

APPENDIX F*

[003_303] [April 1800]

THOUGHTS ON THE MEANS OF PREVENTING FORGERY IN THE CASE OF PAPER MONEY, PARTICULARLY BANK-OF-ENGLAND NOTES (APRIL 1800)¹§ 1. *Of Forgery, in the way of Fabrication.—Particular Safeguards proposed.*

Forgery in general, and of *Bank paper* in particular is committed either in the way of fabrication, or in the way of alteration.^a The distinction is a fundamental one, the plan of operation to be pursued in combating the criminal enterprize being altogether different in the two Cases.

^a *Fabrication* when a paper which never passed through the hands of the Bank is made to assume the appearance of a Bank note: *alteration*, or (as it may be termed) *falsification*, where in a real Bank Note a fictitious larger sum is contrived to be substituted to a genuine smaller sum.

To begin with the case of fabrication, being the case which in my view of the matter presents the

* [Editor's Note: This Appendix reproduces an essay written in April 1800 which Bentham first conceived as a section or chapter in 'Circulating Annuities', but which, encouraged by Colquhoun, he decided to detach from the work with a view to submission to the Bank of England, and subsequent separate publication. On 8 April 1801, when the bill for the prevention of forgery enacted as the Bank Notes Forgery Act (41 Geo. III, c. 57) was before the House of Commons, Sir Samuel Romilly passed a copy of the essay to Edward Law, later first Baron Ellenborough, Attorney-General 1801–2, Lord Chief Justice 1802–18.]

¹ This Appendix reproduces an essay which Bentham first conceived as a section or chapter in 'Circulating Annuities' (see p. 000 n. above) [To note to UC ii. 106, 'Circulating Annuities', Ch. II], but which he detached, revised and sent to Patrick Colquhoun on 25 April 1800, who forwarded it to Samuel Bosanquet (1744–1806), merchant and banker, Director of the Bank of England 1771–1806, Deputy-Governor of the Bank of England 1789–91, Governor of the Bank of England 1791–3: see Bentham to Samuel Bentham, 26 April 1800, *Correspondence (CW)*, vi. 292. A copy of the essay is at UC iii. 341–56, where the following note is at iii. 342: 'M^r B is not *quite* certain with regard to the correctness of the copy, not having examined it himself.'

On 15 May 1800 Bentham sent the essay to Étienne Dumont: see Bentham to Dumont, 15 May 1800, *Correspondence (CW)*, vi. 294. Pierre Étienne Louis Dumont (1759–1829), Genevan political writer, produced five recensions of Bentham's works between 1802 and 1829. On 8 April 1801, when the bill for the prevention of forgery enacted as the Bank Notes Forgery Act (41 Geo. III, c. 57) was before the House of Commons, Sir Samuel Romilly passed a copy of the essay to Edward Law (1750–1818), later first Baron Ellenborough, Attorney-General 1801–2, Lord Chief Justice 1802–18: see Romilly to Bentham, 8 April 1801, *Correspondence (CW)*, vi. 386.

greatest difficulty. I will state in the first place, the particular expedients that have occurred to me: by this means the general principles by which those expedients were suggested will place themselves in the clearer point of view.

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1. In the room of the Emblematical figure,² exhibit the head of some real person:—some Officer of the Corporation—either temporary, such as the *Governor*, or permanent, such as the *Cashier*: the engraving to be executed by the most skilful Artist whose services can be engaged.

2. As a means of reducing the expence, (resulting from the want of adequate durability in the case of engravings made on metallic or other plates) employ the invention of M^r Professor Wilson of Glasgow: I mean the art whereby designs originally engraved on copper are, by means of an intermediate mould, transferred to glass—a material in which copies may then be made in any numbers, each of them yielding impressions, little, if any thing, inferior, in point of sharpness, to those which would be yielded by the original plate or matrix:—and these impressions in a number far greater than what the original is capable of yielding in the same degree of sharpness, glass being less liable to wear in this way than any metal or other material, on which engravings for the purpose of yielding impressions are usually made.^b

^b [003_305] The invention, being held up to view by the Author himself in the light of a security against forgery, may probably enough have been forwarded to your Notice in that character by the Author himself. Lest it should not, it may be proper here to mention, that an account of it may be seen in *Nicholson's Philosophical Journal for May 1st 1798*, N^o 15:³ being there reprinted, from a Paper circulated by the Author with specimens which I have seen, and heard spoken of by Artists, as being adequate to the performance of what is promised. It is there represented in general terms as calculated to afford a security against forgery: but in what particular way it is proposed to operate in that character is not mentioned. '*High elaboration*'—'*collateral embellishment*'—and '*peculiar manner of some eminent master*'—are there recommended in that view: but that the subject should be the portrait of some living person is not said.

Supposing the invention to be capable of attaining its object (a point in which I can not take upon me to pronounce, knowing nothing of the invention any more than of the ingenious Author but from the papers mentioned above) the advantage in point of economy promises to be great indeed. But

² See p. 000 & n. above. [To note to UC ii. 117, 'Circulating Annuities', Ch. II]

³ See p. 000 n. above. [To note to UC ii. 106, 'Circulating Annuities', Ch. II] The remainder of this paragraph is in a copyist's hand with corrections by Bentham.

that even without any such reduction, the objection on the ground of expence need not be regarded as insuperable, seems to result from the present practice. The wear and tear upon the portrait of a real person would not be greater than upon the figure of an emblematical personage—an embellishment which, for whatever purpose designed—ornament or security—or both—is not denied to Bank Notes of the very lowest magnitude, and which as such are, I suppose, struck off in the greatest number:—I mean the £1 Notes.⁴

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3. In a particular part of the Note, insert a quantity of Letter-press, in a type to be appropriated by law to that purpose, and which, if so appropriated, must therefore be such a type as nobody either ever has applied, or could ever have occasion to apply to any other purpose: suppose a type half as tall again or as tall again in proportion to its breadth, as the tallest type known to be in use. The letter-press in question might serve to convey a caution against the employment of such *type*, as well as against the imitation of the abovementioned *portrait*, in the form of a reference to the Act of Parliament which would require to be obtained for that purpose.^c

^c The paper of a Bank Note contains so much unemploy'd space, (not to speak of the reductions which the part employ'd might upon occasion be made to admitt) that the lower half might be appropriated without inconvenience to the reception of Letter-press and would be sufficient to contain a very ample quantity of it. The engraving might thus be impressed on the Upper part on the same side: by which means the back would be free for endorsements, as at present. For the General Plan of a Note, see Farther § 5.⁵

It may seem singular enough that the invention, the sole object of which was the multiplication of the number of copies, should be the very invention pitched upon for the purpose of preventing copies from being made. By what circumstances it is rendered applicable to this use will appear in the next Section.

4. To accompany the Letter-press, insert a head of the same person, or of another person, from an engraving on wood: because impressions made from that material are capable of being printed off in the same press and at the same time, as the Letter-press: which in the case of engravings on metal is said neither to be practised nor practicable.

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⁴ See p. 000 n. above. [To note to UC ii. 117, 'Circulating Annuities', Ch. II]

⁵ See pp. 000–000 below. [To UC iii. 335–6, this file]

§ 2. *Sequel—General Principles, relative to the framing of Safeguards against this branch of Forgery*

1. Methods which have for their object *the prevention* or at least the *obstruction* of the attempt, (viz: by taking away all prospect, or diminishing at least the probability of making it with success) are preferable to those in which the aim is confined to the detection of the crime. In a word, expedients of the preventive or *obstructive* kind (as they may be termed) are preferable to those of the *detective* or *ensnaring* kind.

2. Secret marks, being expedients of the *ensnaring* kind, are essentially inadequate: and even the more so, the greater the subtlety of the contrivance. In these, the aim is—that they shall escape the eye of a person engaged in this crime. But if the mark relied on be so unapparent, and consequently the variance between the genuine note (on which it stands impressed) and the spurious note (on which it is supposed it will be omitted to be impressed) be to such a degree proof against observation, as to escape the eye of an artist, and of an artist too whose life is at stake upon the discovery, much more certainly will this be the case in regard to the unpracticed and incurious multitude.^d

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^d Expedients here spoken of as being of the *ensnaring kind* may well be termed so, since by leaving the appearance of facility to the result which their aim is to render difficult the tendency of them is rather to invite than to discourage the attempt. In the eagerness of the pursuit after detection, they shut the door against the more eligible object, prevention. Expedients of the preventive kind, on the other hand embrace both objects at once: prevention, to a superior degree of certainty; detection, to a degree superior still: *prevention*, in the instance of the multitude of ingenious profligates who, but for this bar, might have been disposed to hazard the attempt: *detection*, in the instance of this or that desperate offender, should any such arise, whose temerity may have shut his eyes against the hazard of the enterprize.

I dwell the more particularly on this head, suspecting that under the present system, secret marks are actually employ'd: and that thus, for want of making the use that might be made of the obstructive class of expedients, as above exemplified, the apparent chance of practising this species of forgery with success, and thence the encouragement, as it were, held out to the practice of it, is left much greater than what it need be.

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3. The difficulty (apparent as well as real) of carrying on a plan of forgery (as well as any other

forbidden enterprize) with security and success, will be enhanced by every additional use which, in the framing of the written instrument in question, can be made of the *obstructive* powers of the several circumstances following, that is to say—

i. The multiplicity of *distinct* arts, the concurrence of which is necessary to the production of the effect in question: viz: the original, lawful effect in the first place: and thence of the forbidden effect, where (as here) the effect lawfully produced, by a person or persons specially authorized, is forbidden to be produced or imitated, by individuals at large.

ii. The degree of skill necessary to the exercise of each such art, and thence the fewness of the persons who are capable of applying it with success to the forbidden purpose.

iii. The difficulty of concealment in each instance: viz: either in regard to the exercise of the *art* or operation, or in regard to the *work* produced by it.

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iv. The care that has been taken, in the construction of the instrument, to introduce such an implement or set of implements (the more numerous the better) as shall be susceptible of an adequate description, capable of being convey'd by general terms alone, without depending on so vague and lax an idea as that of *similitude*, with reference to an individual standard or pattern: and this, for the purpose of pointing the artillery of the law, with the less danger to innocence and with the greater certainty in regard to guilt, against the act of employing or having in one's possession the implement or implements so described. For the application of this general idea, see the following illustrations.

v. The care that has been taken, after contriving and prescribing an apparatus with a view to its being made to receive such a description, to frame the description itself in such a manner as to render it adequate to that same purpose. For the application of this general idea, see again the following illustrations.

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§ 3. *Sequel—Application of the above principles to the Particular Expedients above suggested.*

1. First in regard to the multiplicity of distinct arts, the concurrence of which has been rendered necessary to the production of the genuine instrument: and thence, of the forbidden spurious one.

By *distinct* arts I understand for the present purpose, such arts as in the course of professional usage are not commonly exercised by one and the same person: and the distinction will be the more entire, and in the proposed point of view the more effective, the less the facility which the exercise of each such art affords to the exercise of any of the rest, and thence the more difficult it will be for them to be exercised, all or several of them, by one and the same hand, to a degree of perfection adequate to the forbidden purpose.

The force of the obstruction thus produced will not be materially different in point of efficacy, whether it be the case of a confederacy, or whether the enterprize be to be carried on by a single hand: in the case of a confederacy, the obstruction results from the danger of detection, by indiscretion or disagreement as between confederate and confederate: a danger which increases of course along with the multitude of the confederates: in the case of a single [003_312] offender, it results from the improbability that so many distinct branches of skill shall be united in one and the same hand.

In the framing of a Bank note upon the present plan, the number of concurrent arts that may thus be stated as distinct is but *two*, or at most but *three*—viz: [1.] The art of the Paper-maker: 2. The art of the engraver of writing on Copper plate; (to whom, were it only for the purpose of occasional trial, the art of the Copper plate Printer can never be altogether strange) to which may or may not be added, as an art distinct from that of engraving letters, the art of engraving figures, in respect of the emblematical figure, which presents itself at the beginning of the writing contained in a Bank Note.⁶

In the framing of a Bank Note upon the plan *proposed*, the concurrence of the following *additional* distinct arts would be rendered necessary, viz:

1. The art of the engraver of portraits on Copper.
2. The art of the *Letter-Founder*—
3. The art of the engraver of the *puncheons* for the making of the moulds or *matrixes* for the Letters—
4. The art of the maker of the moulds or *matrixes*.
5. The art of the *finisher* of the Letters when cast.
6. The art of the *Printer* who prints the Letter-press.

⁶ See p. 000 n. above. [To note to UC ii. 117, 'Circulating Annuities', Ch. II]

7. The art of the engraver who engraves that one of the two portraits which is to be engraved on wood: a branch of engraving so distinct from that of the engraver on copper, that a perfect master of the one, may be comparatively very inexpert in the other.

8. The art of the Draughtsman who makes the Draughts preparatory to the engraving of the two portraits.^e

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^e I will not take upon me to aver the impossibility of executing by Letter-press what shall be taken for Copper-plate:⁷ but it will be utterly impossible to execute, by the common mode of engraving Copper-Plate what shall be taken for Letter-press: at least, if the impressions made with the types be made deep in all the copies with this view.—By engraving the whole body of letter press together, as it were upon one large puncheon the acts of the maker of the *matrixes* the *founder* and the *finisher*, of the *letters* would indeed be discarded; and the effect of the Letter-press might, in this way be discarded; and the effect of the Letter-press might, in this way be produced (I suppose) (as in the *stereotype* plan) as well as by separate types.—But whether by this expedient any additional facility would, upon the whole, be produced is what I cannot but doubt: it belongs to artists *alone* to pronounce—Hence, however, at any rate, arises a *further* use in *increasing* the *quantity* of Letter-press.

[003_314]

2. In regard to the degree of skill made requisite to the production of the genuine instrument, and thence also of the spurious one.

Of all possible applications of the act of design, the case in which imitation is most difficult as well as deviation most observable, is that of a portrait exhibiting the face of a real person, engraved by a first-rate hand. When I say *observable*, I speak with reference not merely to a professional eye, forewarned pre-appriized of the probability of imitation, and scrutinizing the object with a view to detection, (for in that point of view, the expedient would belong rather to the *ensnaring* than the obstructive class) but with reference to the incurious eye of the artless and uninstructed multitude.

This one expedient will be sufficient of itself to paralyze the hands of the vulgar herd of forgerers. An ordinary artist will feel in all its force the difficulty of making his productions in this way pass for those of a first-rate hand: and the chance seems small indeed, that an artist whose skill, in this

⁷ This note is in the hand of a copyist.

the most lucrative branch of the art, is considerable enough to present him with any hope of thus employing it with success, should conceive it worth his while to go astray from the safe and honourable paths of his profession, for the sake of plunging into an enterprize so full of infamy and danger.

[003_315]

3. As to the *difficulties thrown in the way of concealment*, in regard to the productions of the several arts, the concurrence of which has been rendered necessary, as above.

In the present state of things, the only production, by which the criminal enterprize is capable of being betray'd, is in the case of *fabrication*, the engraved plate, and in the case of *alteration*, even this resource fails. On the proposed plan, the following articles, being added to the apparatus necessary for bringing into existence the genuine work, will be so many articles any one of which, if found in possession of any uncommissioned individual, may if made to receive an appropriate and adequate verbal description, be sufficient to afford conclusive evidence of the crime. These are—i. The drawing serving as a pattern to work from in engraving the portrait on the copper plate.

ii. The [003_316] Copper plate itself.

iii. The assortment of appropriate types in the finished state.

iv. D^o in the unfinished state.

v. The assortment of matrixes corresponding to those types.

vi. The assortment of puncheons corresponding to the types and matrixes.

vii. The drawing serving as a pattern to work from in engraving the other portrait on the block of wood.

viii. The engraved block of wood itself.

[003_317b]

4. and 5. As to the care taken, in the choice of the subservient instruments or productions in question, that they shall be such as are susceptible of a *verbal* description, precise enough for the purpose of legal prohibition; and in the adapting the description to that purpose.

Note, that the instrument or production, thus taken for the subject of prohibition, must, in each instance, be of such a sort as, *after* the warning so given by the law, or rather, if possible *without* any

such warning, it will be morally impossible that a man should set about producing, with any other intention than a criminal one: viz: the intention of producing the mischievous imitation, which it is the object of the plan to prevent.

[003_317a]

To apply this to the case of a Bank Note, framed and worded as at present—

The indication that would be afforded by a plate, fabricated in imitation of a Bank Note of the present form, answers this purpose *as far as it goes*, as effectually as can be wished. Nothing but the very words employ'd in a genuine Note could afford the Forgerer any the smallest hope of succeeding in the fabrication of a spurious one: and supposing a plate with these words upon it to be found in the possession of any uncommissioned individual, no evidence could be more perfectly conclusive of the existence of the criminal intention in question on the part of the individual at least by whom the plate was made to exhibit [003_318] these words, whatsoever possible circumstances might be adducible in exculpation of him in whose *possession* the plate were found.

But in addition to the *one* source of obstruction and detection thus constituted by the existing plan, the proposed plan affords *eight* other impediments of the same sort: all which however are comprizable under two heads: viz: those which regard the *Portraits*, and those which regard the *types*. The business is so to order both these articles as that for the purpose of prohibition and punishment, and that without peril to innocence, they shall be susceptible of the precise verbal description above required.

As to the *portraits*, a bare portrait, could not, of itself, nor without particular accompaniments, be accommodated to this purpose. A *fancy* portrait may by accident be *like* a real one: among real ones, a portrait designed for one person may bear a near *resemblance*, possibly even a still nearer resemblance, to another. Suppose the words of the law to be as follows:—*a figure engraved in imitation of and designed to pass and be taken for the head or effigie of J.S. as the same stands represented on the face of a Bank Note*. Conceived in terms like these, a verbal description would scarcely of itself be adequate to the intended purpose. To the eye of a scrupulous Jury, even a close and skilful imitation might present itself as the possible result of accident, and thereby afford room for doubt: and the less close the imitation, the greater the [003_319] room for such doubt. To leave the requisite lassitude of permission for such portraits as might otherwise be made of the person in question without any other view than those which give birth to other portraits, the prohibition might, (it may be supposed) be confined to portraits within such and such limits in point of *size*: but, after every thing that could be done in this

way, the want of certainty with regard to the subject-matter of the imitation would remain unremoved. The question *Guilty or not Guilty* would still rest on no firmer ground than the vague idea of *similitude*.

To remove this uncertainty, an additament, to some such purport as the following, would, it is presumed, be effectual enough. Connected with the effigie, a *legend*, indicative of the individual represented: as thus—Write[?] on the one portrait, *Abraham Adams, Esq.—elected Governor 31 May 1800:*⁸ write on the other, *Benjamin Browne Esq. appointed Cashier 2 Jan^y 1790:*⁹—together with this further additament—*For security against Forgery*. The legend out of the question, with the same guiltless intentions that give birth to other portraits, the portrait of M^r Governor Adams might, not only be taken for his own use or the use of a friend, but even exposed to sale in the way of trade: with intentions equally guiltless it might happen, that so much of the proposed legend as is indicative of the individual represented might also be connected with the portrait and in the same way: but that, with any other intentions than the criminal ones supposed, an individual not commissioned by the Bank should in connection with any such portrait, or with any portrait whatsoever, fabricate the proposed additional part of the legend, [003_320] especially after the use thus made of it by an artist commissioned by the Bank, may for every practical purpose be pronounced morally impossible.

If the portrait were capable of being executed apart from the legend, the portrait at any rate, and perhaps the legend likewise, might be begun, and pursued to completion, by a criminal fabricator, without exposing him to the degree of danger here intended. On this consideration the *design* should be so contrived, if possible, as that these two component parts in the composition of the engraving should not be capable of being worked at otherwise than on one and the same plate. To preserve the requisite connection, and at the same time steer clear of every thing ridiculous or unbecoming in the mode of forming it, is a caution to be observed, (but which in the hand of an intelligent artist might effectually be observed) in any one of a variety of ways, the description of which would occupy more room than would be worth employing here.

[003_321]

As to what regards the *types*, the question concerning the existence or non-existence of the intention to imitate, not being as in the case of a portrait, exposed to doubt, the only point which the verbal description has to bear upon is that which regards the *proportions*.

⁸ The name Abraham Adams is fictitious: the Governor of the Bank of England from 1799 to 1801 was Samuel Thornton (1754–1838), merchant and MP for Kingston-upon-Hull 1784–1806, and for Surrey, 1807–12, 1813–18.

On this occasion, mere reference to a pattern, without mention of proportions would not serve: it would possess the same imperfection as that above indicated in the case of the *portrait*. Types have been employ'd in a variety of forms, and for a variety of purposes: amongst others for the purpose of resembling hand-writing, and in that case furnished accordingly with flourishes such as those with which hand-writing is apt to be accompanied. A type furnished with a particular set of flourishes would not come up to the purpose here in view: because, unless it were a flourish capable of a precise verbal description for the purpose of prohibition, there is no sort of flourish concerning which it could be pronounced, with a degree of certainty adequate to the purpose, that it might not by accident have been adopted by an individual, without any such forbidden view.

[003_322]

Proportions, being circumstances capable of being sufficiently expressed by verbal description, are the characteristics suitable to this purpose. *Taller to such a degree than ordinary*, or *broader to such a degree than ordinary*—such is the plan of description which by words alone, and without the assistance of a pattern would be capable of serving for the proposed appropriate type. Between the tallest and the broadest type as yet known in this Country the difference does not amount to more than one tenth: the same line which contains forty letters in the one case containing no more than four-and-forty in the other.^f A type which, instead of being only one *tenth part* as tall again as the tallest at present in use, should be *as* tall again, is therefore a sort of type, to the fabrication of which, as no man ever has been led hitherto by any design whatsoever, so, especially after the requisite appropriation supposed, it may safely be pronounced, that no man could ever be led by any other design than the criminal one supposed to be marked out for punishment.

^f If the numbers (as taken from enquiry made of an artist of the first eminence in the printing line) are not absolutely correct, they are at any rate abundantly so for the present purpose.¹⁰

[003_323]

A precaution here to be observed is—to leave a sufficient distance (such a distance as shall be *sure* to be sufficient) between the proportions employ'd in the *genuine* instrument, and the nearest proportions capable of being employ'd without infringement of the prohibition, designed for the

⁹ The name Benjamin Browne is also fictitious: the chief cashier at the Bank of England was Abraham Newland: see p. 000 n. above. [To note to UC ii. 424, 'Circulating Annuities', Ch. I]

prevention of *spurious* ones. If, for example, the type employ'd in the genuine Notes were to be no taller than half as tall again as the [tallest]¹¹ now in use, at the same time that, under the terms of the prohibitive clause in question, any person were at liberty to employ a type of any degree of tallness that did not absolutely come up to that of the type employ'd, as above, on the genuine Note, the prohibition would remain open to evasion, and be inadequate to the purpose. But if, as under the provision above supposed, the type employ'd by authority were quite as tall again as the tallest in use, at the same time that by the words of the law, individuals at large were prohibited from employing any type that should be so much as half as tall again as the assumed standard, no type it is evident enough, could be fabricated that that should be capable of being taken for the genuine one, even by the most incurious eye, without contravening the supposed prohibition, and that to such a degree as could [003_324] not, morally speaking, have been the result of any other design than the criminal one meant to be proscribed.^g

^g Let it be observed, nothing turns here upon the *precise proportions*: for simplicity of description, and facility of conception, examples of them are here thrown out at random, and the disparity raised to a pitch supposed to be much above what is necessary. It might however be much greater without prejudice to legibility:—witness many *antient deeds*.

Nor does any thing turn upon the *wording*. Employ'd by a person not conversant with the art, and addressed to persons supposed to be equally unconversant with the art, the *terms* here employ'd are such, and such only, as are in common use. In the tenor of the proposed law, the terms employ'd in lieu of these common terms, or at any rate in addition to them, would be the appropriate *technical* terms in use among the professors of the respective arts.

[003_325]

The same principles might (it is evident) be extended to the *paper*. But what has been already suggested in regard to the *impressions*, (being marks made by *colours* superinduced upon the paper after its formation) will, it is supposed, be thought sufficient: nor does this ingredient in the composition of the instrument seem capable of being acted on in this view with equal advantage as those others.

Water-marks are employ'd already in this view:—and what is done in that way has the advantage of adding in so far to the list of *distinct* arts, the concurrence of which is rendered necessary, as above. But in comparison of those *coloured* marks, a *Water-mark* is a very unobtrusive one: it

¹⁰ See, for instance, John Baskerville, *A Specimen of Baskerville's Types*, Birmingham, 1775; William Caslon, *A Specimen of Printing Types, by Wm Caslon, Letter-Founder to the King*, London, 1798.

¹¹ MS 'broadest'.

labours, by that means, under the disadvantage of being liable to escape the observation of the bulk of individuals, and coming thereby in a proportionable degree under the censure past on *secret* marks: and by reason of its faintness it stands the more exposed to imitation, and accordingly has, (it is said) been imitated, by marks superinduced upon the paper after its issuing[?] out of the hands of the paper maker. Apply to this what is said in § [4]¹² on the means of preventing Forgery in the way of *alteration*, by *protuberances* and *perforations* producible by *stamps*.¹³ By such means an addition might be made to the *quantity of work* to be executed by the criminal artist, but hardly to the number of *distinct* arts. The engraver of the puncheons for the *types* would be competent (it is supposed) to the engraving of all such *stamps*.

If what I have heard be true, one of the principles, laid down in this and the preceding Section, has already been carried into practice in the case of *coining*. I have [003_326] heard it spoken of, and that long ago, as one of the recommendations attendant on M^r *Bolton*'s mode of coining, that the execution of the work requires a degree of force, too great to be applied, without an apparatus, the working of which, is by one circumstance or other, and in particular by the *room* it occupies, rendered in a manner incapable of concealment.¹⁴

What is here said, in that view, of the *instruments* or *works* which are the *productions* of the several arts thus pressed into the service, might in some cases (the abovementioned one of *coining* for example) be applied, perhaps with advantage, to the *operations* by which the *arts* in question are exercised, and the *works* produced. But, upon trial, no such advantage (it appeared) could be in the present case.

If instead of *paper*, *silk* were employ'd, devices, on the foregoing principles, might be worked into the silk—a loom widely different from all other looms might thus be rendered requisite—and another very distinct art, or cluster of arts, might thus be pressed into the service. But after the other safeguards, could it be worth while to add so very expensive a one?

[003_327]

§ 4. *Of Forgery in the way of Alteration—General Principles*

¹² MS '5.' is a slip.

¹³ See p. 000 below. [To UC iii. 333, this file]

¹⁴ Matthew Boulton (1728–1809), manufacturer and entrepreneur, established a mint for copper coinage at his Soho Manufactory in Handsworth, Birmingham, in 1788, equipping it with eight steam-powered presses. Erasmus Darwin (1731–1802) observed that, in addition to benefits of quality and cost, the coins were made 'with marks of such powerful machinery as must totally prevent clandestine imitation, and in consequence save many lives from the hand of the executioner': see *The Botanic Garden; A Poem, in Two Parts*, 2 vols., London, 1791, i. 29 n.

In this department of Forgery, the field of *attack* being, in comparison of the other, so extremely narrow, so, accordingly, will be the field of *defence*. The subject matter of operation being, by the supposition a genuine Note, the imposture confines itself to that part of the paper which bears the words expressive of the sum promised by the Note.

The plan of attack being moreover so extremely *different* in the two cases, so accordingly will the plan of defence.

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In the former case, the leading principle is *complication*. In the present case the principles of defence are as *simple* as they will be found effective.

1. In Notes of different *classes* (the *class* being constituted by the *sum*) the difference in point of general appearance, as between class and class, should be as conspicuous and striking as possible:— and the obstruction thus afforded to falsification will be the greater, if the diversity can be made to extend over the whole or the greater part of the matter contained in the Note.

2. These differences should moreover (according to the rule already given) be of such a nature as to be capable of being sufficiently described by words.

3. The plan of description should be so simple, and the number of words requisite for the expression of the whole system of difference consequently, if possible, be so small, as that *each* individual Bank Note should be capable of containing, and should accordingly be made to contain, a descriptive view of this sort, comprizing *all* the classes.^h

^h In this view, the fewer the classes the better, consistently with other purposes. Of the possibility of calling in and suppressing any of the existing classes, see § 6.¹⁵

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Besides there being the circumstances of there being a genuine instrument to operate upon, two other circumstances concurr in limiting the field of attack in the present case.

One is—that to engage in it a man must be already in possession of a Bank Note, or, to carry it on to any extent, a stock of Bank Notes, and consequently be exempt from those incitements that are

¹⁵ See p. 000 below. [To UC iii. 337–9, this file]

afforded by extreme indigence; and moreover while it is yet dubious whether the Note can be made capable of passing for the spurious increased value, its capacity of passing for its genuine value must be done away and sacrificed.

Another is, that according to the arrangement at present observed in the words of which the tenor[?] of a Bank note is composed, in one at least of the places in which the sum is inserted, the word expressive of the spurious sum can not, in respect of the number of letters composing it, and the space requisite to contain that number, differ much, if any thing, from the word expressive of the genuine sum.

After this limitation, the field of alteration remains, however, still open in regard to sums expressed by words composed of the *same* number of letters: whether the alteration be practicable in the case where the numbers, though different, differ only by one, is more than I can take upon me to pronounce.

According to this view of the matter, a *One* Pound Note, supposing the appearance, as between class and class, to be in other respects the same, will be capable of being altered into a *Two* Pound Note, or into a *Ten* pound note: but not into any other: A Five Pound Note will not be capable of being altered into any other. A Forty Pound [003_330] Note will be capable of being altered into a Fifty Pound Note or a Sixty Pound Note: A Twenty Pound Note, into a Thirty Pound Note: and so on. What may be the number of such different classes at present in circulation, and what the respective sums, I do not pretend to know: nor would it be so much as worth enquiring: since fresh classes i:e: Notes for sums not at present extant, may come to be issued at any time.

Forgery in the way of alteration having been practiced, (if I may speak from a loose recollection derived from Newspapers),¹⁶ and that, with a degree of temporary success, in more instances than one, the idea of making a difference in point of general appearance in this view has already, (I am inclined to think) not only suggested itself, but been carried into practice, in some instances at least: whether *throughout* is more than I am informed of.

What I am *apprehensive* of is—that if, in this view or any other, any such differences have been

¹⁶ After the suspension of payment in specie by the Bank of England in 1797, prosecutions for forgery of the new £2 and £1 notes became common. Bentham may have in mind such cases as those of John Crawford (c. 1760–98), reported in *Lloyds Evening Post*, 4 July to 6 July 1798; or Charles Linsey or Lisney (c. 1766–99), reported in the *Oracle and Daily Advertiser*, 25 June 1799. There were 11 capital convictions for banknote forgery in 1798; 12 in 1799; and 29 in 1800: see ‘Accounts Relating to Prosecutions for Forging Bank of England Notes’, in *Commons Sessional Papers* (1818), xvi. 161.

studiously made, they are not of such a nature as to be (according to the second of the rules above given) expressible in words. What is certain is—that whatever may be the differences, no such notification of them as is proposed in the third rule is to be found in any instance.

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But, so long as no such notification is given, the differences, expressible or not expressible in words, will be lost to this purpose, in regard to the bulk of readers, who receive Bank Notes, or Notes purporting to be such, as they come, but who for want of adequate inducement never set themselves down to form to themselves any comparative view of the appearance, as between one class of Notes and another; much less think of extending such comparison to all the classes.ⁱ

ⁱ Thus I know, that in my own instance, though having at this moment occasion thus particularly to apply my mind to the subject, neither has it ever happened to me to attempt to institute any such survey, nor without a great deal more trouble than there would be any use in my bestowing, would it now be in my power to attempt it. How wide soever the difference in point of general appearance may be between a one Pound Note and a Ten pound note for example, yet were a pretended Ten Pound Note, made by alteration out of a One Pound to be tendered to me it would not find me prepared for the detection of the imposture.

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As to the particular plans or modes capable of being adopted, and adopted with success, for the exhibition of differences thus expressible, they are too numerous and too various to be worth enumerating in the present stage of the proposal. The difficulty would lie not in finding one such mode capable of answering the purpose, but in making a choice amongst a multitude all presenting themselves as alike capable.

The principle now before us cuts up the evil by the roots: instead of applying itself to the rendering alteration *difficult* or *impracticable*, it renders it *unavailing*, in whatever degree of perfection it may have been practised. Of the other expedients above alluded [to] thus much may accordingly be said in the lump, viz: that whatever scope they may afford for the application of mechanical contrivance or chemical science, they occupy but a subordinate station, in the scale of practical importance.^j

^j It was with these however, that I set out, a great many years ago: and of these a considerable variety has presented itself to me, each of them promising to be, of itself adequate to the intended

purpose.

I will subjoin an extremely summary, but comprehensive view of them, rather for curiosity than use.

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NOTE TO TYPESETTER: Please centre the following line of the note.

I. Expedients of a *mechanical* nature.

1. Employing a stamp, in one or more places for framing the letters expressive of the same. Colour might be used with this stamp, not so much by way of security against obliteration (it being but a precarious one), as to render the letters more conspicuous in common use. The protuberance produced by the stamp could not (it is supposed) be reduced for the purpose of falsification; at least if such a degree of depth were given to it as might be given to it. Among the particles forced in, some of them being borrowed, as it were, from parts of the paper more and more distant according to the depth of the impression, could not afterwards, it is supposed be restored. To render the absence or presence of protuberance the more discernible it might perhaps be better that in one place at least no colour should be employ'd.

2. To encrease the difficulty of obliterating the genuine letters and inserting without laceration, spurious ones, a stamp producing *perforations* might be employ'd, for tracing out all or some the letters, with or without a stamp of the ordinary or simply-*impressive* kind. Whether the texture of the paper employ'd will bear in a degree sufficient for use such *solutions of continuity* (to borrow a word from surgery) is in a way to be proved by experience: punctures (with what precise view I do not exactly apprehend) having of late been discernible, disposed in two parallel lines running above and below the sum, in the body of a One pound Note.

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NOTE TO TYPESETTER: Please centre the following line of the note.

II. Chemical expedients.

1. To the ingredient or ingredients best suited to the purpose of colour in ordinary cases, add another which being either enlivened or at least not discharged by the *menstrua* by which the ordinary colour would be capable of being discharged, would in spite of the action of such *menstrua*

remain to a sufficient degree discernible. *Probatum est.*¹⁷

2. In the composition of the paper, add an ingredient of such a nature as by the change of colour it would undergo would betray the action of any *menstruum* capable of discharging the colour of the ink or pigment.

By the discovery of that almost universal destroyer of colour, the *oxy-muriatic acid*,¹⁸ the value of the above mentioned indications is, however, much reduced.

Of chemical expedients in general it may moreover be observed, that in this point of view they are much less to be depended upon than those of the *mechanical* class: since, by reason of the prodigious accession of new lights that are constantly pouring in upon this branch of science, an expedient that shall be adequate to the purpose to-day, shall, by some fresh discovery, be rendered inadequate tomorrow.

I forbear giving details—not certainly with any views of mystery—for the curtain is compleatly drawn and to every eye in any degree conversant with that science—but merely to avoid encumbering the paper with discussions not necessary to the purpose.

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§ 5. *Plan for a Bank Note; with a view to both branches of Forgery*

Upon the whole, the plan of construction, suggested by the above principles, for the matter of a Bank Note would be distributed into four paragraphs or compartments.^k

^k In case of such a division, the course of the lines might, instead of running parallel to the *longer* side of the paper, (as at present), run parallel to the *shorter* side.

1. In the *upper* compartment, the words of the engagement itself as worded at present, with the dates and signations employ'd at present, from an engraving on copper plate (as at present), but accompanied by a *portrait* of the *Governor*, also from an engraving on Copper, as proposed, with the *legend*, as proposed. The *situation* of the portrait, either at the left hand *corner* of the paper, at the beginning of the line, as at present, or in the *center* of the compartment.

2. In the *second* compartment from the top, the warning against Forgery, expressed in Letter-press as above, with the portrait of the *Cashier*: situated as before, either on the left hand or in the

¹⁷ i.e. 'It is proved.'

¹⁸ i.e. hydrochloric acid.

center.

3. In the *third* compartment from the top, a notification of the different *classes* of Notes, as above proposed, expressive of their several characteristic differences in point of *appearance*.

4. Lastly, in a *fourth* compartment, might be exhibited a Notice, descriptive of the method to be observed in cutting a note in two for the purpose of *conveyance*: for which purpose a line marking the track for the knife or scissors, together with ten or [a] dozen words to point out the use of the line, would be sufficient.¹

¹ That the form of the Note has been modified for this purpose, and that notification has been given of it by a multitude of advertisements, is what I am sufficiently apprised of, but not being able, at least without study, to discover [003_336] this mode by simple inspection, upon the face of the Note, nor in short without recurring to the advertisements no one of which do I at present know, nor without a more or less troublesome enquiry can I know, where to meet with, these advertisements, how frequently soever they may be repeated, constitute but a very inadequate *succedaneum* to the more direct and simple method here proposed.¹⁹ In this way, the information in question conveys itself to the mind of *every person*, without exception, to whom it can be of use, and at the very *time* when it is wanted to be put to use. Confined to the occasional channel of a newspaper or the narrow channel of a few shop windows, the effect of it (to say nothing of the unnecessary expence) is not perhaps a hundredth part so great as in the way proposed.

In the paper of a Bank Note the extent of surface is so ample, and the portion really necessary for containing the quantity of matter inserted, is in comparison so small, that after allowing a quantity of space sufficient for this principal and essential purpose, there would remain a quantity amply sufficient for the several collateral purposes above indicated: especially if the type were a small one, such as those which are commonly used in Newspapers. So far from being an objection, the increase thus produced in the quantity of Letter-press would be an advantage: because the greater the quantity of Letter-press necessary, the greater the quantity of *Letter-founder's* stock necessary to the execution of it: and consequently the greater the expence and danger, and consumption of time attendant on a plan of criminal imitation, according to the principles above established.

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§ 6. *Limits to compleat Success, as against Forgery of Bank Notes &c.*

¹⁹ See p. 000 & n. above. [To note to UC ii. 105, 'Circulating Annuities', Ch. II]

Unfortunately, there are two circumstances that conspire to reduce, in no inconsiderable degree, the importance of whatever safeguards can be employed against this crime. Let us observe what, if any thing, may be to be done, towards weakening their influence.

One is—that the effect of these Safeguards is confined to such Notes, as may come to be issued at a period *subsequent* to the adoption of the safeguard in question, whatever it be: it has no application to the *pre-existing* Stock of Notes. This pre-existing Stock *might* it is true, be *called in*: that is an invitation *might* be given to the holders, informing them that fresh notes will be given them in exchange for their respective notes, if they choose to be at the trouble of conveying them to the Bank for that purpose. But without the power of *crying down* the old ones, that is of refusing to pay them, a power which the Bank does not possess, an invitation of this sort, to whatever extent it might happen to be complied with, would be inadequate to the purpose. Should even the compliance be universal, insomuch that the whole Stock of any particular class of Notes—say the whole Stock of £10 Notes—shall thus have been sent in and exchanged, this would indeed be known, at the Bank itself, but as it would nevertheless remain unknown to the multitudes of individuals to whom Bank notes may come to be offered in payment, the absorption of the whole Stock of genuine notes of this class might still fail of being sufficient, to prevent the forging and passing off spurious or falsified Notes of the same class.

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On the other hand, though it would not be in the power of the Bank to make the invitation strictly obligatory, it might nevertheless be perhaps practicable to give it such a degree of efficiency as might be tolerably adequate to the purpose. What they could not do in any instance is—on their own part to refuse payment of a Note they had once issued: but what they might do is, by proper advertisements, to cast such a shade of suspicion upon all such Notes of any given class as after being so called in should not be sent in accordingly, as would very much impede their progress in circulation, render them a troublesome property to hold in hand, and thereby give to the motives for complying with the call, such a degree of force as would in very few instances be resisted.

But the stronger the discredit thus thrown upon the few remaining *genuine* Notes of any such class, the greater is the difficulty and danger that would attach upon any attempt to pass off a *spurious* or *falsified* note of the same class. And thus, though the security given to emissions made on the *new plan* would not in a complete degree, nor in a direct way extend itself over the *old stock*, yet in an *indirect* way, and to a very considerable extent it *would* probably be productive of that desirable effect.

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When, in consequence of any such call, the number of outstanding Notes, of any such given class, had been to such a degree reduced, that a list of them would not be too long for an advertisement, the list of such notes as distinguished by their respective numbers and other characteristic marks might accordingly be advertised, accompanied by an intimation that all numbers not comprized in such list can not but be spurious: and in this state of things it might perhaps be not inconsistent with the credit of the Company, (proper powers being obtained from Parliament for the purpose) to fix a day, after which payment of such specified N^{os} should either be altogether refused, or not made but upon personal *examination* submitted to, or *collateral security* given, or other such burthensome and inconvenient terms.

In regard to any class of notes thus meant to be discountenanced, warning might also be given, in the way of *advice*, recommending it to individuals not to receive any Note of such class without first applying to the Bank to be informed whether any genuine Note bearing the N^o of that Note be in effect out-standing, and whether the dates and signatures to it be correct.

In the instance of any class of Notes thus discountenanced, attempts in the way of forgery seem little to be apprehended: the chance of passing any such note would be too precarious; the danger of detection and punishment would be too great.

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II. The other circumstance is the impossibility of extending the effect of the security with equal force, to the cases where the place in which the prohibited art is exercised is a place out of the reach of British Justice. In France, in Holland or in Germany for example the force of the obstacle opposed by the division and multiplication of concurrent arts, would not, to whatever length the multiplication were carried be by any means so great, as in the case where the scene of action lies on British ground. So much of the impediment, as is composed by the mere *physical* difficulty, would indeed remain in force: but the danger of the attempt to the criminal, if not taken away entirely, (as in the case of an enemy's country), would at any rate be much diminished. The security of this immense mass of British property would in so far be dependent upon the goodwill of a foreign state, and upon the promptness, the vigilance, the efficiency, and the uprightness of the administration of penal justice in that state.

But, howsoever the force of the impediment might be thus diminished, it would not be altogether done away: and the force of the physical impediments would remain untouched, and would be greater and greater, the farther the multiplication of requisite arts, and the degree of skill requisite to the exercise of each such art, were pushed. Divuligation too, though it might not be sufficient to draw down

punishment upon the heads <of> the conspirators, might be sufficient to render the conspiracy abortive. Upon the whole, therefore, though the security afforded in this way could never perhaps be regarded as complete, still in case of a well imagined plan of defence, the advantage derivable from it might notwithstanding be amply sufficient to compensate for the trouble: and it is in this case, that the *superiority* of the *obstructive* plan in comparison of the *detective* is particularly conspicuous.