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Patents progress: the Adjustable Stencil

Among the many stencil-related patents granted by the United States Patent Office (USPO) in the nineteenth century are those classified as 'settable units'. Patents of this kind are based on the variable assembly of individual stencils each carrying a letter, numeral or some other character. The stencils are joined together to form words, numbers, acronyms and so on.¹ While many of the settableunit patents specify inventions that were in all likelihood unsuitable for economical manufacture, it is possible to follow a sequence of patents, granted in the several decades after 1840, that led to one device of exceptional utility: the Adjustable Stencil. So simply and efficiently did the Adjustable Stencil solve the conceptual and manufacturing demands of a settable-units stencil, and so easy was it to use, that today, more than 130 years after it first entered production, it is still made and sold in the same form. The account that follows traces the emergence of the Adjustable Stencil from out of the patent record and into the commercial sphere where it soon established itself as a handy and versatile device, but one whose ownership, as valuable intellectual property, was also forcefully contested. This narrative is prefaced by a short discussion that identifies 'settability' as integral to a longer history of stencilling, to an extent that justifies recounting in some detail the idea's near-perfect realisation as the Adjustable Stencil.

EARLY PRACTICES

Settability is implicit in stencilling practices employed well before the introduction of the Adjustable Stencil. Its basis is found in stencilling where individual characters are marked out or composed sequentially to form words and texts. Such 'composition' stencilling was done with sets of single-character stencils (Fig. 1a, overleaf) from at least the mid-seventeenth century, and possibly with characters grouped onto one or several plates, examples of which date to the first half of the nineteenth century onwards (Fig. 2).

Nearly all early composition stencilling occurs in large liturgical books made in Catholic western Europe from the mid-seventeenth century until well into the nineteenth century (Fig. 1b). Stencils were used for marking out texts, initials and headings as well as chant

1. Class 101 (Printing)/Subclass 128 (Settable units: 'subject matter, including a plurality of stencils which can be assembled in a desired order and adjuncts thereto'). All US patents discussed in this article are viewable online at www.uspto.gov, searching either by class/subclass or by patent number. The USPO is now referred to as the United States Patent & Trademark Office (USPTO). Please note that in patent specification drawings that follow, reference letters and numerals that coordinate the drawing with its specification text have been removed, as in many instances these impair the readibility of the drawing at the scale of reproduction required here. Readers are encouraged to view complete specification drawings, together with their associated texts, at the website above.



1a. Stencil, single-character, made by Gabriel Bery, Paris, 1781, etched brass. Reduced to 80 per cent linear. American Philosophical Society, Philadelphia.

1b. Composition stencilling, folio from unidentified Graduale, parchment, probably France, 2nd half 18th century. 565 × 395 mm. All elements stencilled except staves and measures (ink ruled), margins, baseline guides and other delineations (lead ruled), key signature (handwritten); text probably composed with stencils by Bery. Collection of Claude-Laurent François, Besançon.



notation and, later, decorative matter. When words and texts were thus composed, two features of their spatial arrangement required the stenciller's particular attention: the distance between characters and the alignment of baselines. Based on written descriptions and surviving artefacts, it is clear that these features were controlled in several ways (here only single-character stencils will be considered). To establish inter-character spacing, a small dot was sometimes cut from the plate to the right of a character (Fig. 1a); when the dot was stencilled along with the character it accompanied, it indicated the position of the next character to be stencilled. There is also written evidence (not reliably demonstrated by artefacts) that a window, or *lumière* was sometimes cut from the stencil plate to the left of a

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character as an aid to gauging its distance from a previously stencilled one. But it is also probable that some stencilling was done without such means and instead inter-character spacing was simply estimated by eye. With practice, this might be done with an acceptable degree of competence. A frequently used method for aligning character baselines was to rule in (with a lead point, or occasionally by scoring) a baseline guide along which stencils were positioned; the alignment of the stencil was aided by small triangles cut at the baseline on each side of the plate. Possibly of similar frequency (if only indirectly confirmed by artefacts) was the use of a straight-edge or some similar implement placed across a page and against which stencils were set. It made ruled baseline guides unnecessary.²

Common to nearly all these procedures was the tendency to make the irregular dimensions of composition stencilling more measured and consistent. In several respects, this tendency is intrinsic to stencilling if, to begin with, the stencils are regarded as templates for generating fixed forms repeatedly, and if, as is usual, each character is placed in the same vertical position on its plate. These features allow a degree of regularity to be brought to the composition of words and texts, if in practice (and as found in stencilled artefacts) this varied considerably, based on the relative sophistication of the stencilling equipment and methods of composition employed, as described above. It may in any case be productive to draw an analogy between single-character stencils and moveable types, both in their fixed forms and consistent internal dimensions, and in the ability to compose and recompose each freely. Pursuing the analogy, a greater degree of regularity in composition stencilling might, as in printing, result from holding, clamping or even joining individual characters together in some way, thereby governing distances between them more accurately and aligning their baselines by default. In the sphere of stencilling, this describes a settable-units device.

But if a moveable types paradigm was available to early stencillers or stencil makers, proposals for settable-unit stencils apparently do 2. Stencil, single-plate character set, probably France, etched brass, 1st half 19th century. Reduced to 80 per cent linear.

2. Apart from Fig. 1, I have omitted specific historical evidence from this paragraph, not wishing to deflect the narrative from the settable-units theme. Additional illustrations and discussion of single-character stencils, and some of the features and procedures described here can be found in E. Kindel, 'Recollecting stencil letters', *Typography Papers* 5 (Reading, 2003). not arise until the mid-nineteenth century, that is to say, nearly two centuries after the earliest instances of composition stencilling are found, and at a time when the practice of stencilling liturgical books was in decline, if not largely defunct. Yet contrary to their apparent advantages in this latter context, settable-units stencils would not necessarily be helpful: surviving stencilled books indicate that stencillers often (though not always) required flexible inter-character spacing in order to coordinate a text with its corresponding chant notation set out on the stave above. Moreover, if stencilled books are considered in the larger context of religious institutions (and monastic foundations specifically) where they were commonly made, then it may be asserted that exemplars and the inertia of established practices and already available (single-character) stencils would probably discourage the reconfiguration of tools and methods of work. It is also the case that making books with stencils apparently emerged from practices more closely associated with manuscript production than with printing and type composition while, broadly speaking, knowledge and habits of the former would be likelier in religious institutions than the latter. These factors, in combination, make the influence of print-related practices on ecclesiastical stencilling - in the form of settable units - seem relatively unlikely.

Outside the context of book stencilling, explanations for the apparent absence of settable-unit stencils before the mid-nineteenth century may also derive largely from contexts of use. For much surviving eighteenth- and early nineteenth-century stencilled ephemera (mostly French or British in origin) such as broadsheet accounting ledgers, pharmaceutical and dry goods labels, billheads and receipts, trade cards and so on, settable units appear unworkable because the scale of the work was too small, the configuration of the graphic matter too elaborate, or stencils with fixed matter were clearly sufficient without any functional elaboration. For whatever reason, these artefacts show no evidence (mechanically regular inter-character spacing, consistently upright characters, precisely aligned baselines) of settable-unit stencils in use. At a larger scale, however, in rougher circumstances or on irregular surfaces, and in situations where variable matter was required on boxes, crates or bales from farms, factories, arsenals, textile mills and elsewhere, a settable-units stencil would be appropriate; true, too, of other applications including temporary signs and notices for business or trade, or street names and numbers. Here one might expect to find settable-unit stencils, though in such circumstances the stencilled trace would in fact be unlikely to survive for long. But evidence of a need for settable-units for marking during this period does occur in published accounts associated with,

for example, later eighteenth-century calico printing where variable information (date and time of production, batch) was marked on to goods (Fig. 3).³ The settable units in question were probably Moore's 'Marking Types' patented in 1771 by the typefounder Isaac Moore and the printer William Pine.⁴ Late eighteenthcentury advertisements state that the types were available in sizes up to one inch and were particularly handy for marking linen and books,⁵ uses to which stencils were also put. Associations of this kind indicate that stencils and devices like Moore's Marking Types were used in similar circumstances, even if there is no evidence that the latter's settable-units basis was adopted for stencils at this time.

SETTABLE-UNIT STENCILS: FIRST PATENTS

Thus despite the availability of a suitable paradigm and circumstances of use that might have led to a settable-units stencil at an earlier date, the first example so far discovered does not occur until well into the nineteenth century, and then not in Europe. But when it does occur, in 1840 in the US patent record,⁶ the uses envisioned for it are much as expected. Edwin Allen's 'Stencil-plate' of that year⁷ (Fig. 4, overleaf), which initiates the sequence of settable-unit patents leading to the Adjustable Stencil, was announced as 'a new and useful apparatus for facilitating the painting of signs, marking boxes, bales, goods, &c.'. The device incorporated interchangeable, singlecharacter stencils whose spacing and baseline alignments were predefined by the configuration of the plates and made good when they were assembled and held together in an enclosing frame. The frame was a simple, even obvious solution and echoes the printers' chase in which type materials are locked-up after composition. These several features of Allen's design are those that many patentees would adopt subsequently. The only feature conspicuously absent in light of later patents was the treatment of the left and right edges of the stencil plates that would at once secure their lateral connection and ink-proof their joins.

3. Instructions for officers who survey printers of callicoe, &c. (London, 1777).

4. 'A.D. 1771, November 6, no. 999, specification of Isaac Moore and Willliam Pine. Casting metal cases to hold types for printing on silk, &c., also raised letters, printing presses, &c.' (London, Great Seal Patent Office [1856]). The Moore and Pine patent specifies four separate inventions; that which became Moore's Marking Types was essentially a hand stamp composed of moveable, short type clamped into a case with a screw; the case could be cast in widths from one-half to seven inches or more, and was designed to hold from one to nine or more lines of type.

5. e.g. circular of Lewis Hendrie, perfumer and wholesaler, Shug Lane, London, after 1771: 'By His Majesty's patent, Moore and Co.'s new-invented letters for marking on linen, books, &c. the impression of which, when dry, is as durable as the materials wherein it is affixed – a one inch sett, with all the aparatus, for two shillings'. (spelling original)

6. While the evidence compiled for the present essay supports this statement of date and priority, it must remain provi-



3. Sample table of date, time and batch information (left) and marking frame configuration, from Instructions for officers who survey printers of callicoe, &c. 'XIV. You must keep the frame, figures and letters for marking goods so clean, as that all impressions made therewith may be fair and lasting. The figures may be kept at the printers; but the frame must be in your own possession, it being to be carried about with you constantly on duty, as well as the letters, which are to be screwed (one at a time) into the frame, and to be changed at the discretion of your surveyor; an index or register of the disposition of them being to be kept in the beginning of the chargebook...'.

sional. Settable-unit patents are not found in Britain until 1864 (no. 1364, J[oseph] Sykes; see note 10 below for the equivalent US patent); Canadian, French and German patent records have been reviewed, but not exhaustively.

7. Edwin Allen (of Windham, Connecticut), 'Stencil-plate or apparatus for marking boxes, &c.', US Letters Patent no. 1,767, dated 4 September 1840. Note that up to 1873, US patents only carry the date of issue ('dated'); thereafter, two dates are included: the date of issue and the (earlier) date of submission ('filed').



4. (top). Specification drawings from Edwin Allen, 'Stencil-plate or apparatus for marking boxes, &c.', US Letters Patent no. 1,767, dated 4 September 1840.

5. Specification drawings from J. C. Bigelow, 'Changeable stencil', US Letters Patent no. 25,481, dated 20 September 1859.

8. J. C. Bigelow (of Brighton, Massachusetts), 'Changeable stencil', US Letters Patent no. 25,481, dated 20 September 1859.

9. The implied connection to the Civil War is intentional as this conflict may be a source of, or at least the impetus for advances in stencil-related devices though the indications are only indirect at present. There is no doubt that stencils were used during the war. Evidence comes first from personalised stencil name-plates carried by soldiers of the lower ranks and by officers, mostly in the US (i.e. 'Union') Army of the northern states. The stencil usually included a soldier's name, company and regiment. Articles of clothing and equipment were marked with it, and so it is probable that these marks (or the stencil itself) helped in the identification of casualties. Elsewhere, larger stencils were used to mark other items of equipment (packs, for example) or munitions including crates of muskets, balls and powder. It is in this latter context of munitions manufacture and supply that the need

The patent that followed Allen's was J. C. Bigelow's of 1859⁸ (Fig. 5). Significantly, he described his invention as an 'improved changeable extension-stencil', thereby indicating the feature – extensibility – he thought most important. Laterally, this was made possible by the absence of vertical frame members at either end of the assembled line of characters. The lack of vertical members also allowed for vertical extensibility into stacked lines of characters, something Allen before him and others who would follow were mostly unable to provide for. Bigelow was aware of Allen's 1840 patent and specifically distinguished his own invention from his predecessor's on its lack of a fully surrounding frame. Of significance too, though Bigelow makes no reference to it, was the design of the right and left edges of individual stencil plates that apparently sealed their joins.

Between 1840 and the start of the American Civil War (1861), the only settable-unit patents were those of Allen and Bigelow. By contrast, ten were filed between 1863 and 1872, a period that spans the latter part of the Civil War (ended 1865) and the years of economic instability that followed.⁹ They are mostly variations on Allen's

for identifying freight content, quantity, batch number, origination, destination and/ or date might have been most flexibly served by a settable-units device. But information stencilled on to a surviving crate from the Union arsenal at Watervliet, New York (it runs [in capitals]: '1000. ball / cartridges / musket cal. 69 / spheroid / Watervliet / arsenal / Feb. 1862') suggests this was done by selecting and arranging single stencils each carrying a word cut out with stencil punches, as spacing and alignments are more erratic than would be expected from a settable-units device (it is, however, possible that the numbers were marked out from settable units; cf. Fig. 6 and note 11 below). Elsewhere, text specifications for settable-unit stencil patents of the 1860s do not indicate any direct military connection or inspiration (cf. note 17). Incidentally, a number of ex-soldiers established stencil and stamp businesses in the years following the Civil War, including two of this essay's principal figures.



6a. Specification drawings from Samuel C. Sumner, 'Improvement in stencil-plates', US Letters Patent no. 37,648, dated 10 February 1863.

6b. (below). Number/date stencil, United States, *c*. 2nd half 19th century, brass (number strips), copper (plate), wood (handle). 192 mm (width of plate).

7. (left). Specification drawings from John C. Nye, 'Stencil-plate', US Letters Patent no. 41,856, dated 8 March 1864.

patent incorporating single-character plates that are held, clamped or slid on to a frame, with flanges of some description at the top and bottom of each plate to secure them.¹⁰ A number are noteworthy as alternative or evidently improved solutions. Sumner's of 1863¹¹ (Fig. 6a) proposed stencil plates threaded vertically into a larger base plate. Its principal drawbacks were its lateral limits and the fact that every stencil plate needed the same width dimension regardless of the character it carried. It is unclear if this device was ever manufactured, but an example very like it does survive (Fig. 6b). The 1864 patent of John C. Nye¹² (Fig. 7) is also of interest as it is the first to explicitly propose flanges for the right edges of each stencil plate that would at once overlap and force down the neighbouring plate onto the surface to be stencilled and so 'obviate the possibility of any interstices between the plates through which the ink might work and blot the surface or article to be marked.' This feature was adopted by a number of patentees immediately after Nye.

But of the patents filed during these ten years, it is really two that propel the settable-unit series forward. The first is that of brothers

10. e.g. Joseph Sykes (of Muscatine, Iowa), 'Stencil-plate', US Letters Patent no. 43,237, dated 21 June 1864; John Wentz (of Shelby, Ohio), 'Stencil-plate', US Letters Patent no. 52,234, dated 23 January 1866; William Potter (of Buffalo, New York), 'Improvement in stencil-plates', US Letters Patent no. 77,759, dated 12 May 1868; John F. W. Dorman (of Baltimore, Maryland), 'Improvement in stencil-plates', US Letters Patent no. 129,271, dated 16 July 1872. Dorman was a veteran of the Union Army and later a prominent stencil and (rubber) stamp maker in Baltimore. 11. Samuel C. Sumner (of Boston, Massachusetts), 'Improvement in stencil-plates', US Letters Patent no. 37,648, dated 10 February 1863. This patent bears a close resemblance to James M. Merritt (of Buffalo, New York), 'Stencil numbering apparatus', US Letters Patent no. 56,674, dated 24 July 1866; and James J. De Berry (of Brooklyn, New York), 'Improvement in changeable stencil-plates', US Letters Patent no. 80,711, dated 4 August 1868.

12. John C. Nye (of Cincinnati, Ohio), 'Stencil-plate', US Letters Patent no. 41,856, dated 8 March 1864.





8. Specification drawings from J. L. & H. L. Tarbox, 'Improvement in stencil-plates', US Letters Patent no. 87,727, dated 9 March 1869.



Jerome and Henry Tarbox¹³ (Fig. 8). It proposed the lateral connection of consecutive plates by means of a relatively complicated clip-joint attached to the stencil plate. While the precise configuration and working of the clip is somewhat unclear, the clip-joint itself is significant as an alternative to the encumbering and restrictive frame of previous patents. It was given as one of the patent's principal claims¹⁴ and resulted in a device that functioned 'without the employment of frames for holding them [the stencils] when set up, as is now commonly practised'. Loops on the top and base of each stencil were also specified that enabled rows of assembled stencils to be joined vertically with wires. The second patent of particular note is Lester Robinson's of 1872¹⁵ (Fig. 9). It is, at first sight, a return to the stencil-frame combination. But closer inspection reveals its significant feature: raised perforations created by a simple deformation of the plate itself. Although the individual plates were to be assembled by sliding a frame laterally through the perforations, the specification drawing in effect *suggests* a connection of vertical edges made possible by each plate's asymmetric configuration.

When reviewing the patents just described, there is a sense that after Allen's of 1840, many (though clearly not all) that followed claimed 'improvements' of little significance. While some patentees appear diverted by mere mechanical ingenuity without giving due attention to the necessities of efficient and cost-effective manufacture, the amendments of others may have reflected a hope that a profitable settable-units stencil would hinge on their particular, if minor, improvement. It may also be the case that patents were filed by practising stencil-makers who already made the specified device in small numbers to order. Obtaining a patent was merely prudent,

14. The claims listed in US Letters Patent are those features asserted and granted as original, and form the basis on which a patentee defends a patent from interference (i.e. infringement).

^{13.} J[erome] L. & H[enry] L. Tarbox (of New York City), 'Improvement in stencilplates', US Letters Patent no. 87,727, dated 9 March 1869. The Tarbox brothers were in fact three: the third, Eugene, is known by his stencil disk patent of 1868 (see note 26).

^{15.} Lester Robinson (of New Haven, Connecticut), 'Improvement in stencilplates', US Letters Patent no. 132,691, dated 29 October 1872.



offering a measure of security should the device prove of wider commercial value. Such a scenario is at least suggested by (Fig. 6b) in its nearness to Sumner's patent (Fig. 6a), and by 'The Old Reliable' copper clamp alphabet offered by S. H. Quint & Sons (Fig. 10), though there is no evidence that it was ever patented.¹⁶

REESE'S PATENT ADJUSTABLE STENCIL PLATES

If many of the devices found in the settable-units series up to this point were variously too complicated, restrictive or otherwise unlikely, then the patent filed in June 1873 by Samuel W. Reese, a stencil cutter in booming postbellum Chicago, specified a device that was by contrast startlingly straightforward and plainly practicable¹⁷ (Fig. 11, overleaf). As the Tarbox brothers had in 1869, Reese made the stencil-holding frame redundant by integrating the connection between plates into the plates themselves. But unlike the Tarbox's elaborate clip-joint, Reese just devised two simple folds: one on the left edge that went under the plate, and a second on the right edge that went over it. Their asymmetry allowed consecutive plates to be slid together (and so suggest some association with Robinson's patent of the previous year). Reese called the pair of linking folds a 'lock-groove', and its efficiency in both conceptual and manufacturing terms is very satisfying; it is indeed the patent's 'eureka!' feature. Reese refined it by slightly raising the fold beneath the plate such that multiple plates, when joined, would lie flat.

16. Fig. 10 from *Quint's stencil, stamp, and letter works* (Philadelphia, c. 1887–1895). It has not been determined exactly when the Quint company began making this device; the company itself was established by Silas H. Quint in 1849.

17. Samuel W. Reese (of Chicago, Illinois), 'Improvement in stencil-plates', US Letters Patent no. 148,087, dated 3 March 1874, filed 20 June 1873. Reese assigned the rights to the patent to John T. Wright (also of Chicago). Indicative of the simplicity of the invention is the brevity of its text specification, the shortest of any in the settable units series except another filed by Reese subsequently (discussed below). Of possible significance is the acronym 'U.S [...]' spelt by the assembled stencils in the patent's specification drawing (see overleaf), possibly a patriotic link to the Union Army for whom Reese had fought just a few years earlier (cf. note 9; also biographical postscript below). Patentees often used their specification drawing to spell out a name or set of initials (usually their own), or a message (see Fig. 28).



9. Specification drawings from Lester Robinson, 'Improvement in stencil-plates', US Letters Patent no. 132,691, dated 29 October 1872.

10. 'The Old Reliable', S. H. Quint & Sons, Philadelphia.





Reese was clearly intent on bringing his invention to manufacture. For evidence of this, it is necessary to leave the settable-units patent series to follow Reese's entrepreneurial activities, so far as they can be traced. Sometime during 1874, a circular was issued advertising 'Reese's Patent Adjustable Stencil Plates'¹⁸ (Fig. 12). It describes and illustrates an already fully developed product with a multitude of uses: 'for shippers in marking merchandise and produce ... manufacturers for labelling contents on boxes ... merchants and real estate men in making signs and bulletin boards ... millers and distillers for branding barrel heads ... farmers and planters for marking bags, robes, blankets, implements, trunks, valises, umbrellas... cheese factors for dating cheese ... in fact nearly all classes find them useful, profitable and desirable'. Tellingly, an analogy with printing (types) is immediately evident: in addition to the headline's bold claim that the Adjustable Stencil was the 'greatest invention since printing', the copy goes on to state that '[a]ny word, name or address can be formed and as readily distributed again, the same as printers' type'; and that the device was to be sold in '3-A' or '10-A' fonts, designations used by typefounders to describe the distribution of characters in a single font of type, as determined by their relative frequency of use.

Elsewhere, the comparative advantages of the Adjustable Stencil are further spelt out. Its individual plates 'are complete in themselves, requiring no clamp or device to hold them'. It is also compared favourably to stencils with fixed graphic matter, what the circular's copy calls 'stationary' stencils, an 'old style ... of no use to any other [purpose] than the one they were cut for'. No 'lining out' (i.e. ruling of baseline guides) was needed either; so too, the characters were 'accurately spaced' and therefore 'when copied they are on a

11. Specification drawings from Samuel W. Reese, 'Improvement in stencil-plates', US Letters Patent no. 148,087, dated 3 March 1874.

^{18.} The circular was probably issued after March 1874, the patent date shown below the trademark, but before late November when a Canadian patent – not listed on the circular – was granted (Samuel W. Reese and John F. Wright, 'Improvements on stencil plates', Canadian Patent no. 4102, dated 26 November 1874; Reese again assigned the patent to Wright).



12. Circular for 'Reese's Patent Adjustable Stencil Plates', 1874. 365×220 mm.

line and artistic'. By a kind of synchronicity, the copy suggests an association between words and texts thus marked out and the 'wellregulated' business that will not do without the Adjustable Stencil 'when [its] advantages are known.' Even what might be deemed a fault in the Adjustable Stencil is turned to good effect when the otherwise obtrusive ribs, formed across the assembled plates by the lock-grooves, are claimed to control the spread of excess ink from the brush.

The Adjustable Stencil trademark is similarly conceived in full. It shows two hands assembling the individual stencils to form the acronym 'R.A.S.P.' (i.e. Reese's Adjustable Stencil Plates). The Adjustable Stencil is thus pictured and demonstrated and, through the assembly of its name (acronym), becomes literally and figuratively self-defining. If to a present-day perspective this self-referencing seems unremarkable, it has nevertheless an attractive conceptual wholeness and a practical value in explaining at a glance how the device actually worked. Such fusion must have given Reese and his associate Wright a good deal of confidence: while the 'greatest invention' claim quoted above might be uncharitably assigned to predicable hyperbole, the second headline - 'perfection in stencil letters and figures' – is more than mere hucksterism. Further claims that the public would 'accept them as the most practical, the cheapest and best article for the purpose [of marking] ever invented' and that they would 'last a lifetime' must have struck an unnerving chord among other stencil-makers at a time when, in the United States at least, the use of stencils for marking of all kinds appears to have been widespread.19

Based on the circular, Reese and Wright took the Adjustable Stencil into production soon after receiving their patent. Less clear is why Reese assigned the patent to Wright; he may perhaps have ceded it in exchange for Wright's help in drawing it up, or for meeting the initial costs of manufacture.²⁰ Some arrangement was in any case agreed by June 1873 when Reese filed the patent, and again in November 1874 when the equivalent Canadian patent was granted, also (as noted) assigned to Wright. In so far as sales were concerned, the circular indicates that this was to be done in two ways:

longevity, while its tensile strength (i.e. its resistance to breaking when folded) no doubt also contributed much to the lockgroove's viability.

20. The Lakeside Annual Directory of the City of Chicago for 1874–1875 lists Wright as a 'general agent'; his business address was Room 22, 102 Washington Street.

^{19.} Prices of the variously configured fonts are given in the circular; a 3-A font of 75 pieces, for example, cost \$3.75; by the 1880s this would drop by more than half to \$1.70 (cf. Fig. 18). The circular also states that plates were 'machine-cut in spring brass with steel dies, and perfect in design and finish.' The durability of spring brass would have ensured the Adjustable Stencil's

by retail mail order or through wholesale distribution to 'hardware dealers, stencil men and the trade'; at the base of the circular, space was left for local retailers to overprint their details. The pair were also quick to advertise elsewhere, for example in issues of *Scientific American* during the first six months of 1875 (Fig. 13). It was an appropriate place to announce the Adjustable Stencil, as the pages of *Scientific American* were at this time devoted to the avalanche of contemporary inventions, with articles and digests of the latest patents included in each weekly issue. Reese advertisements appear at the back of the journal every second week between 9 January and 12 June and were aimed at 'hardware dealers and stationers'. B. E. Hale of Park Place in New York City was the contact for respondents requesting circulars, although from 20 March a new name, O. G. Bryant of Chicago, was given for inquiries in Ohio and the west.²¹

COMPLICATIONS

While Samuel Reese's Adjustable Stencil was impressively simple and useful, and its manufacture at first seemingly untroubled, complications began to arise in the latter half of 1875. These can be detected in the settable-units patent series if we take it up again at this time. Apart from G. E. Warren's patent of February 1875²² (Fig. 14, overleaf) – filed after Reese's had been published but oddly still dependent on a frame – the next of note is W. M. Kellie's of October 1875²³ (Fig. 15). It is very similar to Reese's and different only in the design of its lateral join. Instead of integrated folds, a free standing clip is used to secure adjacent plates. One can not help drawing the conclusion that Kellie was aware of Reese's now conspicuously advertised Adjustable Stencil, a conclusion supported by the words Kellie uses for his own device – an improved 'adjustable stencilplate' – the first time this specific wording appears in any of the settable-unit patent specifications.²⁴

21. The Lakeside Annual Directory for 1874–1875 lists Oliver G. Bryant as a 'loan broker'; his business address was Room 22, 102 Washington Street., i.e. the same as Wright's. The year before Bryant had been listed in Edwards Directory of Chicago as a 'private banker'. The coincidence of addresses and the professional descriptions given by Wright and Bryant suggest a commercial relationship between the two and possibly that Bryant held a financial stake in the Adjustable Stencil. The Lakeside Annual Directory for 1875–1876 lists Bryant as the 'proprietor' of Reese's Patent Adjustable Stencil Plates, as the new enterprise was named, now located in Room 19, 102 Washington Street.

22. George E. Warren (of Wolcott, Vermont), 'Improvement in stencil-plates', US Letters Patent no. 159,725, dated 9 February 1875, filed 27 July 27 1874.

23. William M. Kellie (of Nashville, Tennessee), 'Improvement in stencil-plates', US Letters Patent no. 168,400, dated 5 October 1875, filed 31 July 1875.

24. Reese apparently devised the name 'Adjustable Stencil' sometime after filing his patent in 1873, as it does not appear in that patent's text specification.

13. Classified advertisement for 'Reese's Adjustable Stencil Letters', *Scientific American*, 3 April 1875.

14. (top). Specification drawings from George E. Warren, 'Improvement in stencil-plates', US Letters Patent no. 159,725, dated 9 February 1875.

15. (middle). Specification drawings from William M. Kellie, 'Improvement in stencil-plates', US Letters Patent no. 168,400, dated 5 October 1875.

16. (bottom). Specification drawings from J. L. & H. L. Tarbox, 'Improvement in stencil-plates', Reissue no. 6753, dated 16 November 1875; forming part of US Letters Patent no. 87,727, dated 9 March 1869. No sooner was Kellie's patent published on 5 October 1875 than, on 21 October, the Tarbox brothers re-filed their patent of 1869, seeking a reissue (Fig. 16)²⁵ on the grounds that the first was 'defective, in that the specification and claims do not cover and embrace all of the original invention'. Although the re-filed patent was little different, its specification placed far greater emphasis on the invention's lack of a frame, the lateral connection of its individual plates and the overlapping of their edges (this latter feature was also redrawn in the newly submitted specification drawing). Only as the penultimate claim (of five) was their unlikely clip-joint mentioned, a feature that in 1869 was set out rather more prominently. Thus while Kellie may be fairly seen as an opportunist, the Tarbox brothers were it seems asserting priority to Reese's patent, feeling – not unjustifiably – that it owed a debt to their own. And the assertion is hardly surprising given the Adjustable Stencil's commercial promise.²⁶

25. Reissue no. 6753 of US Letters Patent no. 87,727, dated 16 November 1875, filed 21 October 1875 (cf. note 13 above).

26. The Tarbox brothers had already made a similar submission to protect Eugene's stencil disk. The disk was patented in 1868 (US Letters Patent no. 81,032, dated 11 August) but a reissue was sought (and granted in 1871) to specify the invention more clearly. The action was sensible as the stencil disk proved a product of considerable longevity, made and sold for many decades by the New York Stencil Works, a company the brothers established in 1868. Reproduced in E. Kindel, 'Stencil work in America, 1850–1900', *Baseline* 38 (2002).

It is uncertain whether the Tarbox brothers made any demands on Reese or Wright, or threatened suit for patent interference, but some recognition of priority was to come. This was precipitated by the next patent in the series, filed by none other than Reese himself²⁷ (Fig. 17) only weeks after the Tarbox reissue was published. The claim on which Reese's new patent was granted the following February was a redesigned lock-groove, now formed of an S-fold on one edge of the plate and, on the other, less a fold but rather a simple deflection in the plate edge that rose up to and fit within the adjacent S-fold. Reese added another feature too: at the top of the plate the S-fold was cut away at an angle to ease the initial joining of plates. It, however, was not listed among the patent's claims. Each improvement appears relatively minor but both are important. In practice, the new configuration was considerably easier to use; commercially, the granting of the patent itself as sufficiently distinct from the 1873/4 specification (assigned to Wright) meant Reese could legally make an Adjustable Stencil without ceding rights (or profits) to any one else. Whatever arrangements had been in place with Wright and possibly Bryant, it now appears that Reese wished to be free of them.

To effect this change in the manufacture and sale of the Adjustable Stencil, Reese joined forces with Christian H. Hanson, an industrious Chicago stencil maker whose company was reinvigorating itself after the city's Great Fire of 1871.²⁸ In partnership as 'S. W. Reese & Co.', they began making the Adjustable Stencil (Fig. 18, overleaf), probably at the C. H. Hanson premises at 38 South Clark Street.²⁹ A half-page advertisement in *The Lakeside Annual Directory* for 1876–1877 (Fig. 19) illustrates the new arrangements: the

27. Samuel W. Reese, 'Improvement in stencil-plates', US Letters Patent no. 173,058, dated 1 February 1876, filed 24 December 1875. There is no assignee for this patent, i.e. Reese retained all rights to it.

28. See biographical postscript below. Hanson, like Reese, was a veteran of the Civil War on the Union side.

29. Early evidence of the Reese-Hanson partnership is found in court records dis-

cussed below (note 33). *The Lakeside Annual Directory* for 1876–1877 also lists 'Reese, S.W. & Co. (S. W. Reese and C. H. Hanson) stencils, 38 Clark'. The partnership was apparently set up either in late 1875 as part of Reese's preparations for submitting his new patent, or in early 1876 when the patent was granted. Later Reese catalogues (e.g. *Catalogue 22, c.* 1920–1930) state that the company was established in 1876.

17. Specification drawings from Samuel W. Reese, 'Improvement in stencil-plates', US Letters Patent no. 173,058, dated 1 February 1876.

18. Stencil plate, brass (die-cut and folded), from box set no. 10 (3/4 in.), Reese's Adjustable Stencil Letters, S. W. Reese & Co., *c*. 1880s. Actual size. Box label reads: '3A font, 70 pieces, letters only [plus 1 border and 1 corner], assorted, with ink and brush, \$1.70'.

19. Advertisement for 'Reese's new improved patent Adjustable Stencil letters', *The Lakeside Annual Directory*, volume for 1876–1877.

Adjustable Stencil was now 'Reese's New Improved Patent Adjustable Stencil Letters', protected under the February 1, 1876 patent ('just out') and sold at Hanson's South Clark Street address by S. W. Reese & Co., 'patentees and manufacturers'. A new trademark was also unveiled, rather cruder than the first and spelling 'Eureka'; the patent date was included on the left end-plate.³⁰

COUNTERATTACKS

If Reese had successfully effected new and more advantageous arrangements for making and selling the Adjustable Stencil, then what followed suggests that Wright and Bryant were quite dissatisfied with developments and may even have felt betrayed. Thus only seven weeks after Reese's patent was granted, Wright and Bryant filed one of their own³¹ (Fig. 20). It contained little that was new however, and could hardly claim much advance even on Reese's first patent. But it did specify one crucial feature: the top of the right edge fold was cut away at an angle to ease the joining of plates. This, of course, was the very improvement Reese had shown in his second patent but failed to claim. In fact the Wright-Bryant patent was largely an assertion of the need for such a feature, and their co-opting of it appeared to undermine Reese. If the specification

30. Despite having just established S. W. Reese & Co., Samuel Reese did not remain in Chicago but instead went East sometime in 1876. His movements are given in *The Lakeside Annual Directory*: in 1876–1877 listed as 'house Philadelphia' and in 1877– 1878 as 'house New York'. It appears that Reese was in Philadelphia for the Centennial Exhibition (the circular shown in Fig. 12 came from a group of printed items collected from exhibitor stands at the Exhibition) and on arriving in New York City set up new commercial premises (see biographical postscript below). While the partnership between Reese and Hanson remained intact, the manufacture of the Adjustable Stencil was apparently left wholly to C. H. Hanson in Chicago.

31. John T. Wright and Oliver G. Bryant, 'Improvement in stencil-plates', US Letters Patent no. 186,395, dated 16 January 1877, filed 22 March 1876; Wright assigned his rights to Bryant.

was accepted, Wright and Bryant could challenge the legitimacy of Reese's Adjustable Stencil since it arguably infringed their design.

That Wright and Bryant were pursuing precisely this strategy is borne out first by an appeal of interference lodged by Reese against the pair during the period when such submissions could be filed prior to a patent's approval. Reese's appeal, made to the USPO and asserting priority to the cut-away fold was, however, dismissed and in January 1877 the Wright-Bryant patent was granted.³² But the legal moves were not yet over: the following month, Reese and Hanson filed a complaint against Bryant in the US Circuit Court in Chicago.³³ It alleged that Wright and Bryant had 'fraudulently and surreptitiously' obtained their patent by representing the claim to the cut-away fold as new and original when in fact they were fully aware of its use by Reese, as described (if not claimed) in his 1876 patent; in any case, Reese and Hanson argued, the cut-away fold was hardly innovative, just mechanical good sense. The complaint went on to draw attention to Reese's contentiously failed appeal to the USPO, and to Reese and Hanson's already established enterprise as further reasons for revoking the Wright-Bryant patent. It also noted that Bryant was issuing notices to the trade imputing S. W. Reese & Co.'s 'infringing' Adjustable Stencil.

The Reese-Hanson complaint was apparently inconclusive as the surviving 1877 case file contains no ruling and is incomplete; what is clear is that the complaint was eventually allowed to lapse.³⁴ Technically (though by no means morally) the Reese-Hanson argument

32. It has not been possible to trace Reese's original appeal of interference; its contents have been inferred from a later report on Reese's motion to re-open the interference decision ('Wright and Bryant vs. Samuel W. Reese. – motion', *Official Gazette of the United States Patent Office*, vol. 11, no. 9, Tuesday, 27 February 1877, p. 329); and from court records discussed below (see following note). Reese's appeal had been thrown out after arriving at the USPO in Washington DC two days after the stipulated appeals deadline. Although a fee had been duly paid in Chicago, leading Reese to assume that the appeal had been properly lodged, the papers were delayed in the post by snowstorms. Reese's motion for the interference decision to be re-opened was denied largely because the Wright-Bryant patent had by then been granted.

33. Samuel W. Reese & Christian H. Hanson vs. Oliver G. Bryant, US Circuit Court, Northern District of Illinois, Case no. 14,435 (in Chancery), complaint filed 26 February 1877. Case file held by the National Archives & Records Administration (NARA), Great Lakes Region, Chicago. The complaint was lodged against Bryant

20. Specification drawings from John T. Wright and Oliver G. Bryant, 'Improvement in stencil-plates', US Letters Patent no. 186,395, dated 16 January 1877.

alone, although Wright (as patent assignor) is implicated in it.

34. The case file contains the original complaint (of which possibly half is missing), a subpoena addressed to Bryant (issued on 30 April 1877, served on 1 May), notice of Bryant's representation by his lawyer in court (1 June), and Bryant's demurrer to the complaint (20/22 June). A note written on the outer wrapper of the case file reads: 'July 8, 1881. Dismissed [for] want of prosecution'. was probably a weak one. Some indication of Bryant's confidence in the face of legal proceedings is found in advertisements issued by him at this time. A full-page announcement for 'Bryant's "new patent improved" Reese's patent Adjustable Stencil Letters' in *The Lakeside Annual Directory* for 1877–1878 (Fig. 21) demonstrates Bryant's application of his own name to the Adjustable Stencil and its priority, literally and spatially, over Reese's. The advertisement also

21. Advertisement for 'Bryant's "New Patent Improved" Reese's Patent Adjustable Stencil Letters', *The Lakeside Annual Directory*, volume for 1877–1878. bristles with warnings. Bryant is himself described as the 'owner of the only patent under which Adjustable Stencils can legally be made', while all relevant patents are now listed: Reese's US and Canadian patents of 1874, the Wright-Bryant patent of 1877 and, intriguingly, the Tarbox patent of 1869 and its 1875 reissue – clearly some accommodation had been reached with the brothers. Equally provocative is the statement beneath: 'These patents were fully sustained by the courts. See decision of His Honor Judge Drummond, at Chicago, May 15, 1877'.³⁵ This and the listed patents together form a frame around a somewhat cruder version of the original Reese trademark now incorporating two additional plates ('A' and '2') below it and a 'trademark registered' notice.³⁶ Underlining the whole arrangement in large sans serif capitals was the exhortation 'beware of infringing letters'.

Despite the legal fireworks and O. G. Bryant's strenuous claims to the Adjustable Stencil invention, to its trademark and indeed to Reese's name, the legal positions of the two parties apparently remained ambiguous while over the next several years their respective commercial profiles fluctuated. Reese and Hanson continued undeterred in the manufacture of their already-established Adjustable Stencil and advertised confidently in The Lakeside Annual Directory, often to what must have been, for readers, wholly confusing effect. In the 1878–1879 volume, for example, S. W. Reese & Co. announced 'Reese's New Improved Patent Adjustable Stencil Letters' by the 'patentees and manufacturers' in a half-page advertisement situated directly above Bryant's classified listing for 'Reese's Patent Adjustable Stencil Letters and Figures (genuine with Bryant's Improvements), sole manufacturing agency'. But the 'Bryant-Reese Patent Stencil Co.', as Bryant's enterprise was now called, also seemingly faltered in the later 1870s when advertisements and listings for it appear and disappear in successive volumes of The Lakeside Annual Directory, at various addresses and under at least two proprietors other than Bryant.

By 1880, however, the Bryant-Reese company issued a new circular³⁷ (Fig. 22, overleaf) that echoed their aggressive advertisement of 1877–1878. Bryant's 'new patent improved' is again given priority over 'Reese's patent adjustable stencil letters and figures' in the headline. The company is described as the 'only manufacturers under the patents' and these are once more listed in full. As in the earlier advertisement, the presence of all the patents on the circular certainly forced home the assertion that Bryant's were the 'only legal' Adjustable Stencils, and buyers were twice exhorted to 'beware of worthless infringements' and to 'refuse to buy infringing letters'. 35. As stated above, there is no record of a ruling in the case file; it is difficult to reconcile Bryant's notice of a 15 May 1877 decision with the surviving case documents dating Bryant's representation in court after subpoena and his subsequent demurrer (see previous note). It is tempting to regard Bryant as a shyster; it is certainly true that he was well acquainted with legal proceedings: between 1873 and 1878, for example, he is listed as a plaintiff in no fewer than nine Superior Court (Cook County) cases and a defendant in four others.

36. The 'May 16, 1876' date given below the trademark suggests that Bryant was also busy registering his rights to the trademark around the time he and Wright submitted their patent.

37. The circular carries the address of 108 Washington Street, which is first listed for O. G. Bryant in *The Lakeside Annual Directory* for 1880. The circular accompanied correspondence sent by Bryant dated August 1880 (see following note).

22. Circular for 'Bryant's "New Patent Improved" Reese's Patent Adjustable Stencil Letters and Figures', Bryant-Reese Patent Stencil Co., Chicago, *c*. 1880. 280×216 mm.

In other respects, its copy echoed (or plagiarised) Reese's own circular of 1874 (see Fig. 12). Adjustable Stencils could, for example, be used in many ways: for 'printing signs, prices and show cards, marking bags, boxes, bales, robes, trunks, milk cans, cheese boxes, barrels, for sale or rent cards, sign boards, fence advertising and 1000 other uses too numerous to mention.' The analogy with printing is also revisited in the sub-headline: 'a font of these letters makes a complete printing press'; and in the text: 'the lettering is quickly done, always on a line, correctly spaced, and perfect as printing' and 'with a font of these letters any printing or lettering can be done, as they can be instantly changed to form any "brand," word, name, sentence or address, the same as type in printing.' Similarly, typefounders font designations reappear: 2-A and 3-A, their assortment explained by reference to the 'printer's rule'. Still, the Bryant-Reese circular wasn't wholly derivative: the front of the company envelope illustrated compartmentalised cases for organizing the stencils (Fig. 23), perhaps Bryant's first original contribution to product development and an image that put the Reese name, literally, in the shade. Yet here too is the first co-opting of the original Adjustable Stencil trademark to carry a new brand: 'Bryant's'.³⁸

REVERBERATIONS

Robust though the Bryant-Reese circular was, it may have been a last blast as there is little subsequent evidence of the company, and after 1881 its listings in *The Lakeside Annual Directory* cease.³⁹ O. G. Bryant appears independently as a 'stencilmaker' at 124 South Clark Street

38. While tangential to the narrative, it is of interest to quote correspondence sent by Bryant to L. R. Spang, a dealer in West Fairview, Pennsylvania, as it reveals some of Bryant's commercial concerns. (Errors and orthography in the original are unchanged, though several breaks have been imposed for clarity): 'My Dear Sir, Your P[urchase] O[rder] is at hand. We have made you our lowest prices & given you our best discounts. Most of our stock of letters have been made during the spring & summer & brass is higher than it was 12 or 14 months ago when we made our stock for fall of 79. When we set a die or dies for cutting we must cut a large nomber to make it pay & we must sell them as they cost &c. We had to charge the list of nos. 11 & 14 & some others as we lost money on them. Fractions are hard to make any money in; they cost us all we get for them as they are extra work & must all be hand made & beside are very slow sale & it does not pay us at all; only we must have them as some are wanted. In short we cannot do any better by you than we have done. Wish we were able & we would have done it at first. We make no more than we must on the goods sent you; only a living profit. If you will look on enclosed cir[cular] and price list you will see no[s]. 11 & 14 are quoted as per Bill. Bulk letters should be net only to large Jobbers & our President insisted for some time that your Bill should be so sent. But I over persuaded him to let me give you some dis[count] &c. as we give Jobbers & you should be well satisfied & when you learn the facts of course will be. Yours, Bryant-Reese P[atent] Stencil Co., [illegible] O. G. Bryant, manager'. (Author's collection)

39. The lapsed complaint against Bryant, dismissed (as noted) in July 1881, may indicate that Reese and Hanson no longer considered Bryant a threat or that the Bryant-Reese company had quit trading by this time. It is notable that among the numerous stencil sets documented while assembling this essay, none from the Bryant-Reese company have been identified.

23. Envelope from the Bryant-Reese Patent Stencil Co., Chicago, *c*. 1880. 88×160 mm.

24. 'Reese's Adjustable Stencil Letters, trademark, from box-top label, *c*. 1880s.

25. 'Reese's' interlocking stencils, C. H. Hanson, box set (1/2 in.), 2005. 74×93 mm.

26. 'Improved Interchangeable "Lock" Stencil', S. G. Monce, brass (die-cut and folded), from box set (1 in.), *c*. 1900–1920. Reduced to 84 per cent linear.

as late as 1886 and for the last time in 1889 as a 'watchmaker' and as 'O. G. Bryant & Co.'. S. W. Reese & Co. (affiliated with C. H. Hanson), by contrast, appears annually in *The Lakeside Annual Directory* through 1888, with Hanson listings continuing thereafter.⁴⁰ Elsewhere, Reese's Adjustable Stencils remained conspicuous in retail catalogues issued by stencil and stamp works at this time, proof that the network of dealers and 'stencil men' Samuel Reese had foreseen as his principal sales outlet was working well.⁴¹ Descriptions of the Adjustable Stencil in these catalogues are typically brief and without any elaborate printing types analogy, suggesting that the device was now readily understood. Space is instead devoted to enumerating the available character sizes and box set configurations.

In the succeeding decades, C. H. Hanson continued to make the Adjustable Stencil under the Reese brand name and distribute it to retailers, though its product identity evolved in certain respects.⁴² The single hand 'Eureka' trademark, for example, introduced in 1876 (see Fig. 19), was soon altered to a troupe of cherubs patiently assembling the same word (Fig. 24). The Adjustable Stencil's description on boxes and in catalogues also changed: first 'new patent' was dropped, then 'improved', before 'interlocking' replaced 'adjustable' in the product name (S.W. Reese & Co., however, continued to advertise the 'Adjustable Stencil' in their catalogues into the 1930s, and also sold it as the "Eureka" stencil combination'). Latterly, the C. H. Hanson Company (as it was incorporated in 1913) began supplying interlocking stencils to retailers for repackaging under other proprietary names and without reference to 'Reese'. Hanson too began packaging interlocking stencils under its own name and continues to do so today. The Reese brand appears (if inconspicuously) on the Hanson box, still considered a recognizable and valuable link to the original product (Fig. 25). The design of the stencil plates remains unchanged, though Samuel Reese's 1876 patent for the lock-groove has now lapsed.

Around 1900 (though possibly before), competing settable-unit stencils began to appear. One early manufacturer was the S. G. Monce Company; it offered an 'Improved Interchangeable "Lock" Stencil' whose design (Fig. 26), ironically, followed Samuel Reese's first (i.e. unimproved) patent specification. Monce also adopted the

40. Although the explicit affiliation between Reese and Hanson ends in the late 1880s, Hanson continued to advertise Reese's Adjustable Stencils prominently, as numbers of the *Commercial Stamp Trade Journal* from the early 1900s show.

41. e.g. Quint's stencil, stamp, and letter works (Philadelphia, c. 1887–1895), S. M. Spencer's stencil & rubber stamp works (Boston, c. 1890), also S. W. Reese & Co.'s Catalogue F (New York, 1889).

42. Statements in the following two paragraphs are based only on sets of settable-unit stencils and catalogue listings documented while assembling this essay; they should not be taken as comprehensive.

original 'R.A.S.P.' trademark (see Fig. 12), perhaps assuming the acronym would no longer be understood. Others joined in and they, like Monce, avoided infringing the patented lock-groove by relying on the (apparently now generic) folds of Reese's first patent, in some cases improved with the angled cut-away claimed by Wright and Bryant. Monce appear to have taken a special interest in export, particularly to Britain where catalogues issued in the decades after 1900 list 'interchangeable "lock" stencils' (sometimes shortened to 'lock stencils') illustrated with the 'R.A.S.P.' trademark.43 But if Monce did supply dealers overseas, E. V. Richford (London) regretted to announce immediately after the First World War that 'American made [brass] Lock Stencils may no longer be imported' and would be replaced by English sets made of zinc. Other suggestions of settable-units stencil export - if only the concept - come from trademarks adopted by some European retailers. Those of F. R. van Houten (London), for example, or the Sächsische Metall-Schablonen-Fabrik (Zwenkau, near Leipzig) are recognizably derived from American models, now with hands redeployed (with and without cuffs and jacket sleeves) to assemble the stencils in some specific way (Fig. 27, a-b). The trademarks of T[hevenon] & C[ie] Paris, found in French and Spanish catalogues of the late 1920s and early 1930s (Fig. 27, c–d) derive from Reese's original, while (Fig. 27d) refers specifically to the Bryant-Reese trademark of 1877 (cf. Figs. 21 and 22). The T. & C. examples are inevitably reconfigured to form its own brand though the product itself is unnamed, or rather is described by what was then the generic French term for stencil letters: 'caractères à jour'.

SETTABLE UNITS: LAST PATENTS

The narrative of the settable-units series can be rounded off by returning to those patents filed soon after Wright-Bryant's of 1877. They serve to illustrate a continued interest by inventors in claiming improvements to settable-unit stencils that were both legally sus-

AVEC

LES CARA

S'ESPACENT S'ALIGNENT

SEULS

27. Trademark reconfiguration by foreign manufacturers/distributors.

a. F. R. van Houten Manufacturing Co., London; shown in *Rubber and Metal Stamps*, n.d. (c. 1930s).

b. Carl Hoep / Sächsische Metall-Schablonen-Fabrik, Zwenkau (near Leipzig); shown in *Signier-Schablonen*, n.d. (c. late 1930s); Rügen is a Baltic Sea island due north of Berlin.

c. T. & C., Paris; advertisement distributed with an A–Z font of conventional single-character stencils, n.d. (c. 1930s).

d. T. & C., Paris; shown in *Catálogo General de Sellos, Aparatos y Accesorios*, Valencia: José Castellets, n.d. (c. 1927–1928). Collection of Robin Fior.

43. Pattern book of the 'Eclipse' rubber stamps (London: J. Waller & Co., 1901), 'Pioneer' rubber stamps, catalogue 20 (London: AHU, c. 1910), Richford's India rubber stamps, type pads &c. (London: E. V. Richford, c. 1920), Rubber and metal stamps (London: F. R. van Houten, c. 1920). 28. Specification drawings from David G. Garretson, 'Improvement in stencil-plates', US Letters Patent no. 199,197, dated 15 January 1878. **29.** (above). Specification drawings from Charles H. Dana, 'Improvement in stencils', US Letters Patent no. 204,803, dated 11 June 1878.

30. (right). Specification drawings from William M. Harris, 'Lock for stencil-plates', US Letters Patent no. 275,205, dated 3 April 1883.

44. David G. Garretson (of Chicago), 'Improvement in stencil-plates', US Letters Patent no. 199,197, dated 15 January 1878, filed 5 February 1877; Charles H. Dana (of Lebanon, New Hampshire), 'Improvement in stencils', US Letters Patent no.

tainable and commercially viable, while reinforcing the sense that the design already arrived at by Reese was hard to better. Several patents stand out: those of D. G. Garretson, C. H. Dana, and W. M. Harris (Figs. 28-30).44 All were based on stencil plates with an integral joining feature; indeed the patents of Garretson and Harris specify nothing more than complicated alternatives to Reese's earlier innovations. Dana, on the other hand, proposed a simpler idea: an adjustable stencil whose plates were made of paper or card. The right front face of each plate, coated with adhesive, was stuck to the underside of the next plate. It certainly satisfied the requirement of settability, if not the corollary of resettability. One additional patent worth noting is J. R. Bourne's⁴⁵ (Fig. 31); it proposed the only significantly original alternative to Reese's lock-groove. Rather than sliding adjacent plates together, Bourne devised a series of interlocking and mutually engaging projections on the left and right edges of each plate. It was a realistic solution, deficient only in its inability to form a sealed join between plates; his three versions were he

204,803, dated 11 June 1878, filed 20 April 1878; William M. Harris (of Menlo, Iowa), 'Lock for stencil-plates', US Letters Patent no. 275,205, dated April 3, 1883, filed 2 December 1882. Garretson was a prominent Chicago stencil-maker at this time; contrary

to his boasting specification drawing, his company was later bankrupted.

45. John R. Bourne (of Rochester, New York), 'Stencil', US Letters Patent no. 451,105, dated 29 April 1891, filed 26 January 1891.

claimed simpler and cheaper than previous solutions.⁴⁶ With these patents, efforts to devise settable-units stencils based on integral plate joins were apparently exhausted as no others are found in the patent record. There are, however, a surprising number of patents filed after the mid 1870s (not illustrated here) that continued to rely on a frame of some kind.

AN IDEA REALISED

The realisation of 'settability', long implicit in composition stencilling and eventually made good in the Adjustable Stencil, is an advance that merits special attention in a longer history of stencilling. By fixing inter-character spacing and alignments through interchangeable assembly, settable-units helpfully regulated the otherwise irregular aspects of single-character stencil use. If one entertains the notion that settability in the context of stencilling may emerge from a moveable types paradigm, then it is unsurprising that the first patents for settable-unit stencils relied on an enclosing frame, ironic that the breakthrough to the Adjustable Stencil was made only by dispensing with the frame subsequently, and again unsurprising that a printing analogy was adopted to explain how the device worked. But the Adjustable Stencil's simplicity soon made references to printing and moveable types unnecessary, while its versatility, durability and easy handling confirmed its usefulness in many circumstances of marking. That the benefits of such a device were clearly understood is evident in the fulsome nineteenth-century patent record for settable-unit stencils, and in the enthusiasm with which the Adjustable Stencil was first brought to market and then fought over. It might also be asserted that the introduction of the Adjustable Stencil was itself exactly right for an historical moment when, in the United States at least, rapidly expanding manufacture, transport and trade made such a device welcome and for all the reasons Samuel Reese's circular first claimed in 1874. While some of the Adjustable (now Interlocking) Stencil's uses have since been superseded by other methods of marking, labelling and signwriting, its longevity is proof of an invention difficult to improve on and whose value is unlikely to ever cease entirely.

46. A settable-units stencil made of cardboard plates with interlocking projections is presently sold in the United States.

Biographical postscripts

O. G. Bryant and J. T. Wright⁴⁷

Oliver G. Bryant first appears in Edwards Directory for 1873 where he is listed as a 'private banker'. The following year (actually 1874–1875), in The Lakeside Annual Directory, his profession is altered to 'loan broker'; John T. Wright appears for the only time this same year, as a 'general agent'. In 1875-1876, Bryant is listed both as 'loans' and under 'Reese's Patent Adjustable Stencil Plates' as 'proprietor'. The double listing is repeated the following year (1876–1877) except that 'loans' is altered to 'banker'. In 1877-1878, Bryant is now the 'sole proprietor' of 'Reese's Patent Adjustable Stencil Plates', and again listed separately as a 'banker'. The following year Bryant disappears from the listings except as the 'Bryant-Reese Patent Stencil Co.' whose proprietor is George T. Dalton. In 1879, the Bryant-Reese company disappears, while Bryant reappears as a 'jeweller'. A year later (1880) he is a 'watchmaker' and, in 1881, a jeweller again. That same year (1881) the 'Bryant-Reese Patent Stencil Co.' returns to the listings with F. Woodhull named as president, then disappears for good. Oliver G. Bryant is listed in 1886 as a 'stencil maker' and for the last time in 1880 as a watchmaker again and as 'O. G. Bryant & Co.'.

C. H. Hanson (1842–1914) / The C. H. Hanson Company⁴⁸ Christian Henry Hanson was born in Denmark and emigrated to the United States in 1861. He was a veteran of the Civil War (1861– 1865), having joined the 39th New York Infantry soon after arriving in the US. Hanson was wounded at the battle of Gettysburg (Pennsylvania, July 1863), hospitalised and eventually demobilised at Chicago where he began work as a stencil cutter in 1866. His premises were destroyed in Chicago's Great Fire of 1871, which consumed much of city, though he was able to re-establish his business using chisels and a set of stencil dies (punches) he and his brother had saved. Thereafter, Hanson's company grew steadily to become one of the principal marking businesses in the US, while Hanson himself also served as the Danish consul in Chicago. After his death in 1914, control of the business, incorporated as 'The C. H. Hanson Company', passed down through the Hanson family and is today

47. For this essay, no extensive search for biographical information about Bryant or Wright has been conducted; the following data are from volumes of *Edwards Directory* of *Chicago* (1873) and *The Lakeside Annual Directory of the City of Chicago* (1874–1890).

48. Data from Hanson's obituary in the *Commercial Stamp Trade Journal*, vol. 23, no.

^{6,} June 1914; 'The C. H. Hanson Company', Marking Industry, May 1967 (18–19, 27); and K. Rivard & T. Brinkmann, The marking story: a bistory of marking & marking devices and the marking industry in North America (Chicago: The Marking Device Association, 1968), pp. 59–61; and information supplied by Craig Hanson, May 2005.

run by the fifth generation. The company was located on South Clark Street for many years; it is now based in the Chicago suburb of Franklin Park.

S. W. Reese (1843–1913) / S. W. Reese & Co.⁴⁹

Samuel Widdows Reese was born in Clifton, Pennsylvania. Like C. H. Hanson, he was a veteran of the Civil War, serving in the 1st Pennsylvania Reserve Cavalry from 1861. Reese was wounded at the battle of Brandy Station (Culpeper County, Virginia, June 1863), captured and held for a month in the notorious Libby Prison (Richmond, Virginia). After his release through an exchange of prisoners, he returned to duty for the remainder of the war. It is not known when or under what circumstances he arrived in Chicago, but Reese first appears in *Edwards Directory* for 1873, listed as a 'stencil cutter'. He established S. W. Reese & Co. in Chicago in 1876, before relocating the business to New York City (via Philadelphia) though, as noted, remaining affiliated with C. H. Hanson. S. W. Reese & Co. grew to become a full-service marking company, making and selling the usual range of stencils, stamps, seals, badges, tags and much else, and occupied various addresses in the city's Pearl Street commercial district (lower Manhattan) including at New Church, Fulton, Vesey and Ann streets. Reese settled in Westfield, New Jersey (10 miles southwest of Newark) in the early 1880s, was married and fathered three sons, the youngest of whom was Sherman. After Samuel Reese's death, it appears the company was run by, or remained in the control of the Reese family until the early 1950s, when it was sold by Sherman Reese to Harry Whitman. The company, still styled S. W. Reese & Co. and located in Pomona, New York, passed to Whitman's son Marvin in the 1960s; in 2004, Marvin Whitman wound up the company and S. W. Reese & Co. has now ceased trading.

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