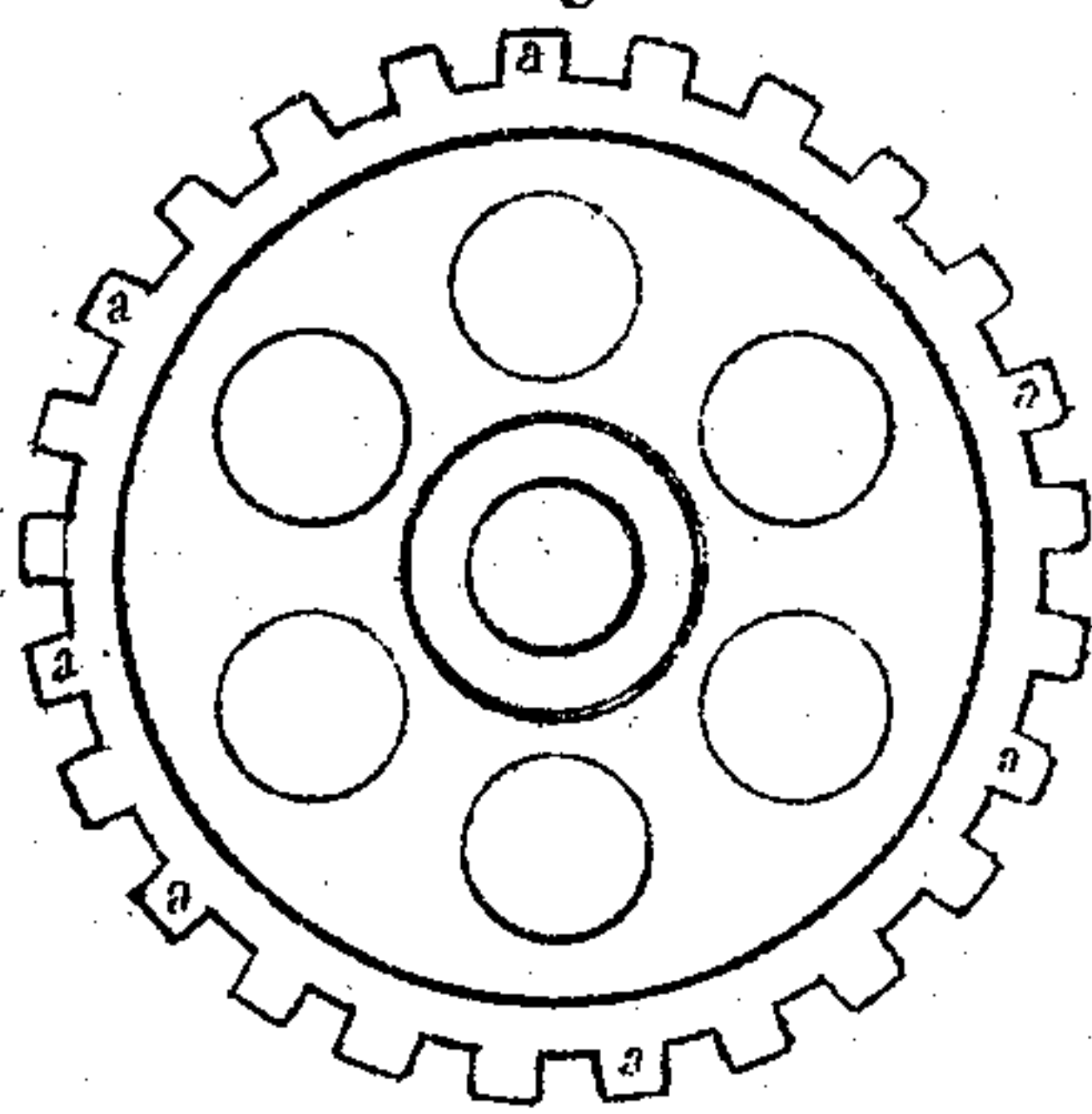
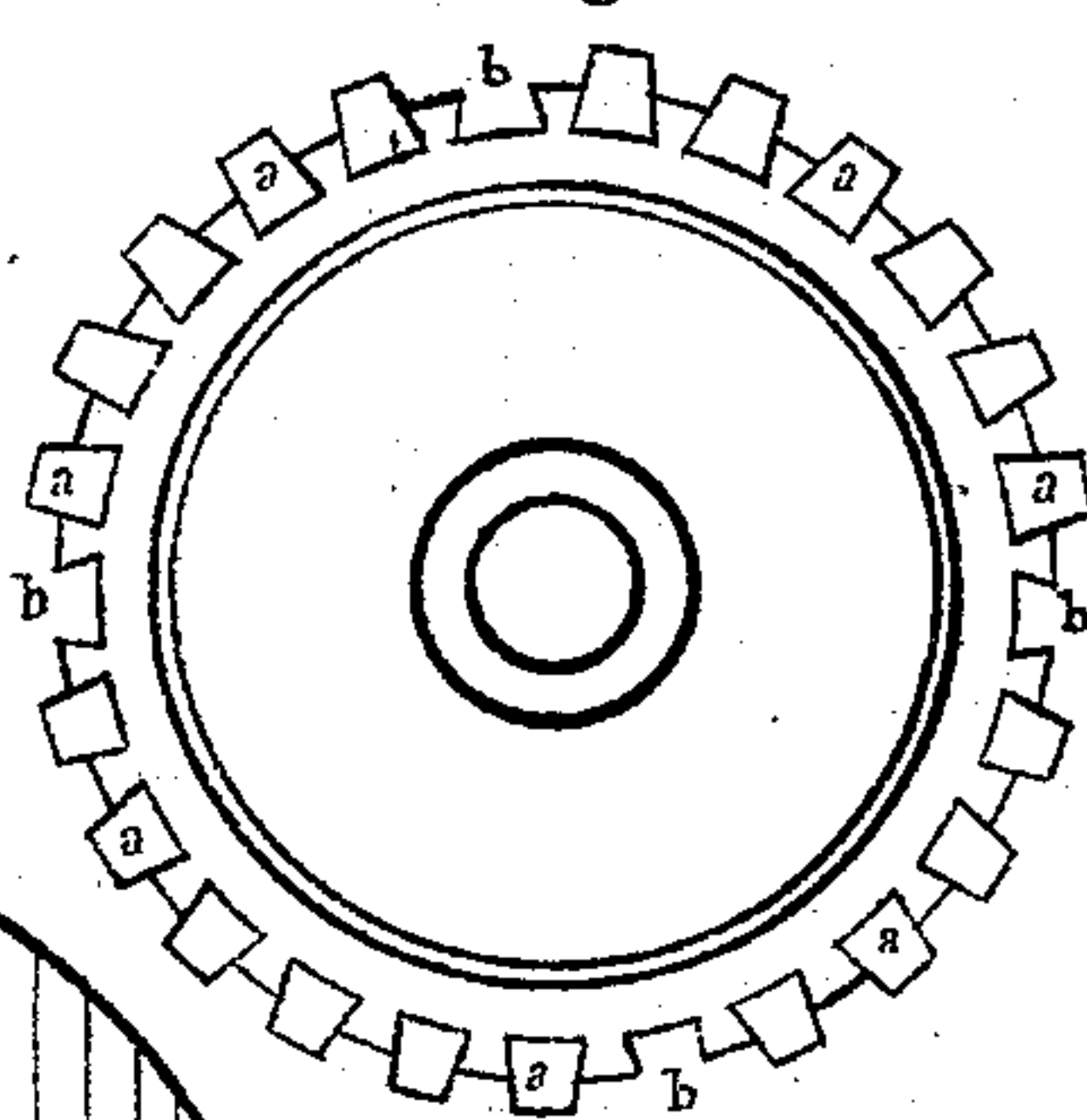


Fig. 5. Fig. 6.



Fig. 4.



THE KEY.

Western Union.
M. D.
Pacific Mail.
Central Hudson.
B. S.
Reading.
Lake Shore.
Pittsburgh.
North West.
Preferred.
Rock Island.
R. R.

Fig. 7.

1000, 10,000, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512, 1/1024, 1/2048, 1/4096, 1/8192, 1/16384, 1/32768, 1/65536, 1/131072, 1/262144, 1/524288, 1/1048576, 1/2097152, 1/4194304, 1/8388608, 1/16777216, 1/33554432, 1/67108864, 1/134217728, 1/268435456, 1/536870912, 1/1073741824, 1/2147483648, 1/4294967296, 1/8589934592, 1/17179869184, 1/34359738368, 1/68719476736, 1/137438953472, 1/274877906944, 1/549755813888, 1/1099511627776, 1/2199023255552, 1/4398046511104, 1/8796093022208, 1/17592186044416, 1/35184372088832, 1/70368744177664, 1/140737488355328, 1/281474976710656, 1/562949953421312, 1/1125899906842624, 1/2251799813685248, 1/4503599627370496, 1/9007199254740992, 1/18014398509481984, 1/36028797018963968, 1/72057594037927936, 1/144115188075855872, 1/288230376151711744, 1/576460752303423488, 1/1152921504606846976, 1/2305843009213693952, 1/4611686018427387904, 1/9223372036854775808, 1/18446744073709551616, 1/36893488147419103232, 1/73786976294838206464, 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UNITED STATES PATENT OFFICE.

ROBERT H. GALLAHER, OF NEW YORK, N. Y.

IMPROVEMENT IN TYPE-WHEELS FOR PRINTING-TELEGRAPHS.

Specification forming part of Letters Patent No. 116,175, dated June 20, 1871.

To all whom it may concern:

Be it known that I, ROBERT H. GALLAHER, of the city, county, and State of New York, have invented certain new and useful Improvements in Rotating Printing-Wheels or Attachments to Telegraphic or other Printing-Machines or instruments for making impressions, which I term the "Monogrammic Printing-Wheel," of which the following is a specification:

The nature of my improvements does not refer to printing-telegraphic instruments or other printing-machines or devices proper, but relates more especially to an attachment or appliance thereto; and consists of one or more rotary wheels, drums, cylinders, rollers, disks, or planes, provided with or having formed on the circumference or periphery thereof monogrammic initials or other compound or combined letters, signs, symbols, emblems, figures, or numbers, the object of which arrangement and combination is to greatly facilitate and expedite, as well as to diminish, labor and expense and the wear and tear of instruments employed in telegraphic communications, more especially in connection with varied commercial operations or business pursuits, and the transactions connected with the quotations of purchases and sales of stocks, bonds, and other securities. My improvements can also be adapted to marine and submerged telegraphs, and will be found valuable in connection with the signal-service reports, where telegraphic-printing machines may be used to convey condensed yet comprehensive reports by representing on the printing-wheel such signs as may be adopted to designate the different conditions of the weather at various points.

Deeming it unnecessary herein to describe the mechanical operation or the mechanism of telegraphic machines or instruments, I confine my specification to what I claim as new and improved devices, appliances, or attachments which are readily susceptible of being connected to and used with any printing-telegraphic machine or instrument. It is contemplated, furthermore, to use these devices or appliances in a variety of ways for various purposes, not essential here to be specified.

In the several modes now employed to communicate the state or condition of the stock market by telegraphic medium or transmission,

various devices are used in the form of one or more rotating wheels or drums, actuated by the electric current, said devices being provided with the ordinary individual or separate alphabetic and numeral figures or characters, distributed or arranged in order and relative positions, one to the other, at proper intervals, around the periphery or circumference of said wheels or drums, and made a fixture or permanent part thereof, an impression of which is represented in Fig. 9. In the form of devices now used in communicating the state or condition of the stock market the telegraphic operator sets in motion the mechanical devices, causing the wheel or wheels to rotate over a fillet or ribbon-like strip of paper, and for each and every letter or figure or fraction required to be denoted a separate and distinct manipulation is made therefor by the operator at different intervals of time, thus expressing or denoting by several separate letters or figures the name of the kind of stocks, bonds, or securities, and the quantity as well as prices thereof. (See Fig. 9.) In such case the initial letters are separate, whereas in my method the letters are combined or monogrammic. (See Fig. 10.)

In the application and use of my monogrammic devices but one distinct or single manipulation is sufficient to denote or imprint two, three, or more characters at one and the same time, denoting a multitude of letters or figures, as shown in Figs. 2 and 3 and Figs. 7 and 8, and within a condensed space, so that it is evident my improvements have greater advantages than any other printing-telegraphic machine in use, (see Fig. 10, at *a c d*;) for if, by my devices, one single pulsation of the electric current is made to express or denote two or more characters or signs at one and the same time, (see *a c d*, Fig. 10,) instead of requiring a separate manipulation and pulsation for each and every distinct letter, figure, or communication, great economy of labor and space is attained, a much greater facility of dispatch is produced, and the wear and tear of the instrument avoided, together with a very great saving of materials used in connection therewith, a reduction of space, and a less amount of fillet being required. (See Fig. 10.) Consequently it is claimed that, for all business purposes, by the use of my monogrammic de-

vices and arrangement there is a very great saving of time in communicating quotations of prices from the stock exchange to the offices of bankers and brokers. At least two or three hundred per cent. more quotations can be sent by use of my wheels than by the wheels now in use in the same space of time. Moreover, in the use of the devices now employed great confusion of letters and figures is often produced on the fillet of paper because of the numerous manipulations of the machine necessary to produce the separate and distinct letters and figures representing the names, quantities, and prices of stocks or other securities, as they have to be reported when the various fluctuations and transactions occur at the stock exchange. Said rapid and repeated manipulations of the transmitting instrument cause the type-wheels of the printing-machine to be thrown out of gear, and, consequently, produces a confused and unintelligible report.

Another peculiar feature of my improvements is that one or more or all of the monogrammic emblems may be made attachable and detachable, if desired, by being dovetailed or inserted in any suitable manner into the periphery of the wheel, the object of which is to meet the requirements by substituting one monogram for another in the event of any special change of name in the stocks or other securities called at the stock exchange, from which quotations are sent. This substitution renders it unnecessary to make an entire new type-wheel. (See letters *b b b c d*, Figs. 4, 5, and 6.)

Another feature of my improvements consists of the construction of monogrammic type formed of initial or other letters or figures, so combined or condensed as to express, denote, or designate fractional parts of any amount of value or quantity or commodity, the said combination or condensed monogrammic type, sign, or emblem representation thereof being delineated in the key at Figs. 2, 3, 7, and 8, and in Fig. 10.

My improvements are also susceptible of being used on the same wheel, or on two, three, or more separate and independent wheels, upon which the ordinary alphabetic letters, and numerals, and fractional figures or symbols are now used, and similar to what is delineated by Fig. 9, showing a fillet of paper with a communication thereon. The wheels may also be arranged in groups or pairs, either laterally, or in advance of one another, or in any suitable manner so as to produce the desired results of communication. I also contemplate, in connection with (or independent of) said monogrammic wheels, the employment of abbreviated combinations of condensed letters, symbols, figures, or numerals, instead of full words or names, so as to express amount of value and quantity of commodity, these combinations to be on one type and printed at one manipulation, or separate letters condensed so close together as to be able to use but one manipulation and one contract of fillet and wheel to print the said combination. In

connection with my improvements a key to the signs or symbols is used, which may be readily understood by any one interested in the stock market. (See Figs. 7 and 8.)

Having set forth the nature and object of my improvements, the accompanying diagrams, with letters of reference thereon marked, will more fully show the devices or monogrammic wheels detached from the telegraphic instruments.

Figure 1 represents an end view of a monogrammic wheel with symbols or type *a a a a* arranged at proper intervals around the periphery thereof, the faces of the type not being shown. Figs. 2 and 3 represent views of the periphery or rim of the wheels, showing the faces of the monogrammic characters. Figs. 5 and 6 show faces of the type *c d* and represent the dovetail monogrammic type detached. Figs. 7 and 8 represent the key to the meaning of the monogrammic signs or symbols. Fig. 9 represents a fillet-roll of paper, such as is used in furnishing dispatches, the letters and figures shown being such as are now used in the stock-printing telegraphic operations, said letters and figures being separate and apart. Fig. 10 represents a fragment or part of a fillet of paper, showing the impression of my monogrammic letters and symbols in contrast with the single alphabetic signs and the ordinary well-known numerals and their fractions, the same being represented in Fig. 9.

I do not claim the invention of monogrammic initial type, dies, nor engraved plates, such having been used in various ways in letter-press printing or embossing; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. A monogrammic wheel, drum, cylinder, roller, disk, or plane, provided with or having formed and arranged on or around the periphery, rim, or circumference, or face thereof, in any suitable manner, abbreviated and condensed combinations of letters, emblems, signs, symbols, characters, figures, or numerals to represent names, show quantity, denote kind and express rate of value of any railroad stock, bonds, or other securities or commodity of commerce, the said devices combined in operation and used in connection with any kind or system of electro-magnetic or telegraphic or other printing machinery for the purpose of communications, substantially as set forth and represented in the accompanying diagrams.

2. The combination of my monogrammic wheels, provided with their several peculiar signs and symbols, with a system of single or double arrangement of wheels, drums, rollers, or cylinders having plain separate alphabetic letters, numerals, figures, or fractions, and producing similar impressions and communications to what are shown on the fillet representation in Fig. 9.

ROBERT H. GALLAHER.

Witnesses:

JOHN H. MATTINGLY,
H. POLKINHORN.